



Exceptional service in the national interest

DEPLOYMENT OF BATTERY STORAGE FOR ENERGY SECURITY AT PINE POINT SCHOOL

Henry Guan

Sandia National Laboratories

Energy Storage Grid Integration and Validation Team

Minnesota Department of Commerce Webinar Series – Safety Codes & Standards
Session

7/22/2026



Sandia National Laboratories is a multimission laboratory managed and operated by National Technology and Engineering Solutions of Sandia, LLC, a wholly owned subsidiary of Honeywell International Inc., for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-NA0003525

PROBLEM STATEMENT



- Ponsford, MN experiences frequent winter outages.
- Rural and remote locations like Pine Point school face grid reliability challenges.
- The project addresses energy security and affordability.

PROJECT OVERVIEW

- Communities in rural areas face grid security and reliability challenges when it comes to power. These areas need power systems that can maintain operations during outages while reducing long-term electricity costs.
- The White Earth Nation community of Pine Point near Ponsford, MN experience these challenges, particularly in wintertime, due to weather and high loads.
- Energy storage is a key option for addressing this broader problem because it can support outage ride-through, improve use of on-site variable generation, and increase operational flexibility, leading to greater resilience.



OBJECTIVE



1

Improve energy security for the Pine Point community during power outages through deployment of a microgrid resilience hub.

2

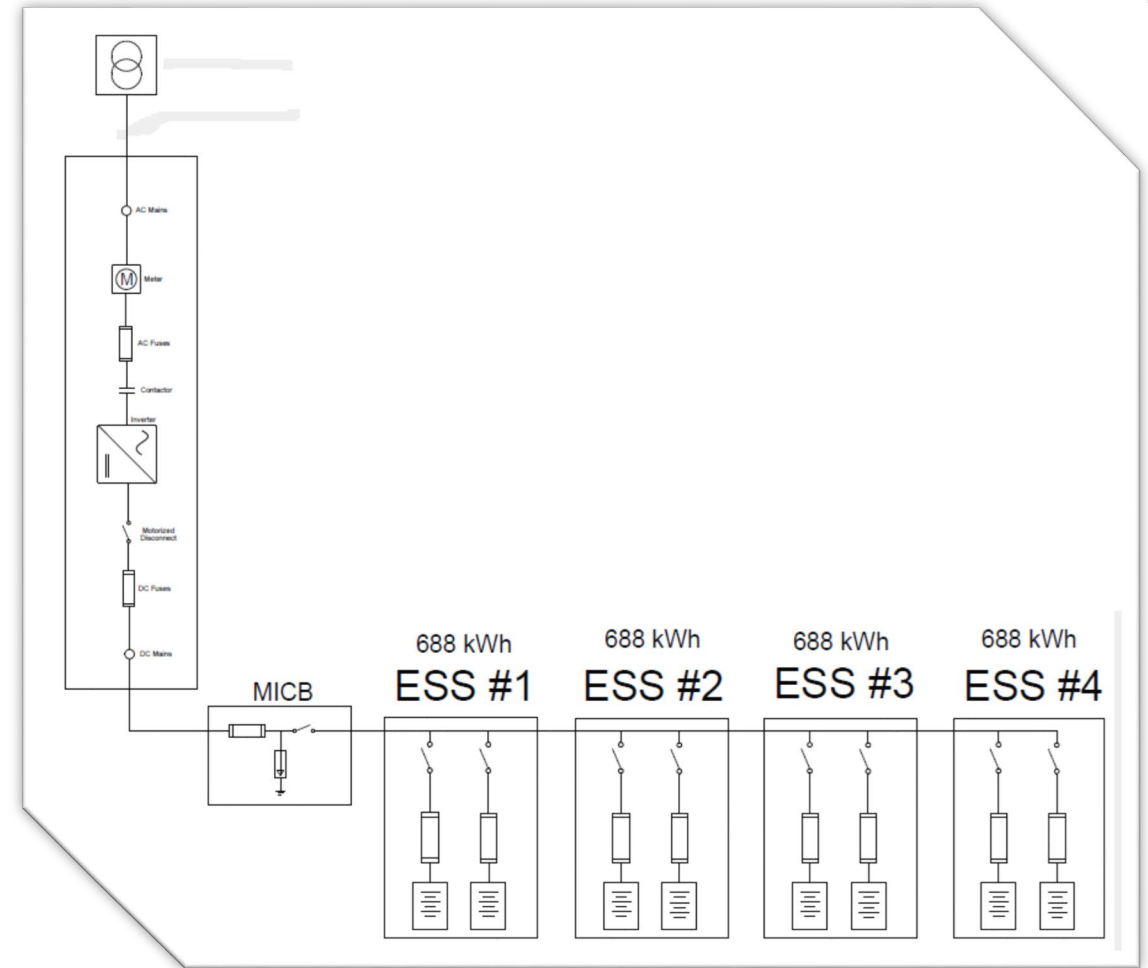
Demonstrate how battery energy storage system with variable generation can support the area during power outages, improve system reliability, support local grid infrastructure, reduce electricity costs.

3

Serve the community as a physical site that will operate to provide electricity, heating and other critical services.

PROJECT DETAILS

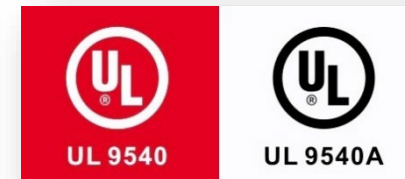
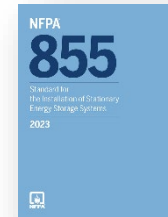
- The project installed a battery energy storage system with variable generation at the Pine Point School to create a resilience hub.
 - **Installed system includes:**
 - 500 kW / 2,760 kWh battery energy storage system
 - 500 kW variable generation
 - **The system is designed to:**
 - Power the building during power outages
 - Recharge from variable generation under favorable conditions
 - Reduce utility costs during normal operation



SAFETY DESIGN AND PROJECT CONSIDERATIONS

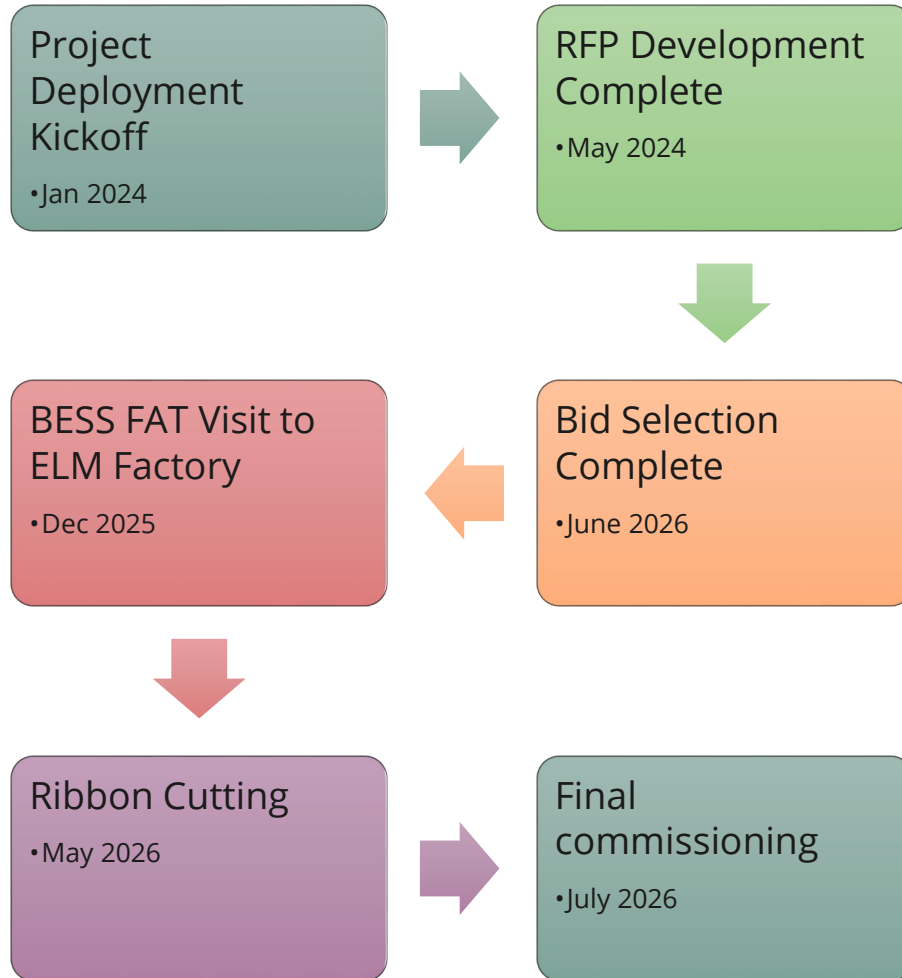


- Sandia National Laboratories provided technical support for project development:
 - Assisted in project RFP development and bid review
 - Safety codes and standards (NFPA 855, UL9540) review and implementation
 - Reviewed system submittals for safety codes and standards compliance
 - Development of Site Safety Plan
 - Development of Emergency Action Plan
 - Implementation of safety best practices from past demonstration deployments.



- Witnessed Factory Acceptance Testing (FAT)

PROJECT DEPLOYMENT TIMELINE



CONCLUSION AND IMPACT



- Demonstrates that energy storage can be used to maintain energy security by providing power during outages to **maintain critical loads** and services while also providing **cost savings** to the host facility and **increasing energy affordability**.
- The project is expected to provide the schools with **gross savings of approximately \$1,325,000 over 25 years** while providing resilience services to the community at the same time.

NEXT STEPS



The next steps for this project will focus shift from deployment to long-term operation. This project will serve as a model for future projects on the White Earth Nation.



Data for the operational system will be collected to evaluate system performance. Lessons learned from the deployment and data collected will be used to inform future battery energy storage deployments.



Long-term ownership will reside with the White Earth Tribe while operations and maintenance will be handled through a joint venture between 10Power and 8th Fire.

ACKNOWLEDGEMENTS



This material is based upon work supported by the U.S. Department of Energy, Office of Electricity (OE), Energy Storage Division.



Project Partners:

10Power
8th Fire
White Earth Nation
Pine Point School

Ziegler Energy Solutions
ELM Microgrid
Sandia National Laboratories
Pacific Northwest National Labs



QUESTIONS?

Contact

Henry Guan | hguan@sandia.gov