

Project Summary

Project Title: Enhancing Utility Resilience in America's Most Forested State

Central Maine Power Company (CMP) will deploy catalyzing technology solutions that increase the flexibility, efficiency, reliability, and resilience of the electric power system. The proposed project will implement Smart Grid technologies including Advanced Grid Restoration (AGR) and Sequential Reclosing (SR), designed to reduce the frequency and impact of outages to the communities served and maximize benefits to disadvantaged communities (DACs) as defined by the U.S. Department of Energy, the White House and/or the State of Maine. The grid enhancing technologies planned have potential to modernize the grid, increase capacity, reduce clean energy curtailment, unlock additional clean energy generation, and enable more resilient grid operation.

Project Objectives:

1. Contain outages resulting from extreme events in a safe and cost effective manner;
2. Advance the ability to identify locations of disruptions and reduce restoration times from such outages;
3. Enhance planning activities by increasing load sensing capabilities;
4. Facilitate the safe operation, extend generations uptime, and increase penetration of penetration of Distributed Energy Resources (DERs); and
5. Reduce risks to health and safety of the affected community.

Project Description:

Under this project, CMP would conduct the following proposed tasks:

- Distribution Automation Programming to incorporate "self-healing" technologies resulting in a reduction the quantity of customer outages and the duration those customers lose power.
- Comprehensive area studies to increase capacity of transmission facilities or the capability of the transmission system to reliably transfer increased amounts of electric energy and allow for integration of renewable energy resources at the transmission and distribution levels.
- Substation studies to facilitate the aggregation and integration of electric vehicles and other grid-edge devices or electrified loads.
- Transmission Supervisory Control and Data Acquisition (SCADA) Switch Program to prevent faults that may lead to wildfires or other system disturbances.

Benefits and Outcomes:

Direct benefits of the project in the event of extreme weather or natural disaster:

- Enhance ability to redirect/shut off power, minimize blackouts & avoid further damage.
- Mitigate the impacts of extreme weather or natural disaster on grid resiliency and increase the ability to redirect/shut off power to minimize blackouts, prevent wildfires.
- Improve visibility of electrical system to grid operators, to quickly rebalance the electrical system with autonomous controls using data analytics, software, and sensors.
- Aggregate and integrate distributed energy resources.

Applicant: Central Maine Power

Project Manager: Kimberly Cullen, PE, MBA, Manager - Distribution Planning, CMP

Participants: Electricore, Inc.