

PV Generation



UNSW
SYDNEY

Characterisation of photovoltaic generation to help network operators to plan appropriately for high penetration of distributed PV. A method for estimating the amount a low-voltage feeder can accommodate without exceeding upper voltage limits has been developed, along with methods to manage distribution voltage levels.

Competitive advantage

- Comprehensive characterisation which describes the behaviour of PV generation variability over the course of the day and over the course of the year
- The creation of a simple and efficient method for estimating the level of PV generation a low-voltage feeder can accommodate without exceeding upper voltage limits

Impact

- Simple and efficient methods for estimating maximum distributed generation capacity of a feeder that require no new communication infrastructure and are shown to be more efficient and equitable than similar methods currently proposed
- A tool through which network and microgrid operators can quickly and easily determine approximate values of maximum PV generation for their distribution feeders
- An original distributed voltage control method using residential PV systems and controllable loads to ensure voltage levels, upper and lower, are maintained within regulation limits

Successful outcomes

- Feeder modelling for distribution operators

Capabilities and facilities

- Software tools to expedite analysis of feeder capability
- Realtime digital simulation facilities to verify models

Our partners

- APVI
- Endeavour Energy
- ARENA

More Information

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