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The benefit of having battery storage systems becomes extremely important for integrating intermittent renewable energy into the electricity grid. In some studies, it is demonstrated that the battery storage has a potential to become a standard in new renewable energy installations, increasing their competitiveness and eventually leading to more deployment of renewables.

More information

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Battery Storage for Large Scale Renewable Integration

The school of EE&T

Competitive advantage

- The impact of this intermittency of renewable generation becomes more pronounced as thermal generation decreases. Batteries can assist networks to ensure that stable and reliable power is delivered to consumers, and to overcome issues such as network congestions and can even potentially offset network capital upgrades needs.
- Medium and large scale energy storage also shows great capability in ancillary services. And it becomes the most obvious solution to allow increased use of renewable generation within the network.

Recent research projects

- Future Grid project. The Future Grid Research Program is a \$13 million research collaboration between CSIRO and four leading Australian universities. It aims to develop the nation's capacity to plan and design the most efficient, low emission electricity grid for Australia.

Successful applications

- Improved understanding of impacts of different loads, generation sources and energy storage on system security;
- Grid planning and co-optimisation of electricity and gas networks;

Facilities and infrastructure

- Energy and power research group with industrial standard software;
- Cross-platform modelling tools for grid studies of the impacts of loads, generation sources and energy storage on system security
- Grid planning and co-optimisation of electricity and gas networks;
- Hardware-in-the-Loop testing bed for energy storage systems with programmable grid simulations on real time digital simulators (RTDS)



Photo source FUTUREGRID

Our experts

Microgrid and energy systems research (Mr Ashton, Dr Chen, Prof Dong, Dr Kong, Dr James, Dr Luo, Dr Meng, Dr Tong, Dr Wang)