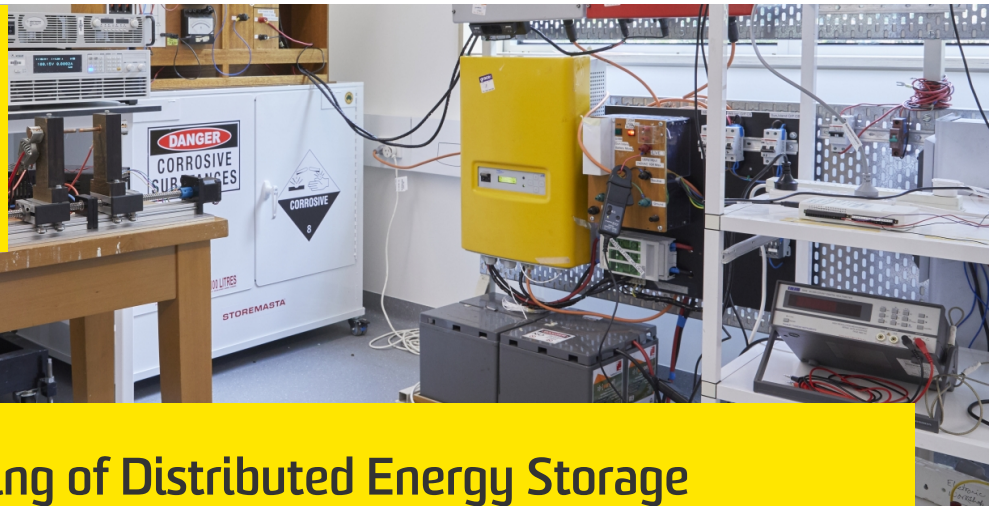




UNSW
SYDNEY



Cooperative Balancing of Distributed Energy Storage Systems

Massive penetration of energy storage systems presents new opportunities for power network operators and individual customers. Innovative cooperation of distributed energy storage systems can improve power quality while bringing additional capacity, flexibility and redundancy into power networks.

Competitive advantage

- Expertise in developing centralized and distributed multi-agent control strategies for energy storage systems. This provides:
- Improved performance compared with decentralised control strategies
- Advantages in terms of robustness, scalability, security and flexibility over centralised control strategies

Impact

- Cooperative balancing can lead to the avoidance of costly power network upgrades and increase power-supply security.

Successful applications

- Development of centralised and multi-agent control strategies for distributed energy storage systems that:
- Are robust to communication network delays
- Allow state-of-charge balancing with no circulating currents
- Have plug-and-play capability

Capabilities and facilities

- One of the largest Real Time Digital Simulators (RTDS) in academic and research institutions globally. It allows:
- Real-time verification of algorithms and simulation of power networks together with accurate models of energy storage systems and power converters
- Hardware-in-the-loop simulation, which is the final step before field verification. This presents the opportunity for rapid research, development and verification neces

More Information

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