Ameresco worked with Ontario’s Independent Electricity System Operator (IESO) to design and build two battery energy storage systems (BESS) on Newmarket – Tay Power Distribution Ltd’s distribution grid. Ameresco owns, operates, and maintains both facilities, with a total capacity of 4 MW / 16 MWh. This project provides critical time-shifting of energy consumption and production and demonstrates the value of ancillary services.
Solution

The project began in 2015 when Ameresco secured two Energy Storage Facility Agreements from Ontario’s IESO to design, build, own, and operate two 2 MW, four-hour “Battery Solid” energy storage systems. These completed systems provide 16 MWh in overall energy storage capacity.

- Overall design of the BESS and project build
- Operations and maintenance
- Ameresco supplies energy capacity services to the IESO

Projects like Ameresco’s help advance our understanding of how energy storage can improve the reliability and cost-efficiency of Ontario’s electricity system. One of the ways these projects can provide value is by storing energy when prices are low and injecting it back into the grid during periods of greater need and higher prices.

Terry Young
Vice President, Policy, Engagement and Innovation, IESO

Benefits

The Ontario IESO is delivering ratepayer value and environmental benefits through Ameresco’s Newmarket – Tay Power Distribution connected Battery Energy Storage System. By integrating the solid-state lithium-ion batteries for the 44 kV grid interconnected BESS, the facility is able to absorb power during periods of excess energy supply and provide it back to the grid when energy demand is high. In addition to providing this basic “energy balancing” function, these systems will also provide on-going grid reliability and stability as more renewable energy comes online in the area.

- Store electricity during off-peak times
- Deliver grid reliability and stability
- Utilize stored power during peak demand
- Provide ancillary services
- Allow participation in the IESO administered markets