Energy Storage Modelling and Forecasting

Leaders in research of renewable energy and energy storage for stand-alone, microgrids and grid connected systems, using state of the art simulations based on machine learning models. Analysing and understanding electricity demand, solar irradiance and weather variables leads to the development of accurate models to forecast electrical loads and photovoltaic power generation.

Competitive advantage

- World-class modelling and energy forecasting for the analysis and technoeconomic optimisation of thermal and electrical storage
- Expertise and capability to accurately simulate the operation of storage systems in detail and as part of larger systems (like a grid or a microgrid), to understand their performance, operation and value proposition in different scenarios, including demand management, renewable energy smoothing and firming

Impact

- Optimised deployment of storage systems
- Optimised dispatch of storage systems
- Analysis of degradation of storage systems
- Better understanding of the value generated by storage systems over time

More Information

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Successful applications

- Optimization of the energy use for a residential hot water system with PV using forecasting and storage modelling.

Capabilities and facilities

- Research storage systems from 30 kWh to 500 kWh
- Microgrid research facilities
- World class capability to optimise grid systems and storage using machine learning
- Access to real data for renewable energy and storage systems

Our partners

- Solar Analytics