

# API Chief Executive Annual Report for 2009



## 2009 Annual Report

- The last 12 months have seen significant progress made in establishing API as the nationally recognised representative of the power industry in Australia on power engineering skills and education.
- The API now has over 30 industry members from all sectors and States/Territories following the successful amalgamation with the Power Engineering Alliance (Qld) which occurred in 2009.
- The promotion of power engineering to young people has expanded from the continuation of the successful Power Engineering Bursary Program (for first year engineering students) to include a new website specifically targeted at 15-18 year olds (visit [www.powerengineering.org.au](http://www.powerengineering.org.au) to see for yourself).
- The engagement between API and over 14 universities across Australia has not only allowed industry to become more closely aligned with the power engineering academics at universities but API (including the PEA Amalgamation) has seen over \$1 million provided to universities for laboratory upgrade projects and over \$2 million provided to sponsor new academics (targeted at early career academics). This is all specifically targeted to improve the teaching and learning experiences of students at universities studying power engineering subjects/electives.
- The Board of API has developed a comprehensive Strategic Plan with corresponding Actions (both immediate and medium/longer term) which it gives me great pleasure to report progress against.

**Mike Griffin**  
Chief Executive



**STRATEGIC PLAN 2010- 2014**  
**“people and skills Powering Australia’s future”**  
**(20 January, 2010)**



**VISION : SUSTAINABILITY AND EXCELLENCE IN AUSTRALIA’S POWER ENGINEERING**

**VALUE PROPOSITION: A TRULY NATIONAL ORGANISATION REPRESENTING ALL INDUSTRY SECTORS WHICH MAXIMISES COLLABORATION FROM INDUSTRY, UNIVERSITIES AND GOVERNMENT TO PROMOTE AND IMPROVE POWER ENGINEERING**

**OBJECTIVES**

POWER ENGINEERING AN  
EXCITING WHOLE OF  
WORKING LIFE CAREER  
CHOICE

WORLD CLASS  
UNDERGRADUATE POWER  
ENGINEERING TEACHING AND  
LEARNING

VALUE ADDED CONTINUING  
PROFESSIONAL DEVELOPMENT  
PROGRAMS AND APPLIED  
RESEARCH

A VIBRANT, NATIONALLY RESPECTED  
ORGANISATION BY  
INDUSTRY, UNIVERSITIES AND  
GOVERNMENT

**OUTCOMES**

- Primary and secondary students aware of exciting careers available from doing science and mathematics and choose power engineering as a career base for long term success
- A successful bursary program to promote and market API and power engineering
- Undergraduates are attracted to, and retained in, power engineering
- Sustainable, quality delivery models of learning between academics. Students and industry
- Access to world class practical and laboratory infrastructure to support learning and the link to industry for students
- Student access to world class education and learning drawing on specialised expertise/skills at a rationalised group of universities i.e. centres of excellence
- Power industry values and supports University partners that have high quality, outcome focused postgraduate applied research
- Full range of up to date professional development training and courses, well attended and regarded by Industry
- The Nationally recognised representative of the power industry in Australia on power engineering skills and education
- Sustainable mechanisms to fund API objectives from all sources (industry, universities, government)
- Members perceive API as value for money, providing “future proofing” for their organisations capability

# Objective : Power Engineering an Exciting Whole of Working Life Career Choice

Outcomes/Goals	Measures	Immediate Actions 2009/10	Medium/Longer Term Actions (2-4 yrs)
<p>Primary and Secondary Students aware of exciting careers in power engineering available from doing science and mathematics</p>	<ul style="list-style-type: none"> <li>• number of power engineering website hits</li> <li>• demand for power engineering initiatives</li> </ul>	<ul style="list-style-type: none"> <li>• Annual Update of Power Engineering promotional material aimed at year 10-12 students on website <a href="http://www.powerengineering.org.au">www.powerengineering.org.au</a></li> <li>• Review Pilot Power Engineering Summer Camp for year 10 and 11 students in WA for continuation and expansion to Qld during 2010 API Summer School</li> <li>• Review initiatives aimed at attracting students across Australia to electrical engineering</li> <li>• Pilot API Bursary Students Speaking Program at High Schools</li> </ul>	<ul style="list-style-type: none"> <li>• Develop National Competition for technology students at high school</li> <li>• Develop Power Engineering related projects/curriculum resources for secondary school teachers</li> </ul>
<p>A successful national bursary program to promote and market API and power engineering</p>	<ul style="list-style-type: none"> <li>• number and quality of students applying for bursaries</li> </ul>	<ul style="list-style-type: none"> <li>• Obtain members commitment to vacation employment and networking events(2 p.a.) by May each year.</li> <li>• Review Bursary Program intake criteria</li> </ul>	<ul style="list-style-type: none"> <li>• Federal Government funding support for an expanded program (eg 20 additional bursaries at \$8k = \$160k)</li> </ul>
<p>Undergraduates are attracted to, and retained in, power engineering</p>	<ul style="list-style-type: none"> <li>• number of students selecting power engineering subjects</li> <li>• dropout from subjects</li> </ul>	<ul style="list-style-type: none"> <li>• Industry organised site visits as part of subject/units in 1<sup>st</sup> and 2<sup>nd</sup> years</li> <li>• Industry relevant 4<sup>th</sup> year Project/Thesis topics sought from members</li> <li>• Cooperation with Academy of Technological Sciences and Engineering to involve young undergraduates</li> </ul>	<ul style="list-style-type: none"> <li>• Increased industry support for 6 month internships as part of undergraduate course</li> <li>• Young Industry Engineers speak/present to 1<sup>st</sup> and 2<sup>nd</sup> year engineering students on their experience/careers</li> </ul>

## Objective : Power Engineering an Exciting Whole of Working Life Career Choice

### Achievements in 2008

- Developed Power Engineering promotional material aimed at year 10-12 students through website [www.powerengineering.org.au](http://www.powerengineering.org.au)
- Piloted Power Engineering Summer Camp for year 10 and 11 students in WA – organised by Curtin University – run in conjunction with API Power Engineering Summer School in Perth
- Program commitment and funding for 4 years agreed by API Board - \$158,000 to \$163,000 in 2008/09, \$358,000 to \$383,000 in 2010/11 – Board Memo 038/08
- Program key activities and dates developed for National Program and agreed by API Board.
- API/CIGRE Prize for Bursary Holders submissions to National Energy Essay Competition
- API Prize for Bursary Holders who make a submission following their vacation employment in 2008/09 summer break on the topic “ Power Engineering Challenges in the Energy Industry”

### Achievements in 2009

- Power engineering website updated with profiles of industry power engineers roles and duties and one new video interview with API bursary holder and recent graduate. Average 395 visits to website per month.
- Power engineering summer camp for year 10 and 11 students continued in WA (organised by Curtin University) and expanded to QLD (organised by University of Qld)
- API networking events held to Wilson’s transformers(Vic), AREVA(Qld),ETSA Utilities Control Centre(SA),Transend Control Centre(Tas),Western Power Control Centre(WA)
- API bursary holders given free admission to Energy 21C Conference exhibition, Sept 09.
- API/ATSE Prizes(5) for best essays on topic “What will the energy sector be like in 2050 in context of ATSE Symposium theme

## Objective: World Class Power Engineering Undergraduate Teaching and Learning

Outcomes/Goals	Measures	Immediate Actions 2009/10	Medium/Longer Term Actions (2-4 Yrs)
Sustainable, Quality Delivery Models of Learning between academics, students and industry	<ul style="list-style-type: none"> <li>• Number and quality of applicants for graduate positions in industry (survey of industry)</li> </ul>	<ul style="list-style-type: none"> <li>• API funding and support for early career academics though annual Request for funding</li> <li>• Survey of API Bursary holders to determine topics of interest and models of delivery which motivate them and feedback to universities</li> <li>• Develop a framework for early career academic sabbaticals in industry over summer 3 month break.</li> <li>• Develop national networking opportunities for API sponsored early career academics (E21C Conference)</li> </ul>	<ul style="list-style-type: none"> <li>• Support for distance delivery of subjects/courses</li> </ul>
Access to World Class Practical and Laboratory Infrastructure to support learning and the link to industry	<ul style="list-style-type: none"> <li>• Student assessment of relevance and link to industry of learning experiences by survey</li> </ul>	<ul style="list-style-type: none"> <li>• API funding of laboratories and infrastructure proposals to a national agenda where it supports power engineering teaching</li> <li>• Facilitate provision of high investment lab infrastructure from host universities to other universities</li> </ul>	<ul style="list-style-type: none"> <li>• Facilitate site visit process to industry for undergraduate learning</li> <li>• Facilitate provision of industry equipment to universities</li> <li>• Investigate potential alliances with overseas laboratories for use by API partner universities</li> </ul>
Student Access to World Class Education and Learning drawing on specialised expertise/skills at a rationalised group of universities i.e. centres of excellence	<ul style="list-style-type: none"> <li>• Collaboration between universities to implement power engineering modules</li> <li>• Support by industry</li> </ul>	<ul style="list-style-type: none"> <li>• Finalise and Market API Curriculum Map Modules (9 undergraduate, 4 postgraduate)</li> <li>• Develop 12 further undergraduate modules as part of Diversity Fund</li> </ul>	<ul style="list-style-type: none"> <li>• Further Federal Government support for distance education</li> <li>• Postgraduate Module development towards an API facilitated National Power Engineering Masters</li> </ul>

# Objective: World Class Power Engineering Undergraduate Teaching and Learning

## Achievements in 2008

- API part funding of early career academics at UQ, UTS, UTAS
- API part funding of power engineering laboratory and equipment upgrades at UWA, Curtin University, Adelaide University, UTAS, Victoria University, UNSW, RMIT, Wollongong University (totalling \$342,000)
- API Curriculum Map Modules (9 undergraduate, 4 postgraduate) 80% developed as part of CASR Project
- Collaboration Agreement between universities in place to facilitate power engineering curriculum module development for 3<sup>rd</sup> and 4<sup>th</sup> year undergraduate subjects/units and postgraduate subjects/units

## Achievements in 2009

- API part funding of early career academics at UQ,UTS,UTAS,USYD,UNSW,Curtin
- Survey of API Bursary holders to determine topics of interest and models of delivery which motivate them undertaken and report prepared for API and universities
- A framework for early career academic sabbaticals in industry over summer 3 month break developed and 4 sabbaticals arranged – CQU/Ergon Energy, QUT/Energex,UNSW/Energy Australia,UTS/Transgrid.
- API part funding of power engineering laboratory and equipment upgrades at UWA,Curtin,Murdoch,UTAS,Victoria,UNSW,Newcastle,UQ,QUT,USQ,JCU(Totalling \$980,000)
- API CASR Project completed with 9 undergraduate modules made available free of charge to all universities with a commitment to power engineering
- Coordination and updating of QUT PESTC postgraduate courses commenced to align with API Curriculum map.

## Objective: Value Adding Continuing Professional Development Programs and Applied Research

Outcomes/Goals	Measures	Immediate Actions 2009/10	Medium/Longer Term Actions (2-4 Yrs)
<p>Power Industry values and supports University partners with high quality, outcome focused postgraduate applied research</p>	<ul style="list-style-type: none"> <li>• industry assessment of relevance to industry priorities and assimilation into teaching curriculums (by survey)</li> </ul>	<ul style="list-style-type: none"> <li>• Run workshops in Qld and NSW with Industry and University representatives to identify industry research priorities and establish industry/university research relationships</li> </ul>	<ul style="list-style-type: none"> <li>• Develop a framework for Industry based PhD and Masters research students.</li> </ul>
<p>Full range of up to date professional development training and courses, well attended and regarded by industry</p>	<ul style="list-style-type: none"> <li>• delegate feedback re value and quality</li> </ul>	<ul style="list-style-type: none"> <li>• 8-10 Masterclasses(embedded in Industry where possible)</li> <li>• Organise API Powerchem 2008 (May 2010) Conference</li> <li>• Organise API Power Engineering Summer School (Residential Accelerated Development Program, Feb 2010)</li> <li>• Continued Coordination of CPD Program with CIGRE Australian National Committee</li> </ul>	<ul style="list-style-type: none"> <li>• Continuing Professional Development Program with 3-5 Masterclasses/Short Courses per State per annum</li> <li>• Support for Postgraduate CPD Modules based on Power Engineering Curriculum Model and Nationally available existing postgraduate modules.</li> </ul>

## Objective: Value Added Continuing Professional Development Programs and Applied Research

### Achievements in 2008

- Masterclasses on Reactive Power Management and Voltage Stability (2), Power System State Estimation (2), Energy Sustainability (2), and Modern Partial Discharge Detection and Analysis for Insulation Assessment held.
- API PowerChem 2008 – Power Station Chemistry Conference and Exhibition and Training courses held.
- API Power Engineering Summer School (Residential) held in Hobart (Feb 2008) and Perth (Feb 2009)
- Coordinated CPD Program with CIGRE ANC commenced.

### Achievements in 2009

- Masterclasses on Wind Power in Power Systems (Perth 29/30 June, Future Trends for Power Systems (Sydney, Oct), Insulation Coordination of T&D Networks (Brisbane 22/23 June), Turbine Functional Safety Competency (Morell, Brisbane, Perth June/July) held/supported.
- API PowerChem 2010 – Power Station Chemistry Conference and Exhibition and Training courses commenced organisation (to be held on 23 to 28 May, 2010)
- API Power Engineering summer School (Residential) held in Perth (2009) and organised for Sunshine Coast, Qld (Feb 2010).
- Opportunity for API/University Cooperative Research Centre proposal investigation commenced (for submission in 2010 or 2011).
- Coordination with CIGRE CPD Program continued.

## Objective: A Vibrant, Nationally Respected Organisation By Industry, Universities and Government

Outcomes/Goals	Measures	Immediate Actions 2009/10	Medium/Longer Term Actions (2-4 Yrs)
The Nationally recognised representative of the power industry in Australia on power engineering skills and education	<ul style="list-style-type: none"> <li>• Percentage of membership as a total for each sector within the industry</li> </ul>	<ul style="list-style-type: none"> <li>• Cooperative arrangements developed with Australian Power Academy</li> <li>• Promotion of API Activities in accordance with an agreed Sponsorship Policy.</li> <li>• Review UK Power Academy for learnings and opportunities</li> <li>• Involve university representatives in API Board Strategic Planning Review (at least once per year)</li> </ul>	<ul style="list-style-type: none"> <li>• Research, investigate and cooperate on similar initiatives in the region and Europe/USA.</li> </ul>
Retention of Existing Members		<ul style="list-style-type: none"> <li>• Promote value of API activities to future viability of existing member organisations</li> <li>• Offer CE briefings on API Objectives and Achievements to existing member Boards/Executive teams through member contacts</li> </ul>	
Sustainable mechanisms to fund API Objectives from all sources (industry, universities, government)	<ul style="list-style-type: none"> <li>• Funds available to support API Activities</li> </ul>	<ul style="list-style-type: none"> <li>• Target Governor Membership of 15</li> <li>• Target Principal Membership of 12</li> <li>• University expenditure to at least match API expenditure/support for power engineering</li> <li>• Target renewable energy organisations to join API.</li> </ul>	<ul style="list-style-type: none"> <li>• Target Governor Membership of 20</li> <li>• Target Principal Membership of 20</li> <li>• Seek additional mechanisms to fund API Activities</li> </ul>

## Objective: A Vibrant, nationally Respected Organisation by Industry, Universities and Government

### Achievements in 2008

- Amalgamation between API and PEA (Qld) completed.
- Promotion of API Activities in accordance with an agreed Sponsorship Policy implemented.

### Achievements in 2009

- In principle agreement received from Australian Power Academy to amalgamate with API
- Working relationship commenced with IET Power Academy (UK) including visit by API Chair to meet with IET representatives.
- New members in 2009 include Eraring Energy, Siemens, AGL, Alliance Power & Data.
- API Sponsorship of Energy 21C Conference, AUPEC09 Conference, Electric Energy Society Australia National Conference, InGenius (RMIT), Techcon Conference.
- University representatives attended Feb 2009 API Board meeting to give input to Strategic Action Plan Review