Unlocking new revenue and stabilising large electric grids with energy storage
e-mesh PowerStore high-power grid-forming inverters

Unlock new revenue for your network. Stabilise your grid. Reduce curtailment of local renewable generators. Provide continuous power to businesses and residences.

Here’s how ABB Grid Edge Solutions use microgrid functionalities to make it possible to make smarter investments in your network.

ABB Grid Edge Solutions provide unique high-value services that can unlock new revenue for your network. These services, including black start, fast frequency response, inertia support, seamless islanding, and voltage control are a few of the ways that ABB is leading the way in pioneering new solutions that keep electricity flowing.

A recent project in South Australia demonstrates how ABB e-mesh™ control, management and automation, and the ABB PowerStore™ Grid Stabilising System using battery energy storage improve reliability and resilience in the transmission network. The project brings in new revenue streams from both the local network and national energy market.

With ABB’s e-mesh solution, the Energy Storage for Commercial Renewable Integration (ESCRi) project drastically reduced outages from 8 hours down to 30 minutes within its first six months of operation. The solution improved local network reliability to minimise renewable curtailment, maximise reliability, and reduce operating costs.

Keeping South Australia’s lights on
ESCRi began serving more than 100 km of radial feeders in South Australia’s Yorke Peninsula in late 2018. Prior to the e-mesh solution, local energy consumers had been suffering from reliability issues due to frequent lightning strikes and network fragility.

ABB’s 30 MW e-mesh PowerStore with intelligent control and automation was a key technology for the ESCRi project. The e-mesh solution limits curtailment from the 91 MW Wattle Point Wind Farm and distributed rooftop solar panels. It also enables the local network to island when the larger South Australian grid has problems. Whilst islanded, customers in the local network continue to receive secure, reliable power from 100% renewable sources.
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 intelligence for seamless transition to island
  - Reliable, resilient power for local network customers
  - Reduced wind farm and distributed rooftop solar PV curtailment
- Black start capability

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**Commercial success where reliability meets renewables**

Whether enabling reliable renewable power to local consumers, or providing support to the regional grid, ABB Grid Edge Solutions make electric networks stronger, smarter, and greener. As a result, the ESCRI project delivers significant revenues from the high value it provides to the local Yorke and regional South Australia grids.

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**Bring the success of ESCRI to your network**

ABB is a pioneer in energy management, with 30+ years of experience in microgrids and energy storage solutions and an installed based of more than 470 MW across over 170 installations globally. ABB’s 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 optimisation of energy production, improves reliability and resilience of power networks, and increases profitability whilst reducing both CO₂ footprint and operational costs.

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**See for yourself!**