



Microgrid Resiliency Project

Seattle City Light is exploring innovative ways to implement emerging technologies for customers. These technologies will enhance electrical reliability across the utility's service territory.

In August 2016, Governor Jay Inslee announced \$12.6 million in Clean Energy Fund grants to five utilities in the state of Washington. Seattle City Light's microgrid resiliency project was chosen as one of the recipients for a state clean energy grant.

PROJECT OVERVIEW

Seattle City Light is partnering with Seattle Parks and Recreation to implement a microgrid project at Miller Community Center. The project will include the installation of a battery energy storage system, kilowatt (kW) sized solar panels and microgrid controls. The microgrid will provide backup power storage for the community center during unplanned emergency events, such as a storm or earthquake.

When the electric grid is down, the microgrid can keep the center's emergency services and communications operational. A \$1.5 million grant from the state of Washington will provide a portion of the funds for the project.

City Light is partnering with the University of Washington to perform analytics on the microgrid's community and utility benefits.

HOW WILL THE PROJECT OPERATE?

During normal operations, the solar panels will charge the battery system. When the solar panels are not generating, the batteries can back up the delivery of electricity from City Light's distribution grid. The microgrid will provide backup power storage for the community center during unplanned outages.

USE CASE ONE

Grid Support and Ancillary Services
*Frequency Regulation

USE CASE TWO

Improving Distribution Systems Efficiency
*Renewable integration
*Deferment of distribution system upgrade

USE CASE THREE

Islanded microgrid operations



Miller Community Center

ESTIMATED MAJOR COMPONENTS

- A battery energy storage system with power capacity in the range of 200–250 kW and energy capacity in the range of 750–1,000 kilowatt hours
- A rooftop PV array in the range of 40–50 kilowatts
- A microgrid control system providing functionality of islanding and grid-reconnection, grid management during islanded operation

PROJECT BENEFITS

City Light will empower a community to recover quickly from unplanned emergency events and gain technical knowledge on the installation and operation of a microgrid system.

Analytics from the microgrid resiliency project will allow City Light to research and develop similar technologies across the utility's service territory.

PARTNERS

Owner's Engineer–DNV GL

Engineering, Procurement and Construction (EPC)–to be determined

MORE INFORMATION

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