UNIVERSITY OF ALBERTA

Solar Photovoltaic with Battery Storage

Augustana Miquelon Lake Research Station | 2017

The Augustana Miquelon Lake Research Station contains a residential space and a laboratory for research and educational purposes. The research station is a significant resource for researchers and educators working collaboratively on natural history, natural resource management and the interactions between human activities and the natural environment.

The research station features a 12 kWh battery bank that connects to solar photovoltaic (PV) panels on the station's south-facing roof as well as the electrical grid. This system powers the research station including an electric vehicle charging system.

Battery storage is charged by PV panels and connected to the grid for backup

ENVIRONMENTAL IMPACT

~1,475 kg of CO_2 emissions are avoided per year

~3.75 MWh is produced per year by the PV panels

PV system generates enough electricity to cover the building's energy use, making it net zero

INNOVATION & TECHNOLOGY

PV system provides power to the battery and building even during a grid outage

Battery can provide power during cloudy days or night

System ties into an electric vehicle charging station

Live solar data can be viewed on our website

ESTIMATED SAVINGS

$300–400 per year in energy cost savings

The payback period is approximately 20 years

Based on energy rates from before this estimate was calculated, the payback would have been closer to 40 years. As the cost of energy increases, so does the affordability and importance of renewable systems.

PROJECT TEAM
- Energy Management and Sustainable Operations
- Augustana Campus

LESSONS LEARNED | Solar photovoltaic can be easy! The installation was fast and the project ran smoothly.

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ENvision
INTELLIGENT ENERGY REDUCTION