



## CASE STUDY

# Niagara-on-the-Lake Installs First Battery Storage System

## NOTL Hydro considers how to increase solar capacity

Niagara-on-the-Lake (NOTL) Hydro is a municipally-owned local distribution company that delivers up to 55 MW of power to 10,000 customers. The utility has an unusually large number of solar installations so it must carefully monitor its seven 27.6 kV feeders to maintain steady operation.

When solar generation became constrained by electrical capacity and power quality on several feeders, NOTL Hydro launched a test project to gauge the feasibility of using battery storage to increase solar generation beyond current limits. Supported in part by the Ontario Smart Grid Fund, the project will gather four seasons worth of data from a feeder equipped with a battery storage system. When the battery storage is not needed to manage solar constraint, the BESS can be used to alleviate system peaking and for voltage management.

To determine the optimal battery size for the test project, NOTL Hydro performed a detailed cost-benefit analysis. Striking a balance between capital cost and unit size—NOTL Hydro needed a battery of manageable physical size that was also large enough to yield measurable results on a 6000 kW feeder—the utility decided on a 250 kW unit.

### CHALLENGE

After maxing out solar generation on several feeders, NOTL Hydro launched a test project to study how solar capacity could be increased with battery storage technology.

### SOLUTION

Panasonic delivered a plug-and-play 250 kW lithium-ion battery storage system housed in an easily transportable, purpose-built container. In addition to the battery unit, Panasonic supplied NOTL Hydro with complete documentation, equipment warranties, and user training. Panasonic also offers full operations and maintenance support.

### RESULT

NOTL Hydro is pleased with the battery storage system's performance. The unit passed a site acceptance test upon delivery and is operating as expected. NOTL Hydro has started using the battery to gather data for its solar capacity test project. The utility believes it will lead to an increase in renewable energy installations on the grid and help to improve the security of supply.

## Panasonic supplies 250 kW lithium-ion battery

NOTL Hydro selected Panasonic to provide a self-contained, turnkey 250 kW battery energy storage solution (BESS) based on the company's industry track record and competitive pricing.

Panasonic's innovative storage solution is equipped with lithium-ion batteries, PCS, controls and a host of rigorous safety features, all packaged in a sleek, highly functional, cabinet-style enclosure that simplifies transportation and enables convenient plug-and-play installation.

Panasonic commissioned the BESS at NOTL Hydro's Bob Cheriton York Substation in August, 2020. NOTL Hydro reports that the unit is performing very well and data collection is underway.

"During every step of the hand-off, Panasonic was topnotch," said Curtis. "One of the problems I've had with projects in the past is that the last 10% of the effort never gets done because the work isn't handed off properly. This is one project where I can clearly say that the hand-off was done right. I would not hesitate to work with Panasonic again."

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I would recommend Panasonic to other electricity distributors. Their energy storage team was very knowledgeable and they always made themselves available to discuss the project. The quality of the product was fantastic. We were very pleased to receive a compact, purpose-built unit rather than the sea container solution offered by other companies.

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Tim Curtis  
President  
NOTL Hydro