

The Power Engineering Research Group (PERG) is a growing research cluster within the Institute for Resource Industries and Sustainability (IRIS), CQUniversity Australia. Our main research strengths are:

- Smart grid and its enabling technologies. Smart grid is an intelligent electricity system which uses modern communications and control technologies to enhance robustness, efficiency, and flexibility of power system operation. It includes better customer integration, meaning consumers will have greater awareness and control of their electricity usage.
- Renewable energy and associated technologies
- Power generation and power quality
- Electrical asset management

Our research has a strong focus on sustainability and providing useable solutions to national and international emerging issues. Due to our growing engagement in smart grid and renewable energy research issues, PERG researchers are now world-recognised experts in the areas of smart grid and renewable energy.



About Us



PERG is looking to the future of electricity generation, transmission and distribution in many forms. Apart from our major research strengths in smart grid and renewable energy, our research currently also includes areas such as power quality, electrical asset management as well as traditional generation, transmission and distribution systems.

We are working collaboratively with industry and research partners to:

- Conduct research for innovative solutions to challenges in these areas using multidisciplinary research expertise. Results from this include ongoing developments of smart grid and renewable energy technologies and Smart SWER systems.
- Facilitate interchange of ideas and collaboration among academia, industry and government on critical industry issues.
- Educate the power industry engineers of future generation.

OUR MISSION

Empowering minds to engineer future smart grid systems for a sustainable environment

OUR PARTNERS

We partner with industry, large and small businesses and manufactures, government, and other research organisations to ensure we deliver useful and useable research for our customers and the community.

Some of our current partners are:

Ergon Energy

CSIRO

Powerlink

Stanwell

Smart Grid Australia

Australian Power Institute

The Australian Government Department of the Environment, Water, Heritage and the Arts

OUR CURRENT RESEARCH PROJECTS

1. Developing Single Wire Earth Return (SWER) communication system for rural SWER.
2. Development of Sustainability Indicators of a Hybrid Renewable Energy System.
3. Experimental investigation and development of renewable energy integration into the smart grid.
4. Design and development of digital smart meter network for distribution network.
5. Storage and its strategic impacts on smart grid.
6. Scheduling and Dispatch of renewable energy with smart grid for a sustainable future.
7. Investigating energy losses in large scale wind generation.
8. Electrical asset management of High Voltage (HV) equipments.
9. Impacts of Electrical vehicles on power distributions networks.
10. Experimental Investigation and Analysis of Energy Neutral Technology and its strategic impact on Australian Power Network.

OUR TEAM

We have a number of dedicated academics in our team working in various research projects along with our growing number of postgraduate students. We also have full time postdoctoral research fellows who are committed to conduct industry based projects.





OUR COLLABORATION

We are dedicated in conducting research which has industry applications and which will bring immediate benefits to our community. We welcome opportunities (large or small) to work with you in projects that bring sustainable benefit to our environment. Currently we are working with the following existing centres within IRIS.

1. Centre for Intelligent and Networked Systems (CINS)
2. Process Engineering and Light Metals Centre (PELM)
3. Centre for Railway Engineering (CRE)

CONTACT US

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