HITACHI ABB

Unlocking new revenue and stabilizing large electric grids with energy storage

e-mesh PowerStore high-power grid-forming inverters

Reduce curtailment of local renewable generators and provide continuous power to businesses and residences.

HITACHI ABB POWER GRIDS

Make smarter investments in your network with microgrid capabilities.

Our Grid Edge Solutions provide unique high-value services that can unlock new revenue for your network. These services, including black start, fast power injection, virtual inertia, fault current injection, seamless islanding, and voltage control, are a few of the ways that Hitachi ABB Power Grids is leading the way in pioneering new solutions that keep electricity flowing.

A recent project in South Australia, delivered for the state's high-voltage transmission network owner ElectraNet, demonstrates how Hitachi ABB Power Grids' e-mesh™ Automation and Control solutions work together with e-mesh PowerStore™ to operate as a virtual synchronous machine to provide virtual inertia to strengthen the network. PowerStore further unlocks the power of battery energy storage with its virtual generator mode to improve reliability and resilience in the network.

The project brings in new revenue streams from both improving network operations and selling services in energy markets. With Hitachi ABB Power Grids' e-mesh solution powering the Dalrymple BESS, the Energy Storage for Commercial Renewable Integration (ESCRI) project drastically reduced outages from about 11 hours down to half an hour within its first 18 months of operation. The solution improved local network reliability to minimize renewable curtailment, maximize reliability and reduce operating costs.

PowerStore reduced outages 95%

The Dalrymple BESS began serving more than 100 km of radial feeders in South Australia's lower Yorke Peninsula in late 2018. Prior to the e-mesh solution, local energy consumers were exposed to reliability issues due to frequent lightning strikes.

Hitachi ABB Power Grids' 30 MW e-mesh PowerStore with intelligent control and automation was a key technology for the Dalrymple BESS. The e-mesh solution limits curtailment from the 91 MW Wattle Point Wind Farm and 3.4 MW of distributed rooftop solar panels. It also enables the local network to seamlessly island when required. While islanded, customers in the local network continue to receive secure, reliable power from 100% renewable sources.

During the first 18 months of operation, the PowerStore at Dalrymple generated 13.8 MUSD from participating in energy and ancillary service markets.

The e-mesh solution enables value stacking to the power grid:

- Ancillary services, including frequency and voltage support
- Provide energy services in the national market
- Secure, autonomous operation of the local network
  - Grid-forming inverter featuring proprietary virtual generator mode for seamless transition to island
  - Reliable, resilient power for local network customers
  - Reduced wind farm and distributed rooftop solar PV curtailment
- Black start capability

With the e-mesh solution, the Dalrymple BESS drastically reduced outages from 10.8 hours to 33 minutes during its first 18 months of operation.

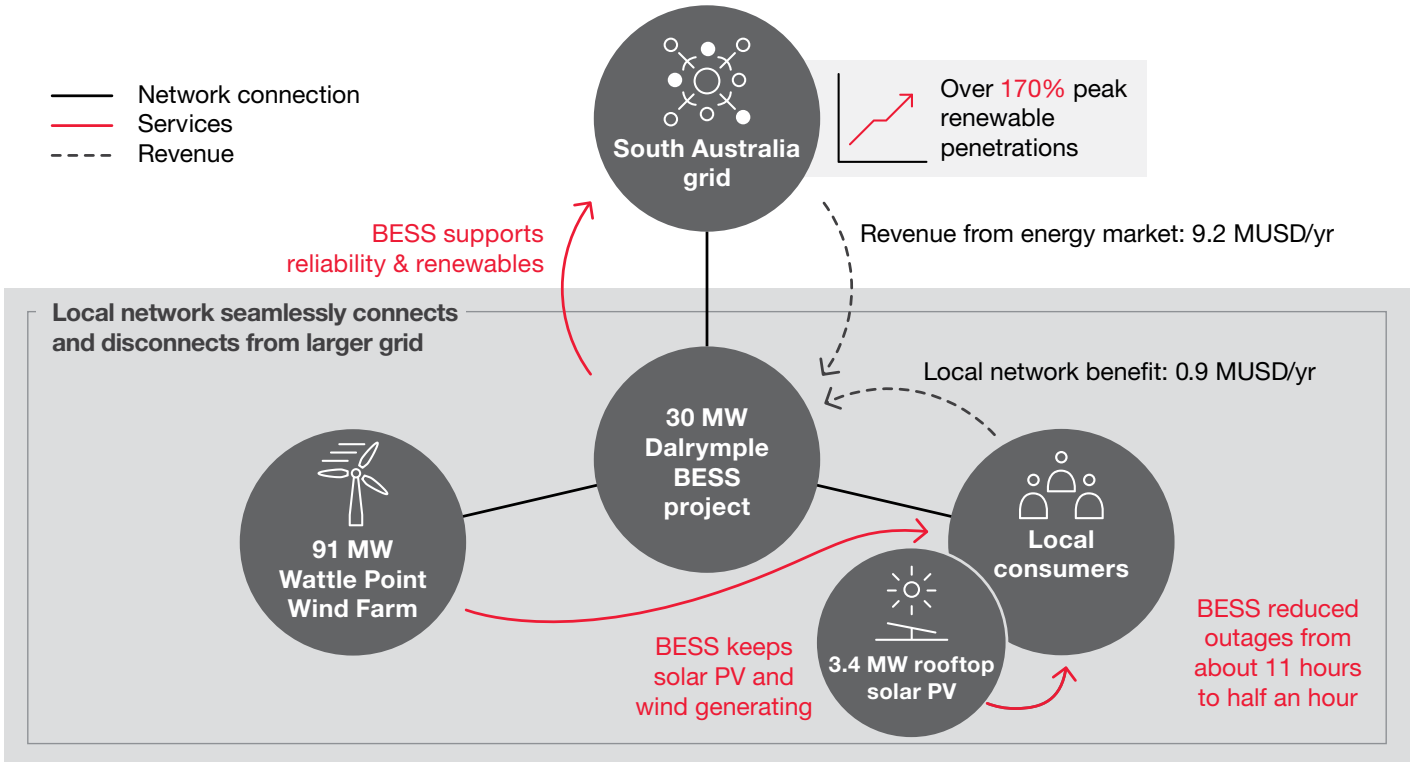
Bring the success of the Dalrymple BESS to your network.

Hitachi ABB Power Grids is a pioneer in energy management, with 30+ years of experience in microgrids and energy storage solutions and an installed based of more than 500 MW across over 200 installations globally. Our Grid Edge Solutions serve a wide range of customers including remote communities, islands, utilities, commercial and industrial sites and renewable operations.

The Grid Edge Solutions e-mesh portfolio includes battery energy storage solutions, microgrid functionalities, an energy management system, advanced control and automation, SCADA, and monitoring applications. The e-mesh portfolio enables optimization of energy production, improves reliability and resilience of power networks, and increases profitability while reducing both CO_2 footprint and operational costs.

See for yourself!

See real-time operations of the e-mesh PowerStore in the Dalrymple BESS at https://www.escri-sa.com.au/



If market trends continue, revenue from the BESS will offset project capital cost within 2 years.

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