



**UNSW**  
SYDNEY



## 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.**

### 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

### More Information

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## Our partners

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- DSM Advanced Solar
- Energy Research Centre of the Netherlands (ECN)