

Featured Resilient Power Installations

With its Resilient Power Project, Clean Energy Group advocates for and supports technical assistance to solar PV and battery storage (solar+storage) projects that offer economic and resilient power benefits to disadvantaged communities and to critical community facilities. Several installations are briefly described below that represent these types of innovative resilient power projects. While each of these solar+storage installations is unique in its design and implementation, all aim to strengthen the resilience of a community and provide power to essential services when power outages occur. For more information about our work and other resilient power installations, visit Clean Energy Group's website at www.cleanegroup.org and at resilient-power.org/featured-installations.

Marcus Garvey Apartments

Brooklyn, New York

Year Commissioned: 2017 Solar: 400 kW Storage: 300-kW/1200-kWh lithium-ion battery



As the first resilient power microgrid installed at an affordable housing property in New York City, this innovative project combines solar, batteries, and a fuel cell to cut electricity costs and deliver backup power during outages—supporting common area lighting, security systems, heating, refrigeration, and cell phone charging. The system also generates revenue by participating in a utility demand management program. Savings achieved by the system are passed on to residents of the 625-unit housing complex in the form of programming that supports quality of life activities.

Tish Non Village Community Center

Humboldt County, California

Year Commissioned: 2015 Solar: 100 kW Storage: 30-kW/60-kWh lithium-ion battery



This community center serves as a vital community hub for the Bear River Band of the Rohnerville Rancheria, hosting activities for elders and youth, educational programs, daycare, parenting classes, family activities, and community meetings, and serving as the main administration building for the tribal government. With a solar array, 20 wind micro-turbines, and a battery system, the center's resilient power system will reduce annual grid energy use by 40 percent and shave peak demand expenses, along with keeping the center running in an emergency. According to Bear River Band's former executive director, "The microgrid, in addition to providing that element of self-sufficiency that's so important to [our tribal]

sovereignty, also pencils out in the long run: Simply saving on power bills over time will save the tribe money and means that there are more dollars available for services for tribal members."

North Putnam Schools

Bainbridge, Indiana

Year Commissioned: 2016 Solar: 1.6 MW Storage: 300-kW/360-kWh lead-acid battery



The rural school district of North Putnam is the first in Indiana to completely offset electricity use at two of its schools with solar generation. By adding battery storage to an existing solar farm, the school not only serves as a resilient community shelter, it also solved its issues with solar overproduction in an area constrained by limited utility infrastructure. Instead of curtailing solar production during periods of high output, the school can store excess electricity in batteries for later use. Kiosks throughout the school allow students to learn about the building's on-site energy production and consumption. The system is expected to save the district \$8 million

over 20 years, but, to the district's superintendent, the system represents much more: "I see it as being more than that...[It's] clean air, clean water, and clean energy."

McKnight Lane Redevelopment Project

Waltham, Vermont

Year Commissioned: 2016 Solar: 6 kW Storage: 4-kW/6-kWh lithium-ion battery



Redevelopment of a defunct mobile home park brought about the construction of 14 zero-net-energy modular homes in rural Vermont, each equipped with a rooftop solar array and a battery storage system. When the grid is operating normally, the batteries can be deployed by the local utility to manage system costs for all ratepayers. When an outage occurs, the solar+storage system islands from the grid and provide electricity to keep essential appliances and heating and cooling systems up and running for McKnight Lane's low- to moderate-income households.

Sterling Municipal Light Department

Sterling, Massachusetts

Year Commissioned: 2016 Solar: 2 MW Storage: 2 MW / 3.9 MWh lithium-ion battery



Facing rising operating costs and resiliency concerns, Sterling Municipal Light Department (SMLD) decided to add a 2-MW battery system to complement an existing solar array on its distribution system. During a grid outage, the battery and solar microgrid can support operations at the Sterling police station and emergency dispatch center for up to 12 days. In its first year of operation, the battery system delivered nearly \$400,000 in savings to SMLD and its ratepayers. According to SMLD's General Manager Sean Hamilton, "Energy storage is the next step for our industry."