Solar Power Forecasting

Accurate solar forecasting is essential for managing and increasing adoption rates of grid-connected solar systems. Forecasts for regionally-distributed PV systems and individual solar power plants can be provided based on a proprietary PV system modelling methodology and expertise in combining Numerical Weather Prediction (NWP) and real-time observations with artificial intelligence techniques.

More Information

Dr Yang Li

School of Photovoltaic and Renewable Energy Engineering

T: +61 (0) 425 332 100
E: yang.li3@unsw.edu.au

UNSW Knowledge Exchange

knowledge.exchange@unsw.edu.au

www.capabilities.unsw.edu.au

+61 (2) 9385 5008

Competitive advantage

This capability can be provided as an API-based software-as-a-service (SaaS) product, which can:

- Optimise dispatch and operating reserve requirements for grid operators
- Meet compliance requirements and reduce risks for solar power plants
- Make energy-management system (EMS) smarter in micro-grid and storage systems

The product features:

- Sophisticated data processing with artificial intelligence methods, and
- Reliable and flexible data delivery through web services.

Impact

- Increased safety and efficiency of grid operation by facilitating grid operators to better optimise dispatch while managing the intermittency and ramp-rate of solar power plants
- Increased adoption rate of solar by overcoming the challenges from high penetration and reduced reserves
- Optimised storage management to reduce required battery sizes and increase battery lifetimes

Successful applications

- The PV system modelling methodology has been used in evaluating and optimising new solar module designs for commercial partners. It has also been integrated into a commercial home battery storage product.

Capabilities and facilities

- Solar system forecasting
- Meteorological data processing
- Artificial intelligence
- Web service development

Our partners

- LONGi Green Energy Technology
- Hebei Sizhuo Photovoltaic Tech
- DSM Advanced Solar
- Energy Research Centre of the Netherlands (ECN)