

DEVELOPING THE POWER SECTOR WORKFORCE FOR OUR FUTURE



- 20 years of insights on power sector workforce
- What we should be worried about today
- What the API and others are doing
- The role you can each have

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CEO, The Australian Power Institute



Have you been involved in an API program?

Put your hand up please



DEVELOPING THE **POWER SECTOR** **WORKFORCE** FOR OUR FUTURE

- 1 Inspire future careers in the power sector
- 2 Develop undergraduates as our future workforce
- 3 Strengthen university teaching for power
- 4 Enhance + link innovation capability in our workforce and universities
- 5 Empower Diversity & Inclusion in the power sector workforce
- 6 Lead and deliver: strategic technical and leadership capabilities in power

DEVELOPING THE **POWER SECTOR** **WORKFORCE** FOR OUR FUTURE

WE COVER THE FULL CAREERS IN POWER LIFECYCLE



School
students



School to
Study



University



Graduates



Professional
workforce



Industry
Leadership



BACKED BY INDUSTRY



Governor Members



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20 YEARS OF DEVELOPING THE POWER SECTOR

Why should we ALL worry about workforce?

- 1. **Transition** to net zero, climate change, extreme weather
- 2. Your **health** and hairline
- 3. Project **budget** and timeline
- 4. Organisation **budgets**
- 5. Individual's **lives**
- 6. **Elegance** of engineering solutions (fit for purpose)
- 7. **Reputation** and standing of the electricity sector and
the power engineering team



What are the key power workforce challenges?

- 1. **Number** of power engineering technical professionals
- 2. **What** we teach / train
- 3. **How** we train enough, fast enough
- 4. **Delivery**: getting the work done ... while training
- 5. **Lumpy** demand for specific skills





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#1006 034



Rank the following for Most Worried to Least worried about:

1. Long term numbers of power engineering technical professionals
2. What we teach / train power engineering professionals
3. How we train enough power professionals, fast enough for pending work
4. Delivery: getting the work done ... while training
5. Lumpy demand for specific skills to support power engineering projects

1. Number of power engineering technical professionals

> Issues

- # of engineers
- Bigger workload, once in a generation, “electrify everything”
- Global problem (departures)
- # of new graduates
- Retiring workforce
- Overseas qualified pipeline
- New skills (and some ‘old’)
- Transitioning from coal etc
- Weak forward planning on needs for people (not like transformer orders 7 years ahead)
- Broken record “never enough engineers”
- “clean energy” has the challenge, not traditional network space
- Focus on tradies, VET
- Long timeline to qualify engineers, but needed early and always

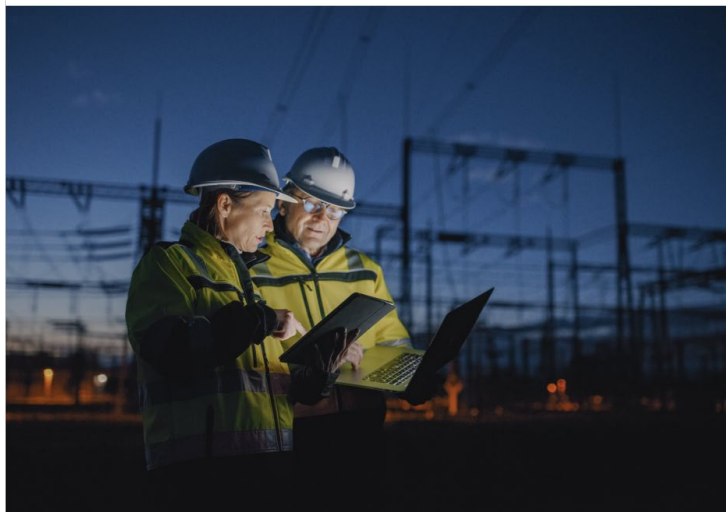


> 1. Number of power engineering technical professionals



The Australian Electricity Workforce for the 2024 Integrated System Plan: Projections to 2050.

Final Report



Electricity sector jobs increase steeply in all scenarios in the run up to 2030

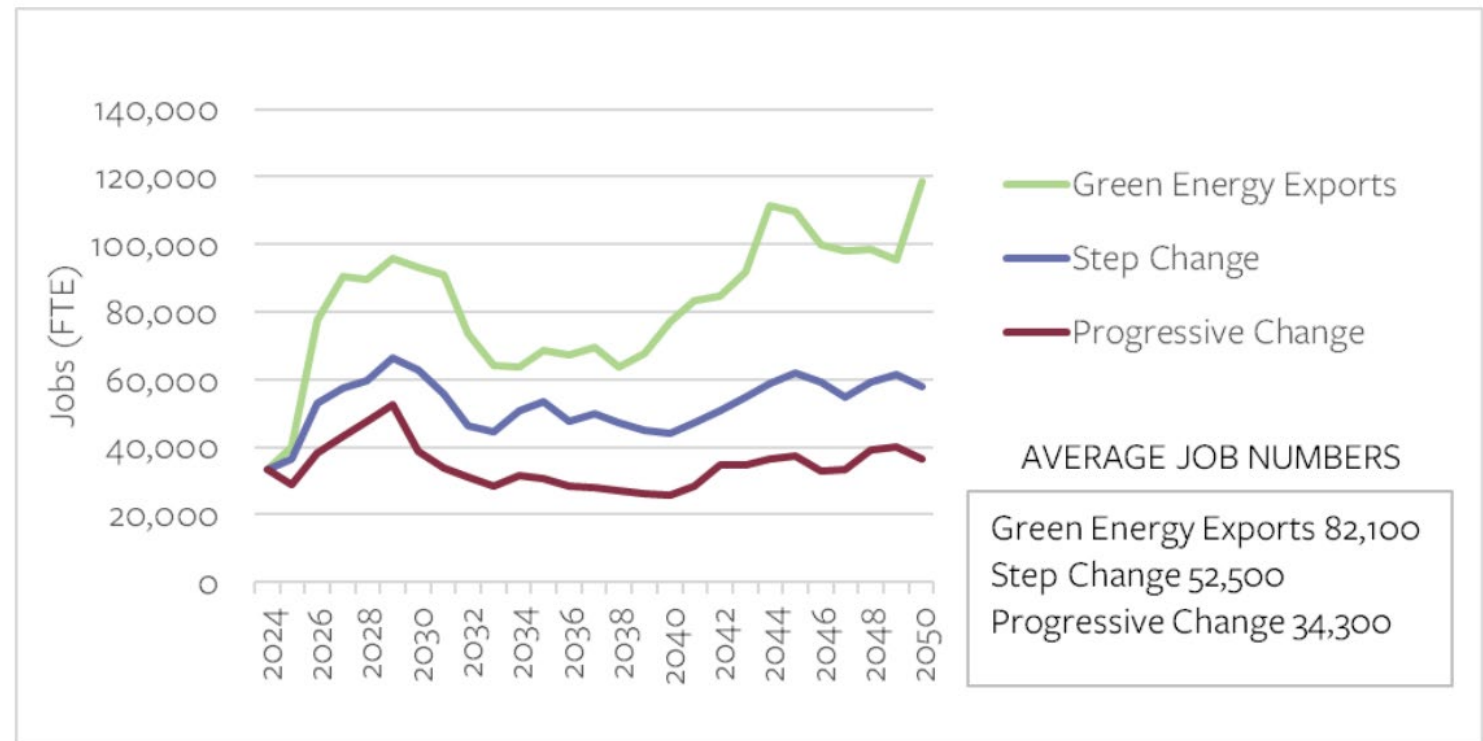


Figure E1 NEM: total job numbers by scenario

> 1. Number of power engineering technical professionals

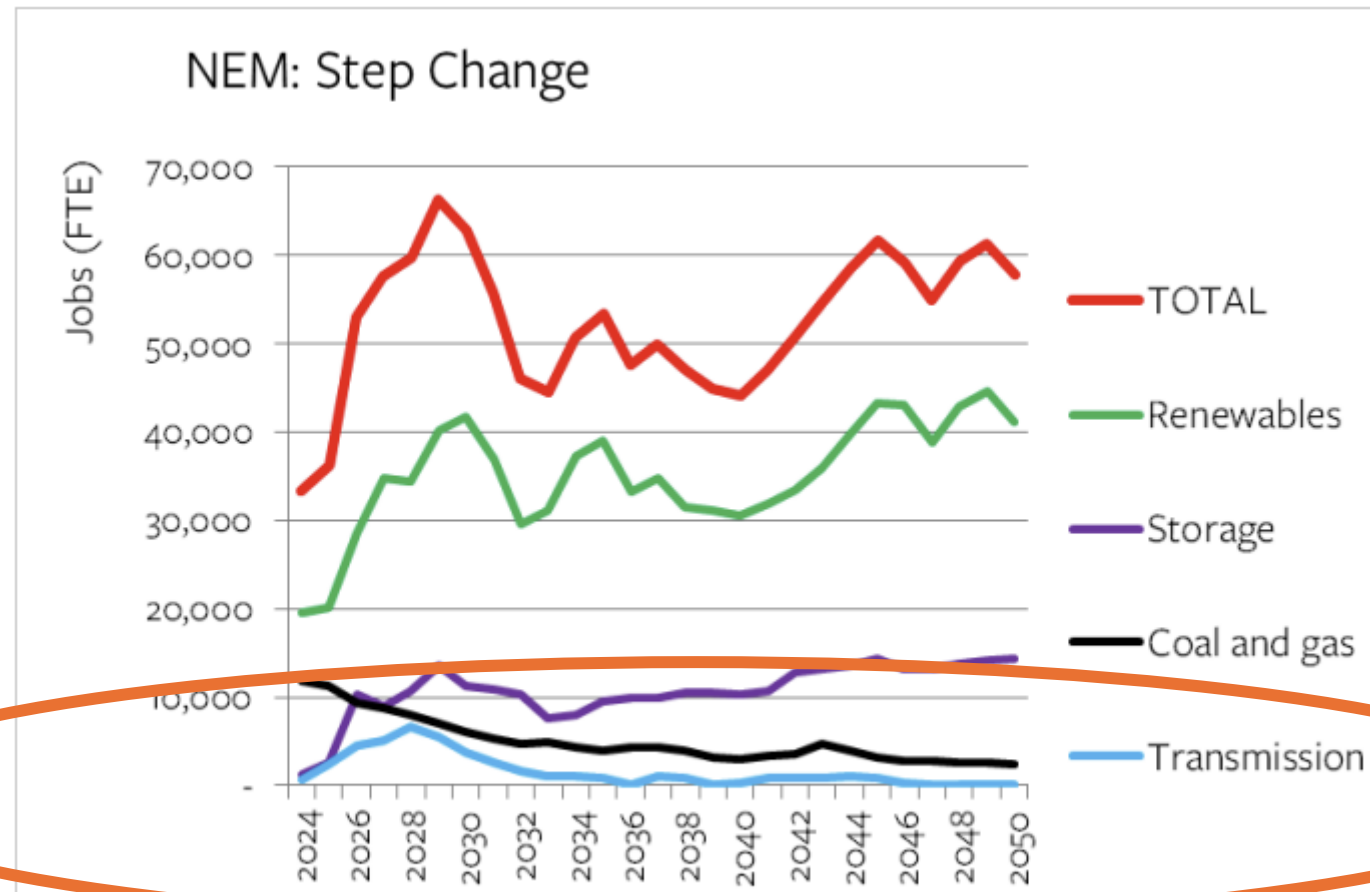
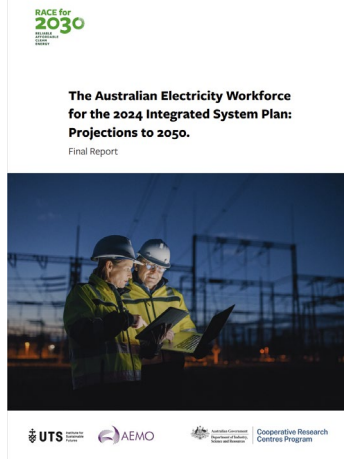


Figure E2 National Electricity Market, jobs by technology group, Step Change



> 1. Number of power engineering technical professionals

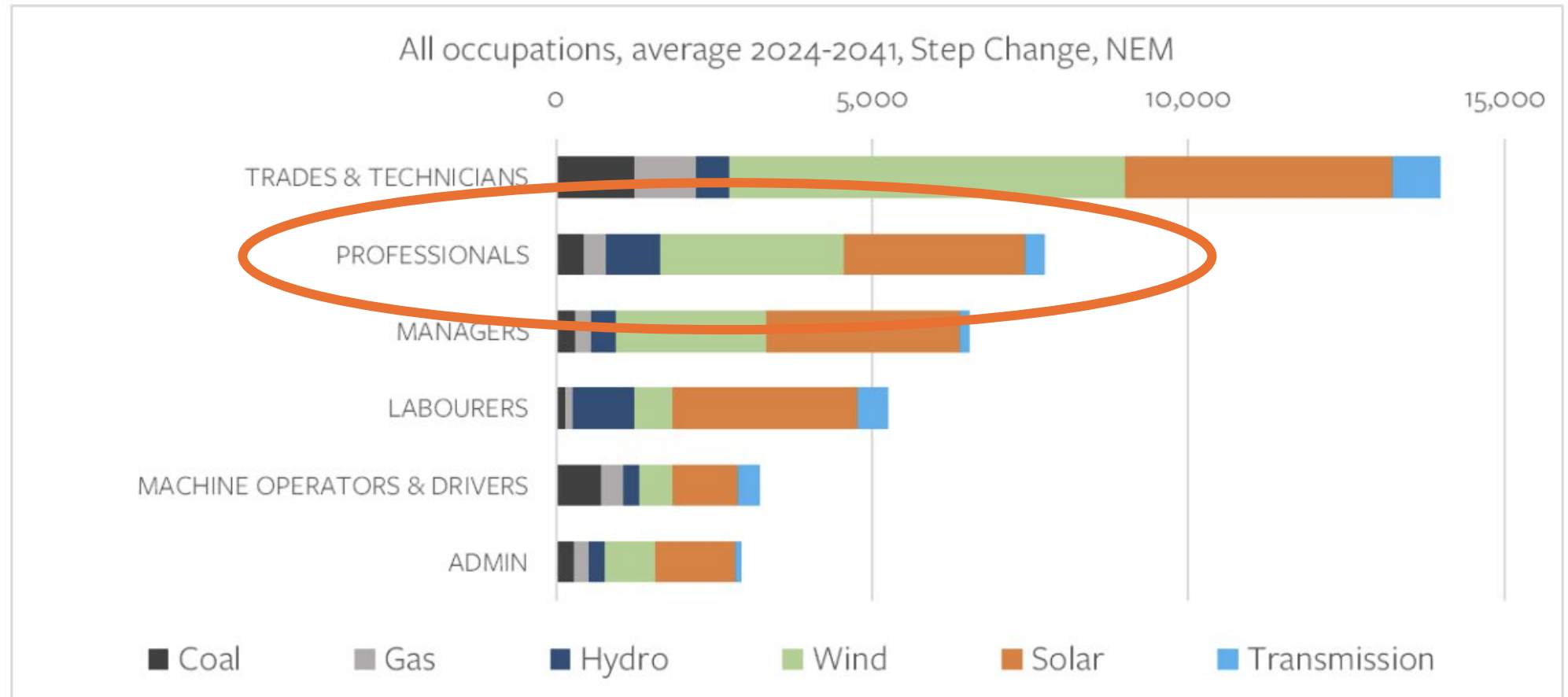
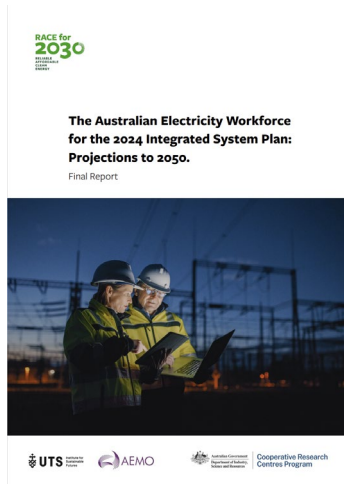


Figure E5 NEM, average occupational structure 2024 – 2041



> 1. Number of power engineering technical professionals



Figure E6 National Electricity Market, in-demand occupations annual employment, Step Change

Note: scale of 0-8,000 for total jobs for the top two occupations, and 0-5,000 for the remainder.

1. Number of power engineering technical professionals

➤ Solutions = attract more students into pipeline

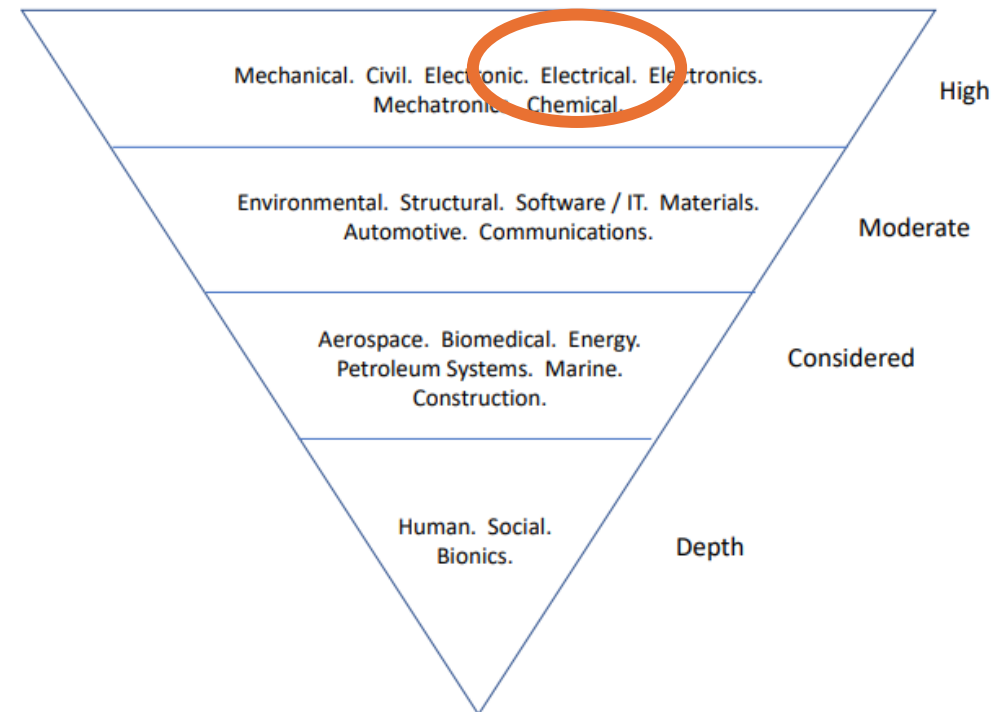
- Awareness/visibility
- Relevance (impact on their community)
- “Want to save the world, become a power engineer”
- Career pathways and clarity – hidden, outdated, passive
- Diversity & Inclusion



1. Number of power engineering technical professionals

> Solutions = attract more students into pipeline

Figure 6.1: the most cited fields of Engineering by Year 11 and 12 students and first year engineering undergraduates



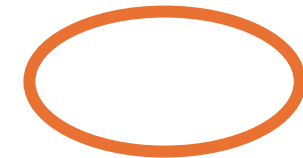
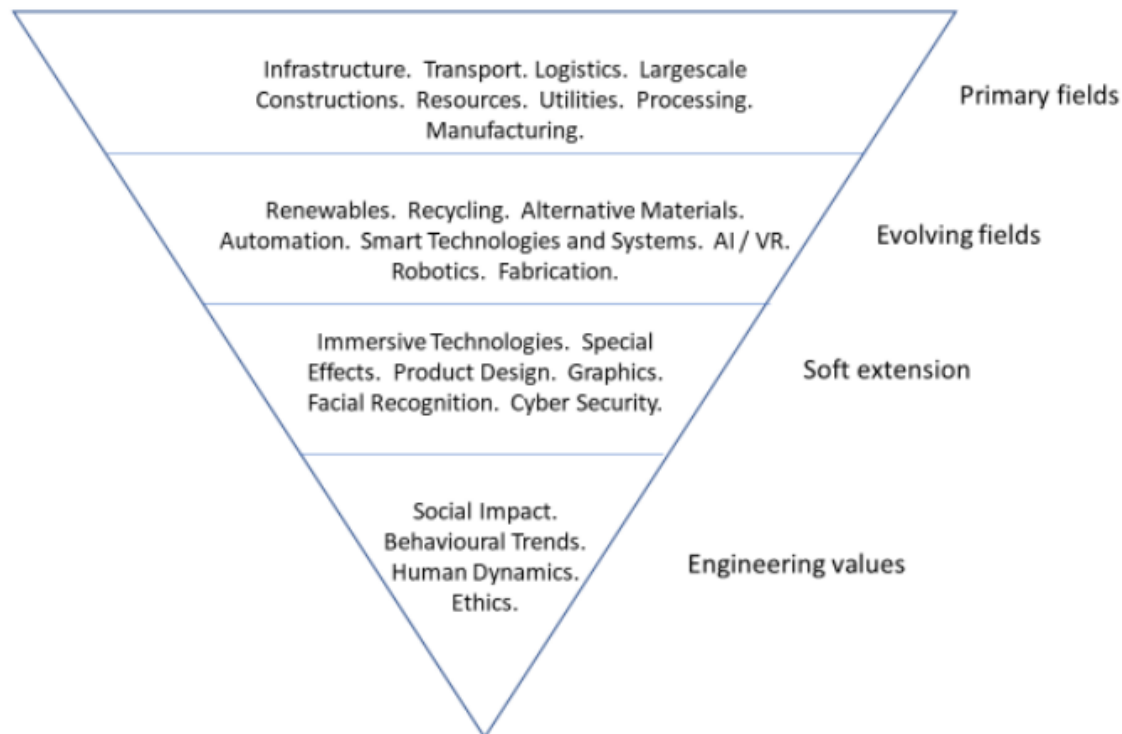
Engineering 2035 Report,
Australian Council of
Engineering Deans



1. Number of power engineering technical professionals

> Solutions = attract more students into pipeline

Figure 6.2: The fields of engineering employment which Year 11 and 12 students and first and second year undergraduates most identified with



“Several Engineering specialisations lacked overall awareness. This particularly applied to Energy (including petroleum)”



1. Number of power engineering technical professionals

➤ Solutions = attract more students into pipeline

Your role?

- ✓ Talk / share, focus on IMPACT
- ✓ School kids, undergrads, grads
- ✓ Want to save the world = be a power engineer!
- ✓ Articulate our role: “no transition without transmission, no solution without distribution”
- ✓ Diversity of your team



The Australian Power Institute

5,736 followers

3mo • Edited •

Two exceptional API Power Ambassadors, [Palistha \(Luvha\) Shrestha](#) and [Danielle Peralta](#), who are also API Scholarship students, visited Treeby Primary School to inspire over twenty Year 2 students with their paths towards a career in the power industry.

They brought along [SolarBuddy](#) lights for the students to put together, educating them about energy poverty and the efforts of power engineers in addressing energy challenges in society.

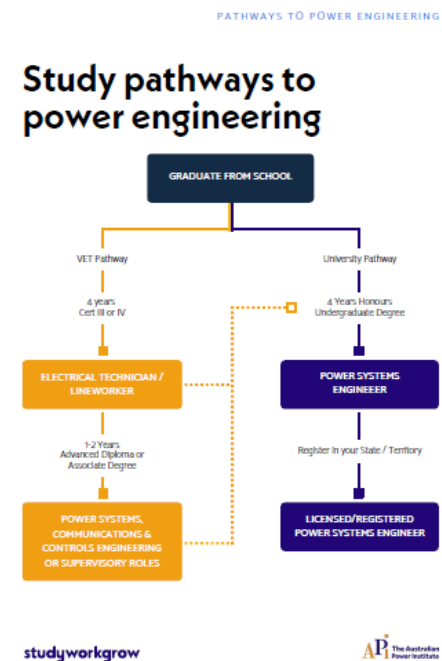
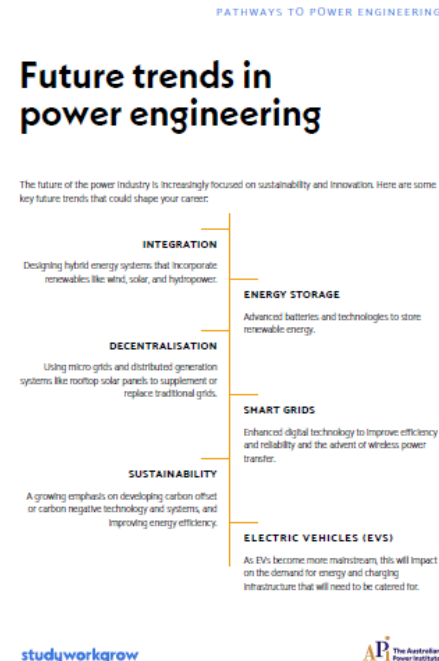
This initiative is part of our new collaboration with Solar Buddy and we look forward to sharing more school visits soon.

[#APICommunity](#) [#APICareersinPower](#) [#SolarBuddy](#)



1. Number of power engineering technical professionals

➤ Solutions = attract more students into pipeline



POWER ➡➡
AMBASSADOR

ELECTRIFY
YOUR FUTURE

CAREERS
IN POWER



1. Number of power engineering technical professionals

➤ Solutions = retain more undergrads and grads

- Awareness/visibility
- Relevance (impact on their community)
- “Want to save the world, become a power engineer”
- Career pathways and clarity
- Diversity & Inclusion

**20% of
engineering
undergrads
complete a 4
year degree
in 4 years**



1. Number of power engineering technical professionals

➤ Solutions = retain more undergrads and grads

Your role?

- ✓ EESA mentor program
- ✓ Talk at work
- ✓ Take placements
- ✓ Talk to students on placements
- ✓ “student engineer” roles for employment
- ✓ Talk about grad jobs

Electric Energy Conference 2024: Sheraton Grand Sydney Hyde Park

EECON 2024

**EESA EECON
CONVERSATION
LOUNGE 2024**



**For experienced power
sector professionals:**

- ✓ Share your perspective on essential technical skills and your experiences with industry projects
- ✓ Connect with the future workforce
- ✓ Inspire careers in the power sector by sharing your career journey

**For students and young
professionals:**

- ✓ Connect with API, EESA and CIGRE and gain insights and practical advice for growing as a power professional
- ✓ Explore strategies and actions to advance your career
- ✓ Build your network on a national scale

eecon2024.com.au/conversation-lounge/



1. Number of power engineering technical professionals

➤ Solutions = step change in diversity & inclusion

Your role?

✓ Share **why** diversity & inclusion is essential for our success



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2. What we train / teach

> Issues

- Rapidly evolving technical landscape
- Greater multidiscipline
- Greater community orientation and engagement
- More uncertainty and complexity
- Engineering Deans report: “Engineering pedagogy must focus upon replicating the types of environments, projects and settings within which future graduates will work”

**New entrants,
Transfers,
Upskilling,
Updating skills**



2. What we train / teach

➤ Your role?

- Share through EESA, API Summer School, CIGRE etc
- Lunch and Learns
- Capture innovation knowledge for sharing broadly
- Real world project data for case studies
- Guest lecturing at universities
- API Innovation Project knowledge sharing
- Work placements for undergrads, transfers

**New entrants,
Transfers,
Upskilling,
Updating skills**



2. What we train / teach



APi

The Australian Power Institute

Learning Journal

Supporting employers and undergraduate students with industry experience placements in power

Governor Members



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Industry Members



1. for Undergrads 2. for Grads + early career 3. for Professionals All Courses Career Development Toolkit Powerful Women
- Summer School portfolio

PRE-ORDER AVAILABLE NOW! 2025

POWERFUL WOMEN LEADERSHIP PROGRAM
for undergrads, grads and experienced women in Australia's power sector

February - November 2025, online

In-person activities in May 2025 as part of the SUMMER SCHOOL Professional + Graduate streams + POWERFUL WOMEN LEADERSHIP PROGRAM undergraduate Retreat

Powerful Women Leadership Program 2025 All Participants

5 Lessons

POWERFUL WOMEN 2025 LEADERSHIP PROGRAM
FOR UNDERGRADUATE WOMEN

includes: EXECUTIVE BOARDROOM CEO conversations 4-DAY RETREAT @ SUMMER SCHOOL API-AEMO NEM Basics short video course

plus 10-month Powerful Women Leadership Program

\$3,990.00

Powerful Women 2025 Undergraduate Leadership Program

4 Courses

SUMMER SCHOOL 2025
CAREER STARTER 0-3 YRS

Building leadership and networking skills for your power sector career. For early career professionals with 0-3 years experience

includes: EXECUTIVE BOARDROOM CEO conversations 4-DAY RETREAT @ SUMMER SCHOOL API-AEMO NEM Basics short video course

plus 10-month Powerful Women Leadership Program

\$4,458.00

Summer School 2025 Career Starter for 0-3 yrs experience

3 Courses

PRE-ORDER AVAILABLE NOW! 2025

SUMMER SCHOOL 2025
DEVELOPING PROFESSIONALS

Building leadership and networking skills for your power sector career. For early career professionals with 4-6 years experience

includes: EXECUTIVE BOARDROOM CEO conversations 4-DAY RETREAT @ SUMMER SCHOOL API-AEMO NEM Basics short video course

plus 10-month Powerful Women Leadership Program

\$4,499.00

Summer School 2025 for Developing Professionals 4-6yrs

3 Courses

PRE-ORDER AVAILABLE NOW! 2025

EXECUTIVE INSIGHTS 2025
online CEO conversations

Connecting 3 generations of professionals and exploring the power sector's strategic challenges and opportunities, and the methods, mindsets and skills needed for taking action

\$1,650.00

Executive Insights 2025

Insights into the challenges and opportunities for the Australian power sector from 10 executives and ~50 mid career emerging leaders, and suggestions for action to resolve and to develop our future workforce.

29 Lessons

SUMMER SCHOOL+ 2025
strategic & technical capability development program for the future leaders of the power sector workforce with 7+ yrs experience

includes: EXECUTIVE BOARDROOM CEO conversations RESIDENTIAL 2-WEEK SCHOOL API-AEMO NEM Basics short video course

plus 10-month Powerful Women Leadership Program

\$17,070.00

Summer School 2025 for experienced professionals

Join the API Summer School, a comprehensive course for energy professionals looking to advance their careers. Learn from industry experts, gain insights into the latest trends, and network with peers in the Australian power sector. Enroll today!

3 Courses

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