



UNSW
SYDNEY

Distributed Energy Resources and their Integration into Electricity Industries

High penetrations of Distributed Energy Resources (DERs) can have a range of impacts. Successful integration of DER will be critical to managing system cost and reliability. This involves managing a range of technical and financial impacts, which in turns involves public participation, regulatory development and appropriate business models.

Competitive advantage

- Leading research group on restructured electricity industries, encompassing Engineering, Business, Social Sciences and Law. Expertise in assessing and managing the technical impacts of DER, and in market design, regulations and policy development..

Impact

- Increase the understanding of the role of DERs and improve their integration into electricity industries and market

Successful applications

- Detailed assessments of the real-world voltage and frequency impacts of DER
- Analysis of impacts and value of distributed PV, storage and demand response on networks and power systems, over a range of timeframes
- Integration between electricity market and distributed energy modelling
- Temporal and spatial characterisation of distributed PV and demand response profiles
- Open source tools including tariff design, distributed energy sharing and aggregation models
- Rooftop solar potential spatial analysis
- Analysis of public participation in governing electricity data
- Interdisciplinary frameworks for policy, market and regulatory assessment and design
- Assessment of the potential and value of DERs for integration of variable renewable energy
- Submissions to regulatory and market rule change processes

Capabilities and facilities

- Expertise in market and DER modelling, data science and developing open source tools

More Information

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UNSW Knowledge Exchange

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- Access to high performance computing facilities on campus, and at the National Computational Infrastructure

Our partners

- Extensive links with key electricity sector stakeholders including all levels of Government; NEM institutions; network businesses; industry associations; NGOs; consultants; energy developers; DER businesses and startups.