

# Member Activity Plan



Helping you maximise the value of your API membership

## OVERVIEW of an API MAP

In achieving our mission to develop the future workforce for the Australian power sector, the API's activities range from inspiring primary school students with teacher-led STEM programs to developing industry professionals with the famous API Summer School.

The API's activities sit in 7 major portfolios, with a range of different programs within each portfolio. This document provides an overview of the specific programs and the associated opportunities for members to get involved.

We want to work with you to identify what success looks like for your organization in terms of your API membership and define a plan to make it happen (a MAP to success).

1. Connect with Undergraduate Students and your future workforce

2. Power in Diversity + diversity in the power sector workforce

3. Develop our workforce and future leaders

4. Inspire Future Careers in the Power Sector

5. Build Innovation capability in our workforce and universities

6. Strengthen University Teaching

7. Strategic Workforce Planning

## NEXT STEPS

Staff and teams across your organisation should review the information about the API's activities and identify how you wish to be involved.

Then connect with the API team to clarify: which activities, which people in your team to be involved, who does the API work with, and what does success look like for you.

## Other opportunities to get involved with the API

### Sign up to our 2-monthly Community Update email news (on-going)

An overview of our activities, achievements and upcoming events for our community. [\[LINK\]](#)

### Connect with other API community members at our live and online events (on-going)

Events are promoted via the API's LinkedIn and Facebook pages and our bi-monthly newsletter.

### Follow us on social media and contribute to discussions (on-going)



### Share your input to API Member surveys (on-going)

We periodically undertake surveys of our members to guide our programs and the information and messages we share on behalf of the API community.

### Join an API Working Group (to commence early 2023)

We will be establishing a number of new working groups in 2023 and will invite representatives from across the API community to contribute.

### Join the API team's check-in with your organisation (on-going)

The API team will connect twice per year with each member organisation – an opportunity for us all to share progress, feedback, and updates on new activities and areas of interest.

### Shape the strategic direction of the API (on-going)

1. Attend the AGM (typically in November each year).
2. Contribute to forums and engagement by the API Board.
3. Become a Director on the API Board (governor members and selected representatives).

Contact us directly - we are here to support you!



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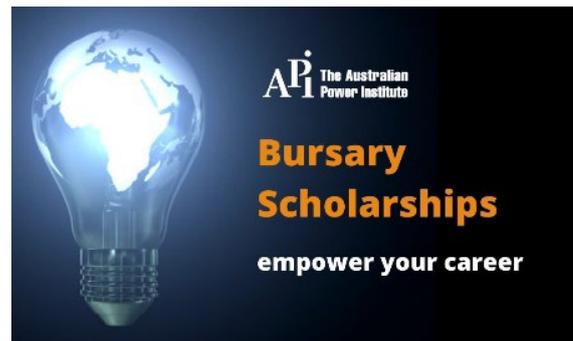
## 1. Connect with Undergraduate Students and your future workforce

*The API supports your organisation to build meaningful relationships with a targeted community of high calibre undergraduate students who are passionate about careers in the power sector and on a journey to becoming your future workforce.*

### **API Bursary scholarship program (ongoing)**

**About:** Over the past 16+ years the API have established a national community of undergraduate students who are passionate about careers in the power sector, supporting 600+ graduates to enter the power sector community.

Our goal with the program is to inspire students early in their university courses to pursue a study pathway that will be relevant to the needs of our members and to support their development and studies so they are best prepared for summer work placements and graduate employment.



**\$100,000+ in scholarships per year:** each student is supported with \$1k/year scholarships from the API during their studies and connected to our API member organisations during their studies and for paid summer work experience and graduate employment opportunities (employed by the host member).

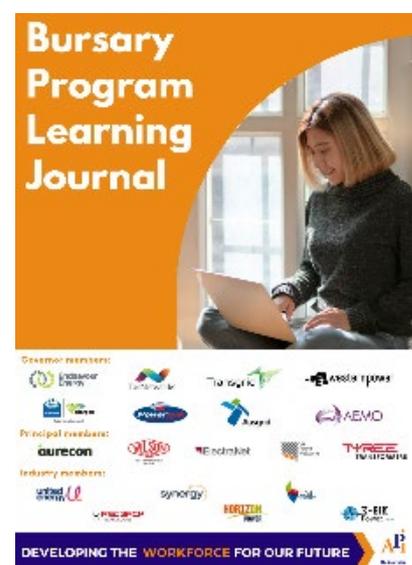
The program currently has approx. 107 students across Australia (40% female), with 25-35 new students recruited each year (the majority in their 1<sup>st</sup> or 2<sup>nd</sup> year). For 2022 onwards we are asking our members to forecast their expected future need for students so that we can optimize the number and composition of the community.

How many students can you employ? The number of students than an organization can ask for varies each year, linked to supply and demand of students and placements (which vary each year) but in general, Governor members can take up to 8x students, Principal level members can take up to 4x, and Industry members are generally entitled to 1x student but may be able to take more students if available. Typically most members take 1x or 2x students, with approx. 25-35 students on placements each year. **See the separate detailed guide on the API Bursary Program for more details.**

### **Learning Journal: a framework and resources for summer work experience placements with API members**

**About:** The API have created a range of resources to support students and employers in organizing meaningful summer work placements.

Based on feedback from members and students and education best practices developed by the Australian Council of Engineering Deans, we have developed a Learning Journal that guides student activities during a summer placement (in addition to the project work assigned by their host organization and their university).



### Students in Power online Summit

(Feb/March each year)

About: An online event in which students share their experiences working at API member organisations on summer placements through short video submissions. Watch past videos here:

[Students in Power Summit](#)

Featured students include the API's bursary scholarship recipients and any other students who have undertaken work placements at API member organisations over the relevant summer period. Students in the Career Trackers Indigenous Internship program at API member organisations, including in non-engineering roles, are also invited to participate in the Summit.



The first event in 2021 included a competition for video submissions by students on their placements, live discussion forums with students on enhancing summer placement experiences, and 'Industry Inspiration' sessions featuring professionals from API member organisations on career pathways. See winning 2021 students [here](#).

The Summit enhances the understanding of Bursary students and other undergraduate students of career opportunities at API member organisations. Selected student videos are also used to promote power engineering careers to high school students. [2022 Students in Power Summit by Australian Power Institute \(heysummit.com\)](#)

### Undergraduate Student webinar series (Industry Insights series) (ongoing)

About: A webinar series for undergraduate students (focused on API Bursary holders but also engaging other students) designed to strengthen their connections to API member organisations and to support their development of knowledge and capabilities for careers in the power sector.

Member organisations are able to put forward ideas and speakers for events that the API team will deliver.



### API Bursary student CPD modules and micro-credential (planned for 2023)

About: The API team are developing a new micro credential to recognize and reward completion of key activities within the API bursary program including summer work placements and reports, our online networking events, Student in Power online Summit, and mentoring conversations with API member representatives.

The program will include a defined set of self-study modules for undergraduate students to undertake in coordination with university study and summer work placements. Based on feedback from students and industry, the modules will enhance their industry and technical knowledge, and job-ready and innovation capabilities. We expect to leverage existing online CPD resources from partners including AEMO, EESA and CIGRE with additional input by the API. An example module being considered for inclusion is the AEMO Academy's ["National Electricity Market Overview" – elearning](#).



**Bursary Student Industry networking events** (annual, July/August in each state + national online)

About: The API coordinates live events in each state for all bursary students and member organisations to meet, welcome new scholarship recipients, celebrate students in their final year of study, and to generate interest and enthusiasm for careers in API member organisations. An API member organisation typically hosts each live event with other organisations represented.

With the disruption of COVID in 2020 and 2021, these events have switched to online activities including a national *Sparking Connections* event for all student and members several times each year. API members are able to connect with small groups of students (4-5 people).

We expect to continue these national online networking events in 2023 and return to hosting annual live state-based celebration events to celebrate and connect the new and completing bursary students in each state with our member representatives.

**API Powerful Women and Bursary student Mentor program**

About: The API's Powerful Women Leadership Program includes a mentoring component for 30+ female undergraduate students each year. API member organisations are able to nominate mentors for the program.



**Powerful Women Mentoring Program: mentors wanted!**

Do you want to help shape the aspirations and careers of future female leaders in the power sector?

We are **now inviting industry professionals** (like you!) to be part of the Powerful Women Leadership Program as a 1-on-1 online mentor.



We are also exploring a linked program, based on member interest, to connect industry professionals to bursary students and other undergraduates in targeted mentoring relationships. Potential focus areas include feedback on ideas for student research projects; starting careers in the power sector; or support for targeted diversity cohorts (beginning with mentors for female bursary students).

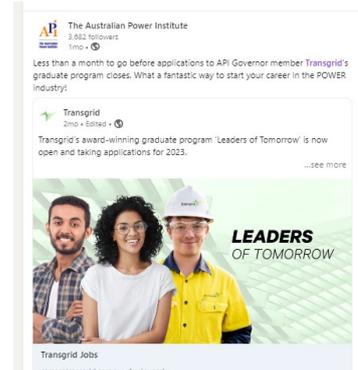
**Undergraduate Research/Thesis Project Ideas & Supervision** (planned for 2023)

About: A proposed program, based on member interest, to support industry professionals to offer and connect with undergraduate students as supervisors and mentors for research and thesis projects. Projects could be conceived by industry or universities, or a single common challenge project could be proposed by the API each year across the sector for multiple student and industry collaborations to work on.

### Promotion of Graduate career opportunities in API member organisations (on-going)

About: We are enhancing our efforts to connect Bursary students and their classmates to graduate opportunities at API member organisations, including webinar briefing sessions, social media, and an updated careers web site.

We also invite our member organisations to join our new Working Group on redeveloping the API's power engineering careers portal which includes promotion of graduate employment opportunities.



### TJ Effeney Scholarship for student professional development

This Award was created to support one of Terry Effeney's great passions which was to support the next generation. This annual award (providing a stipend of up to \$20,000) will allow successful applicants (API Bursary Holders) to undertake a project or program of study in the Energy Sector either domestically or internationally to further their professional career development. More information about the TJ Effeney Scholarship can be found on our [website](#).



### Undergraduate Student Conference Scholarships

The API supports undergraduate students to connect with industry professionals and access the most recent technical knowledge through scholarships to attend industry conferences such as the annual AUPEC, EECON and ENA conferences.

With support from Energy Queensland, the API has funded ~50 undergrad students from across Australia to attend the ENA and EECON conferences in QLD in 2022.



## 2. Power in Diversity + diversity in the power sector workforce

Enhancing the diversity of the power sector workforce is integral to all API activities, but we also undertake a number of specific programs for direct impacts.



### General diversity initiatives: recognition and celebration of the contributions of the diverse workforce across the power sector

About: The API team are currently developing a proposal for a Power in Diversity Program for the API, including targets for API activities, specific support programs, and to define the API's role and activities more clearly in leading change within the sector.

Opportunities for member organisations include participating in member workshops and contributing speakers to events and activities focused on diversity in the power sector.

### Gender Diversity initiatives (on-going)

About: The API supports and delivers a range of programs to increase gender diversity in the power sector workforce. Notable efforts include:

- A focus in our school outreach programs on raising awareness in female high school students about careers in the power sector,
- Support for female undergraduate students studying power-related courses (40% of our 107 API Bursary students are female),
- Increasing the visibility of female undergrad students and professionals within the broader public and professional audiences
- Support and scholarships for female undergrads, grads and professionals to attend industry conferences (eg ENA, CIGRE CIDER and EESA conferences in 2022)
- Support for API member organisations in attracting and retaining female team members, and to share experiences and processes for engaging and supporting women in the power sector workforce.



**TOP SKILLS:**  
Authenticity,  
Communication,  
Integrity

### MAHNEE PRZIBILLA: MY PRESENT, MY FUTURE

Tell us about yourself?  
I'm a country kid from Albury-Wodonga and moved to Sydney to study engineering. I enjoy the outdoors and love bush walking and scuba diving. I study electrical engineering, love my and power and signal processing subjects and endeavour to work in a space where I can combine the two. The data revolution of the power sector is happening right now and is the perfect opportunity to get involved!

**"Energy access transforms lives."**

**Why a career in POWER?**  
Power is vital to our everyday lives. The developments that are happening now and will happen in future, such as the transition to renewable energy and the data revolution, will secure our energy future. It is an exciting prospect to be a part of the positive change that is coming!

**Best experience in the industry so far?**  
I enjoyed my placement with Endeavour Energy in the Future Networks Team. I had exposure to project trials within demand management, fault detection and prevention and EV charging. This gave me insight into the directions the power sector can transition.

**Goals for the future?**  
I wish to develop my technical skills and abilities within signal processing, machine learning and artificial intelligence and apply these skills within the power sector. My long-term goal is to be a humanitarian engineer and provide access to power for remote communities.

DEVELOPING THE WORKFORCE FOR OUR FUTURE



POWER IS THE PULSE OF THE WORLD. AND THERE ARE LOTS OF EXCITING AND FULFILLING JOBS AVAILABLE IN THE AUSTRALIAN ELECTRICITY SECTOR THAT GIVE YOU A CHANCE TO USE YOUR INTERESTS AND CREATIVITY TO HELP OUR COMMUNITIES USE MORE SUSTAINABLE ENERGY SOURCES.



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## Powerful Women Leadership Program

The Powerful Women Leadership Program was established in 2022 with \$1M funding from the Department of Prime Minister & Cabinet over the period 2022-2024.

Featuring opportunities for undergraduate, graduate and professional women, the PWLP program will inspire and support a critical mass of 200+ women to build engineering careers and leadership roles in the Australian power sector.

The PWLP supports participants to build job-focused skills and knowledge, career plans and leadership capabilities through structured programs and mentoring over an 11 month period with a mix of online and live activities and on-demand study opportunities.

The program connects participants to the highly regarded 'API Summer School' residential program and the API's new Executive Insights online modules (featuring 12x CEO and senior execs in the power sector sharing their insights on key challenges and opportunities).

Whilst the Summer School is the power sector's premier leadership and professional development program, with ~40 graduates per year, participation by women is typically around 10% women. Thanks to the PWLP in 2022, the Summer School had 50 participants and 50/50 male/female mix in participants and speakers!

The PWLP is also creating 50+ profiles of inspiring women in power (video, web page, social media) and linking these to our school outreach initiatives.

View the playlist of 2022 profiles here: [PWLP videos](#).

Whilst funded for 3 years through government grants, our goal is to establish a sustainable program that will transform the participation of women in the power sector. Further information about the program can be found on our [website](#).

**Opportunities for API members to get involved** include:

- supporting professional and graduate female staff to participate in the program (scholarships are available each year),
- for your staff to be mentors to the 30 undergraduates, 20+ graduates and 15+ professional women who participate in the program each year (part of the structured mentoring program of the PWLP)
- to contribute to the steering committee that shapes the overall program,
- to contribute speakers and content contributors (or ideas for people) for the program

Additional opportunities for the API's Governor and Principal members to connect with the participants in the PWLP are being developed (particularly for the 30 undergrads each year).



## UQ Women in Engineering program

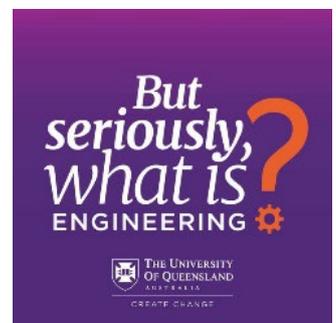
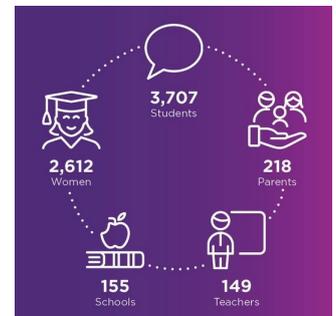
The API has a strategic partnership with the UQ Women in Engineering program, in collaboration with Energy Queensland and Powerlink, which supports activities on a local and national level to raise the participation of girls in engineering programs at universities and to increase the contributions of female leaders to the engineering sector.

The UQ WE are active in engaging students and schools through personal visits in all parts of Queensland, and have national impact through their podcast “but seriously, what is engineering?” and other online activities (that were enhanced since COVID impacted live activities).

The team also manage an annual WE Student Leadership program.

The API’s support for the UQ WE team is focused on their national activities, and the API was proud to initiate in 2016 an annual conference (led by the UQ team) for the Women in Engineering teams of all Australian universities (and some from New Zealand). *See below.*

The API’s partnership with UQWE – as a founding member since 2012 - provides opportunities for API members to get involved, such as speaking in the UQWE’s podcast [series "but seriously, what is engineering"](#) (but Energy Queensland and Powerlink gain exclusive benefits due to their making additional financial contributions to the program in collaboration with the API’s contribution from our core funds).



## National Women in Engineering University Collaboration Workshop Knowledge Hub

<https://www.api.edu.au/wecollab>



The API has now increased our support for the UQ WE-led national University Collaboration Workshop on Women in Engineering by establishing and hosting a knowledge hub (web site) to share resources from the Workshops and to build a national community of individual contacts and teams at universities.

Our goal with this new site (in 2022) is for university teams to share knowledge & experiences during and outside the workshops so that greater participation of women in engineering may be realised on a national scale.

Following COVID disruptions, the most recent workshops were held in 2022 in two parts:

- Part 1 on 1st June with in-person workshops in each state across Australia, with over 70 people in attendance from 30 Universities across Australia and New Zealand.
- Part 2 on 16th June with a national online forum involving 13 live speakers.

### Workforce Diversity in the Clean Energy Survey

The Clean Energy Council, Australian Power Institute and Electrical Trades Union of Australia have partnered to launch the first industry-wide Survey of Workforce Diversity in the Clean Energy Sector to better understand the makeup of the Australian renewable energy workforce.

Results are available in the report [“Empowering Everyone: diversity in the clean energy sector”](#), October 2021.



FOLLOW THE LINK TO COMPLETE THE SURVEY

### Connecting female student leaders with industry

The API is supporting female student leaders connected to relevant clubs and societies at Australian universities to connect with industry professionals in the power sector through scholarships to attend key conferences including the Energy Networks Australia, EESA and AUPEC conferences. Our goal is to raise their awareness of the opportunities in the power sector (and hopefully inspire them to pursue careers in power) and to provide an opportunity for them to share their insights with the sector and to develop their leadership skills further.



#### API STUDENT LEADERSHIP GRANT

The Australian Power Institute are awarding up to 10 conference registrations to female student leaders who are interested and passionate about a career in the POWER industry.

The grant is up to \$500 towards accommodation and registration to attend the EN2021 Conference in Brisbane (9-11 November 2021).

DEVELOPING THE WORKFORCE FOR OUR FUTURE



### First Nations Peoples diversity (on-going)

**About:** The API has partnered with Career Trackers Indigenous Internships to support students in the Indigenous Internship program that are linked to API member organisations; Career Trackers provides direct support to the student and employer and the API links the student into the national community of undergrad students and industry professionals who are passionate about careers in the power sector.

In practice the Interns effectively become an API Bursary student but with a direct link to a single supporting organization. We also help our members to connect with Career Trackers and to share experiences and processes for engaging and support First Nations peoples in the power sector workforce.



### 3. Develop our workforce and future leaders

*The API coordinates and delivers a targeted set of professional development activities to support the development of the power sector's workforce.*

#### API Summer School (next School in 2023)

**About:** The API's famous annual 2-week residential professional development program is delivered by industry, for industry, in May/June each year.

The 2023 Summer School will have 50-60 delegates (~50% female), including 15 scholarship recipients from the API's new Powerful Women leadership program (see 2. *Power in Diversity*). Further information can be found on our [website](#).

API member organisations are able to contribute to the shaping of the program, including key themes and site tours, and can nominate speakers for presentations and workshops.

#### Executive Insights sessions

The Summer School now includes our new online Executive Insights sessions featuring CEO and senior executives from the API's Governor member organizations. These 30min sessions provide high level insights to the challenges and opportunities facing the sector and the methods and mindset to use when developing solutions and provide a strategic context to the Summer School.

Participants in the School work in groups to develop a written Board Briefing in response to a Challenges posed by our Executive Insights speakers, and share their brief in a live and webcast presentation at the Summer School.

These presentations and the written Briefs are shared with our our 50+ Powerful Women Program Early Career stream participants, 100+ API Bursary students, graduates at API member organisations, and the academic community.



**VIOLETTE MOUCHAILEH**

Chief Market Officer



*“The energy transition is happening faster than anyone expected, and there are no signs it is slowing down.*

*What are the things we as an industry need to do to prepare the system and market for a 100% instantaneous renewable energy grid?*

*You can tackle this question from an technical engineering, market and regulatory framework, industry culture and capability, or data and technology perspective. Think big and bold!*



**Responses from the 2022 participants to 10 key Challenges and Opportunities in the power sector**



### **Powerful Women Young Leaders Program (2022-2024)**

About: As part of the larger Powerful Women Leadership program, this program will support 30 undergraduate and 20+ graduates each year to develop the power sector-focused career plans, technical knowledge and leadership skills. Linking to the end of the API Summer School, the program includes a 4-day residential program and additional online activities and mentoring. Further information can be found on our [website](#).



### **Graduate Learning Program – Power with Engineers Australia**

About: Currently under development with Engineers Australia/the API is working with Engineering Education Australia to develop a power-sector oriented graduate development program that links the learning development opportunities available through the Executive Insights program and parts of the Summer School with the 18-month EA Graduate Development Program. Release is expected in 2023 pending input from our member organisations.



#### **Power sector fundamentals (API)**

Provides a comprehensive introduction to the Australian electricity sector and industry. Participants will learn about the key elements of the operation of the Australian electricity market and system and understand how the range of businesses that make up the sector work together. Key strategic challenges and opportunities for the sector will be explored through linking of the graduate module to the Executive Insights component of the API's Summer School, with participants being part of 3 generations of analysis of the issues (CEOs and Execs, then mid-career professionals at the Summer School, then the grads).

#### **Personal Empowerment Module (EA)**

- Communication
- Self-management
- Emotional intelligence
- Resilience

#### **Project Management Module (EA)**

- The project management lifecycle
- Problem-solving
- Stakeholder engagement
- Risk management

#### **Professional Skills Module (EA)**

- Leadership
- Innovation
- Teamwork
- Critical thinking

### **Master Classes and Conferences (on-going)**

About: The API periodically delivers short CPD activities to address needs of member organisations.

## 4. Inspire Future Careers in the Power Sector

*Mapping and data on current state of programs to build our pipeline, management of go-to resource for the power sector for students and parents to understand career opportunities and active programs.*

### **Power Engineering Careers web site** (late 2022)

**About:** The API is redeveloping our online portal on power engineering careers to create a new 'go to' resource for the whole sector to inspire and support high school and university students to start careers in the power sector (prioritizing API member organisations).

The new site "Careers in Power" covers general careers and study pathway information (e.g., for primary to high school students), inspiring profiles of people in the power sector, to links to API member organisations and their graduate recruitment processes (for graduating undergrad students).



### **Electrify Your Future transition program** (late 2022)

Our new EYF program actively engages high school and early university students to connect them to information about studies and careers in power.

In signing up to the EYF program, students will gain access information and resources (pushed to them by email in periodic drip-feed) that will help them to convert their interest into concrete action (eg choosing the right subjects in Year 12, the right uni course selections, and then finding scholarships and pathways into the power sector).



EYF will be released late 2022 and link to an expanded **Project Energise** that will support individuals in the power sector to be more effective ambassadors to school students (the API providing a 'next step' for students).

### **Project Energise – help us energise our future power sector workforce** (starting late 2022)

The API is building a program to activate a community of power sector ambassador – you and your staff!.

We'll support you with resources to engage with school students and stakeholders in their communities, and provide follow-up activities that magnify the impact of your efforts (such as the Electrify Your Future program).



Our support for Ambassadors will include training and resources for Ambassadors and teachers, alignment with Child Safe Organisation requirements, and providing resources to link to the API's inspiring "next step destination" for students, teachers and parents to visit next after being inspired by you (our Careers in Power web site, profiles, and our EYF program and social channels).

## Social media engagement with students, parents, teachers, uni students and the public (on-going)

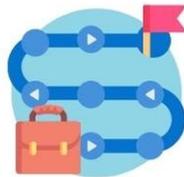
**About:** We have a [strong presence on LinkedIn](#) but don't find this channel effective in engaging the future workforce. In response, and based on best practice recommendations from the Women in Engineering community, the API has expanded its social media presence to better engage with the public with Facebook, Instagram and TikTok social media channels. We leverage the many different opportunities we have through our different programs to generate content that will interest and inspire the public and showcase the fulfilling, exciting, rewarding, challenging and diverse opportunities for careers in the power sector such as profiles of API Bursary students and our Powerful Women Leadership Program participants. We also use the platforms to promote opportunities relevant to the public to participate in events and activities we deliver or are otherwise relevant to our members and careers in the power sector.

**Follow us too?**   **@australianpowerinstitute**  **@auspowerinstitute**

Who are we? The **Australian Power Institute (API)** is a national education-focused not-for-profit organisation that helps young people join the technical/engineering workforce that will deliver the exciting power engineering projects that underpin Australia's energy future.



**Profiles of inspiring people in power,** including university students, women and other professionals currently working in the industry.



**Motivating stories from undergraduate students** about their journeys while studying towards a career in power



**Exclusive invites to careers-related events** such as National Science Week, Student in Power Summit and International Women in Engineering Day.



**Information about scholarships and opportunities** for when you move into an undergraduate course at University.

**Opportunities for members:** We work with the social media teams of our member organisations to share relevant stories and profiles of people and projects that align with our goals of inspiring interest in careers in the power sector.

## Online Careers in Power Events for the public and university students

**Eg Empowering Careers Online Expo in National Science Week (NSWk) (August each year)**

**About:** The API delivers a range of online events targeting high school students and their parents to influence high school and university course and subject selection and increase participation in power engineering-related university study.



POWER IS THE PULSE OF THE WORLD, AND THERE ARE LOTS OF EXCITING AND FULFILLING JOBS AVAILABLE IN THE AUSTRALIAN ELECTRICITY SECTOR THAT GIVE YOU A CHANCE TO USE YOUR INTERESTS AND CREATIVITY TO HELP OUR COMMUNITIES USE MORE SUSTAINABLE ENERGY SOURCES.

Opportunities for members: members have the opportunity to contribute to these events – with the scope of possible events being quite broad, depending on interests of API member organisations.



Daniela Parkinson  
Bachelor of Mathematics  
(Data Science)  
University of South  
Australia



Stuart Percival  
Bachelor of Engineering  
(Mechanical, Electrical and  
Electronic Engineering)  
Curtin University



Sarah Latham  
Bachelor of Engineering  
(Mechanical/Electrical)  
Bachelor of Science  
University of Tasmania



Ashdown Kuttar  
Master in Electrical  
Engineering  
University of New South  
Wales

Options include on-demand video profiles of organisations and people, to live Q&A sessions for parents and students with working professionals from API member organisations at any time of the year or focused on relevant national campaigns such as National Science or National Skills Weeks.

### **API Solar Car Challenge (high school): (on-going)**

About: For ~10 years the API has sponsored distribution of class kits of API STELR solar cars to support teacher-led programs that build design, STEM and energy-related skills in Year 10 students. The program is delivered in collaboration with ATSE, with the API funding 14 school kits per year worth ~\$20K. API Bursary students connect with teachers and students to inspire interest in careers in the power sector.



There is potential for much greater participation by API member organisations in the program including nominating schools to receive kits and your staff visiting schools to inform and inspire students about careers in the power sector.

### **'A Day in the Life' classroom modules (primary school) (on-going)**

About: The API has developed a resource kit that can be used by any primary school teacher (targeting Year 2) to teach STEM and careers related principles. Teachers register to access the free resources and receive a small equipment kit from the API and then independently deliver the program. The API promotes the kit to teachers and provides a selection of online resources to highlight how the concepts relate to fun and exciting careers in the power sector. The program includes scope for professionals and bursary students to connect with teachers and students in the classroom (live or online).



We invite API member organisations to share the kits with schools in their communities, actively through existing links with schools and/or to offer to your staff as a resource they can use to work with schools in their personal networks.

### **Mapping of power sector-focused STEM programs (starting early 2023)**

About: The API will be collecting and sharing information on current STEM outreach programs that strongly align with building the power sector's future workforce, including programs delivered by API member organisations and other stakeholders. The goal is to guide the further development of our own programs, and to identify gaps and opportunities for collaboration between members.

We invite our members to contribute information on STEM outreach programs in your organisation and other programs that you are aware of that have a strong linkage to power-sector related activities.

### **Integrating Indigenous Perspectives into primary school STEM resources (using the API's DIL kit)**

The API and ATSE are working with the Batchelor Institute in the Northern Territory – the only First Nations dual sector tertiary education provider in Australia – to explore ways in which Year 2 students can apply their prior knowledge and local context to the learning of science and mathematics skills using the API's Day in the Life (DIL) teaching kit. Based on lessons learned from using the program in classrooms in 2022, the project will explore ways of integrating Indigenous perspectives into the DIL program to create bridges between Indigenous and Western ways of knowing and learning to enable greater Indigenous academic success in mathematics and science.



## 5. Build Innovation capability in our workforce and universities

*Our future workforce will need enhanced capabilities to undertake and implement innovation, to adapt to changes, and to leverage opportunities. The API's efforts focus on supporting innovation projects for our members and ensuring the knowledge generated feeds into the current workforce and the university sector including knowledge of innovations, how to innovate and integrate innovations, and the future workforce skills that will be needed to support innovations.*

### Industry/University Innovation projects with ENA (on-going)

The API has partnered with Energy Networks Australia to connect university research teams with industry-based innovation and research projects. Projects run for 2 years, with \$100K core funding per year from ENA. Project priorities are determined by the ENA's Asset Management Committee.

API member organisations can participate directly in projects, either through membership of the ENA or through making cash and in-kind commitments to the projects. API member organisations can also gain free access to the knowledge and resources developed through the innovation projects. 4 Projects were completed in 2020, 1 project (EV charging) commenced in September 2020, and 2 new projects are expected to commence in 2022 (Probabilistic weather forecasting and NDT testing of wooden poles).

Further details of the program are [available on the ENA's web site](#).



Recorded webinar  
now available



### Australasian Transformer Information Centre

The API is a founding member of the [Australasian Transformer Innovation Centre \(TIC\)](#), supporting research and professional development activities focused on asset management of power transformers in the modern electrical network. Find further details about the TIC on the web site.

### \$5M ARC Industry Transformation Training Centre in Energy Technologies for Future Grids

The API is one of the founding partners that enabled 6x universities to host nodes of the Centre (Universities of Wollongong, Deakin, Curtin, Queensland (UQ), UNSW, Tasmania); The vision of the Centre is to provide industries with a cohort of engineers who are trained in the multi-disciplinary skills required to facilitate the transition to a zero-carbon electricity system with a reliable and affordable energy future.

### RACE for 2030 CRC (on-going)

The API is a partner in the [RACE for 2030 CRC](#) (Accelerating the transition to Reliable, Affordable, Clean Energy for 2030), and will extend opportunities for API member organisations to contribute to and participate in projects undertaken through the CRC. The API is involved in projects across several of the work streams, including future networks and strategic workforce development.



## 6. Strengthen University Teaching

*Supporting and influencing the capability of the university sector to develop an appropriately skills workforce for the needs of the power sector was a core element in the establishment of the API and continues to be a priority area of activity.*

### API Industry Lecturer Register (inaugural release early 2022)

**About:** There is collective interest between university and industry to include more industry-aligned teaching into undergraduate programs. The API is establishing a register of industry professionals who are available for paid and unpaid guest speaker and teaching in power sector programs in Australia. This resource will be provided to the power engineering academic community via the API's connection with the AUPEC committee.

We invite our member organisations to nominate staff (current, retired) to be listed on the [API register](#) for access by Australian universities.

Systems Engineering (SE)	System Planning, Design & Analysis (SP)	Intelligent Networks & Protection (IN)	Energy Markets & Sustainability (EM)
<ul style="list-style-type: none"> <li>UGSE1 Generation system fundamentals</li> <li>UGSE2 Electricity supply chain major plant &amp; equipment</li> <li>UGSE3 Alternating current machines for power systems</li> <li>UGSE4 Transmission system fundamentals</li> </ul>	<ul style="list-style-type: none"> <li>UGSP1 Real &amp; reactive power &amp; load flow analysis</li> <li>UGSP2 Dynamic transient stability</li> <li>UGSP3 Transient analysis &amp; energy protection</li> <li>UGSP4 Insulation coordination &amp; SF<sub>6</sub> design principles</li> <li>UGSP5 Earthing system design</li> <li>UGSP6 System planning</li> <li>UGSP7 Fault calculations in power systems</li> </ul>	<ul style="list-style-type: none"> <li>UGIN1 Protection of generation &amp; electrical plant</li> <li>UGIN2 Protection of transmission &amp; distribution networks</li> <li>UGIN3 Telecommunications, communication protocols</li> <li>UGIN4 Power quality &amp; harmonics</li> <li>UGIN5 Reliability</li> <li>UGIN6 Instrument transformers</li> <li>UGIN7 IEC61850, SCADA, SVI automation technology &amp; networking</li> </ul>	<ul style="list-style-type: none"> <li>UGEM1 Environmental issues &amp; sustainability</li> <li>UGEM2 Regulation principles</li> <li>UGEM3 Supply chain fundamentals, demand side management &amp; forecasting</li> </ul>

### API Undergraduate Curriculum Modules (on-going)

With the support of our industry members and university academics, the API has developed a collection of teaching resources that support access for 3rd and 4th year undergraduate students and post-graduate students across Australia to world class power engineering education and learning. We share these resources with the academic community, and they are available to industry lecturers on the API's register. See [here](#).

### AUPEC Power Engineering Conference (annual, September)

**About:** Australia's power engineering academics coordinate an [annual conference](#). This is an opportunity for industry to learn about research and teaching innovations in the university sector and to share their own activities with academics. The API sponsors the conference, including student paper competitions, and contributes content and activities.



ENGINEERS  
AUSTRALIA

### Engineers Australia undergraduate program Accreditation panels (on-going)

**About:** The API is regularly invited by Engineers Australia to nominate power sector industry representatives to participate in the accreditation panels of university programs across Australia. These accreditation panels are an opportunity to give feedback to university teaching and management teams on the needs and expectations of your sector for the undergraduate teaching programs that form the foundation of our professional workforce.

We invite our member organisations to nominate staff to participate in EA panels when invited, strengthening API member voices in the teaching programs. Click [here](#) to register.

## 7. Strategic Workforce Planning

### Member Forums on strategic workforce planning (on-going)

**About:** The API periodically organizes forums for our members and other stakeholders to explore issues associated with strategic workforce planning for the power sector. In recent years this has included forums on the different public projects underway on power sector workforce planning (including the RACE CRC project) and projects within API member organisations (summarized in a report for our members).

A Future Workforce Forum is organized each year in May, linked to the Summer School and Powerful Women Leadership Program, with ~120 people participating in 2022.



### Australian Energy and Employment Report Working Group (to commence late 2021)

In late 2021 the API is planning to undertake a survey on API members on graduate employment and priority and emerging skills needs in API member organisations. This will assist in influencing university programs, defining the selection parameters for the API bursary program and the scope of activities undertaken to further develop bursary students.

Our efforts in 2021 to develop the RACE for 2030 CRC's 10 year research plan for workforce development have led to the Australian government starting the [Australian Energy and Employment Report](#) (the first national energy workforce survey); the API is currently on the AEER working group and we are continued to work with RACE on projects.

### API member needs and university capability assessment survey (to commence late 2022)

In late 2022 the API will undertake a survey to map priority training needs and CPD gaps/needs across API members to identify issues, opportunities, and common areas of interest. This information will be used to influence associated workforce projects on behalf of the API community (see RACE for 2030 CRC below) and to inform to training providers or to develop API masterclasses.

University Capability Assessment: we'll be undertaking our regular audit of university teaching and research capabilities in the powre sector later this year, starting with engagement of the academic community at the upcoming [AUPEC conference in Adelaide \(26-28 September\)](#)

### RACE for 2030 CRC workforce projects (on-going)

Contribute to RACE for 2030 CRC projects on workforce planning.

<https://www.racefor2030.com.au/race-for-everyone/project/>



Our efforts in 2021 to develop the RACE for 2030 CRC's 10 year research plan for workforce development have led to the Australian government starting the [Australian Energy and Employment Report](#) (the first national energy workforce survey); the API is currently on the AEER working group and we are continued to work with RACE on projects. The API is a contributor to the Industry Reference Group for the Workforce Projections Project for AEMO's ISP, led by UTS's Institute for Sustainable Future.