



UNSW
SYDNEY

Operation and Protection of Low-Voltage DC Microgrids

The use of DC microgrids is a potential growth area with a range of platforms related to food hubs and logistics, including processing and transportation. The University is developing tools, techniques and models to back up serious experimental work on hardware prototypes, and working on protection devices and systems.

Competitive advantage

- Best-in-class converter design for a wide range of applications in DC microgrids
- Higher efficiency DC-DC hardware and converter technology for low-voltage, high-current DC microgrids

Impact

- DC microgrids offer advantages over AC equivalents. This includes easier control of voltage profiles, easier and more efficient connection of typical load types through power electronic interfaces, and reduces the need for power factor control. These techniques and technologies enhance the efficiency, performance and protection of DC microgrids.

Successful applications

- Tyree microgrid project
- Marine platforms,
- Road-side signage,
- Water treatment plants

Capabilities and facilities

Access to state-of-the-art experimental facilities including:

- 10kVA experimental DC microgrid with diverse set of loads and generators
- 18-rack RTDS capable of modelling microgrid hardware
- OPAL-RT real-time simulator

Our partners

- Hi-Vis Group
- A. W. Tyree Foundation
- ARENA

More Information

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