

ALBERTA INNOVATES CLEAN RESOURCES

CLEAN TECHNOLOGY

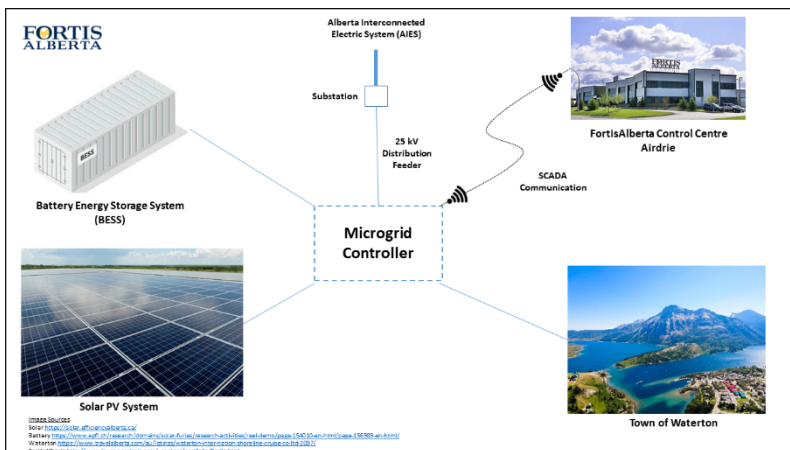
RENEWABLE AND ALTERNATIVE ENERGY – ENERGY STORAGE

FUNDING DETAILS

FortisAlberta Waterton Energy Storage

The Waterton townsite experiences more electricity outages by both frequency and duration compared to many other locations in Alberta. There is only one 70-kilometre-long distribution line feeding the area and connecting Waterton to the grid. If there is an interruption to the electricity on this line, such as if a tree falls, there is no other source of backup power. FortisAlberta devised a new solution that is a first of its kind demonstration in the province to solve this problem. This project will establish an Alberta-based cost benchmark to address distribution system deficiencies using non-wire alternatives.

The FortisAlberta Waterton Energy Storage Project will showcase the stacked technical, economic and social benefits of utilizing a battery energy storage system (BESS) and solar photovoltaic (PV) renewable generation microgrid enabled by advanced distribution control systems. This solution will enable Waterton to maintain power during an outage while the distribution line is being repaired.



RECIPIENT:
FortisAlberta



PARTNERS:
Emissions Reduction Alberta
Natural Resources Canada
Opus One



TOTAL BUDGET:
\$5,135,000



AI FUNDING:
\$1,284,000



PROJECT DATES:
MAR 2019 –
SEP 2022



PROJECT TRL:
Start: 7
End: 8

APPLICATION

By demonstrating the stacked technical, economic and social benefits of using this solution in Waterton, there is the potential for other distribution companies to use similar solutions to support reliability issues in other parts of Alberta. The demonstration project will improve the economic output of local business and the experiences of residents and tourists in the park.

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PROJECT GOALS

- Improve grid reliability for residents, businesses, and visitors of Waterton Lakes National Park.
- Demonstrate the adoption and integration of Battery Energy Storage Systems (BESS) and solar PV systems for insight into future applications.
- Prove an Alberta cost-benchmark for the use of microgrids in distribution system applications.
- Showcase the project successes and share project learnings with industry to promote the adoption of smart grid technologies throughout Alberta.

BENEFITS TO ALBERTA

- For the businesses of Waterton Lakes National Park, power outages impact their commerce and the tourist experience as these businesses are only open during the summer. This solution will significantly improve the experience for visitors and the local economy.
- When compared to that of a traditional pole and wires reliability solution, this Non-Wires Alternative (NWA) solution delivers:
 - A lower carbon footprint,
 - Reduced GHG emissions, and
 - Reduced impact on the natural environment
- The Project will benefit the Alberta electricity consumer by showcasing the capability of BESS technology to improve service reliability, and by providing economic benefits through the deferral of distribution system upgrades.
- Technological expertise and skillsets required to design and build the project will be tested and applied during all phases of the project from planning through construction and post-commissioning. This will promote workforce development and the use of technology to solve a real-world problem.



1-10 Project Jobs



1-10 Future Jobs



<10 kt/yr Project
GHGs Reduced



Supporting 100 - 1,000
kt/yr Future GHGs
Reduced

CURRENT STATUS

DEC 2021

This project is currently in the Construction, Commissioning, and Integration stage. The construction of the BESS, solar PV and control systems were completed in November 2021. FortisAlberta is now working with its project partners to test the communication and integration between the BESS, solar PV and FortisAlberta's SCADA system. In addition, FortisAlberta will be working with Opus One and the BESS service provider (ENEON ES) to understand and develop operating procedures to ensure safe and effective operations. The integration testing and development of operational procedures are expected to be completed by Spring 2022.