

Advanced Energy Storage Interfaces for the Digital Grid

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DESCRIPTION OF YOUR TECHNOLOGIES

Advanced energy storage techniques require advanced grid interfaces. Such advanced interfaces ensure that bidirectional inverter or converter technologies are capable of harnessing the benefits of the storage technique, helping unlock the advantages of new storage technologies.

COMPETITIVE ADVANTAGES

- Capabilities across all areas related to energy storage
- Novel interfaces for single- and three-phase AC systems reduce costs and improve storage utilisation
- Unique research and demonstration of hybrid energy storage systems and reconfigurable energy storage systems that can be adapted online to fulfil different operating modes
- Lab-scale development with grid simulation up to 50 kVA

IMPACT

- Extending the lifetime of energy storage systems

SUCCESSFUL APPLICATIONS

- Application of technology at laboratory-scale to include both DC and AC microgrid systems
- Supported development of energy storage solutions for NSW rail networks

OUR PARTNERS

- ARUP
- RES
- Transport for NSW
- AEMO
- TransGrid
- Ausgrid

FACILITIES

- Realtime digital simulation with power hardware-in-the-loop capability up to 50 kVA
- Best in class laboratory equipment including PV simulation, three- and single-phase grid simulation, and load emulation
- Five-node AC microgrid with 5 kVA node capability
- Arbin battery and supercapacitor tester with environmental chamber