



GRID-INDEPENDENT ELECTRICITY SYSTEM

PROJECT

Sandbar Solar & Electric
Microgrid Facility

LOCATION

Santa Cruz, CA

APPLICATION

Isolated Microgrid System

PRODUCT

Blue Planet Energy
Blue Ion LXHV

Blue Planet Energy Reinforces 11,500-Sq-Ft Warehouse Microgrid

When setting out to build its new corporate headquarters, Santa Cruz-based solar installer Sandbar Solar & Electric had a choice: plan and pay for the costly, multi-year process of connecting to utility power, or equip the building to run independently from the grid. As a renewable energy installer, the decision to install a solar-plus-storage microgrid was natural.

BATTERY SYSTEM

(2) Blue Ion LXHV cabinets,
64 kWh capacity total
(3) Avalon 30 kWh AFB3

POWER CONVERSION

(2) 30 kW Ideal Power
30C3 Inverter
(1) SEL-547 Protective Relay

SOLAR

38 kW Solar PV Array
21 kW Solar PV Array

GENERATOR

60 kW Basler DGC 2020
Natural Gas Generator



When Scott Laskey, owner of Sandbar Solar & Electric, decided to build a 11,500-square-foot warehouse and office space on undeveloped land, he knew he had to equip the site with a reliable power source. One option was to accept electricity from the local utility, PG&E, which was estimated to cost nearly \$75,000 to establish a new electrical service, take 18 months to connect, and cost around \$1,000 monthly

for electricity bills. But as a renewable energy installer, Laskey favored an alternative option - a standalone microgrid that allowed his building to generate, store, and distribute its own energy.

“Over a twenty-year period - not even including the \$75,000 interconnection study or the carrying costs for every month we waited for grid connection - utility power would end up costing about the same as a microgrid. The obvious decision was to build an islanded microgrid so we’d have energy independence.”

—Scott Laskey

Owner and President, Sandbar Solar & Electric



“Our commercial energy storage system lets Sandbar put all available solar energy from the roof to work at the facility, with only a small footprint on their warehouse floor.”

—Ben Widmer
Product Manager
Blue Planet Energy

Adding Value to Existing System

Experienced in installing off-grid projects, Sandbar Solar & Electric was able to manage the technical aspects of the microgrid installation itself.

Combining a 59 kW rooftop solar array, 30 kWh Avalon batteries, a 60 kW natural gas generator, and microgrid control software developed by Ageto Energy, Sandbar Solar & Electric’s system was designed to produce enough energy to satisfy the building’s energy needs for over 96% of the year. The remaining time, particularly in prolonged cloudy weather, would be covered by the generator. But as Sandbar Solar & Electric’s operations continued to grow, so did their energy load, and they quickly realized the need for additional battery capacity.

By adding a Blue Planet Energy Blue Ion LXHV system, Sandbar Solar & Electric was able to increase their load capacity by 64 kWh, as well as benefit from increased efficiency and usefulness from their existing solar resources, while reducing reliance on the gas generator.

With a highly-efficient charge and discharge rate, Blue Planet Energy’s battery remains charged without expelling energy, allowing it to store 100 percent of the incoming solar energy and greatly reduce generator usage - and its associated environmental impact and noise. And, as the building’s energy needs expand, the Blue Ion LXHV is fully scalable over 2 MWh, allowing Sandbar Solar & Electric to easily install additional capacity to the existing system.

The performance and safety of batteries are essential for a site without grid connectivity. The Blue Ion LXHV is made with a fire-safe battery chemistry with additional built in system safeguards, and operates within a wide range of temperatures, from -4°F to 113°F. While maintenance requirements are rare, the battery features a removable service entrance and zero-displacement door hinge for safe serviceability without sacrificing energy density.

Grid-Independent Facility Models Microgrid Success

Sandbar Solar & Electric’s property is equipped with commercial-grade, 480V, 3-phase power and has been operating completely independent of the grid since the installation of its microgrid. During that same time, Santa Cruz experienced multiple city and statewide power outages, yet Sandbar Solar & Electric was able to remain fully operational during each event.

Laskey was also able to cut his monthly energy bill to zero, except for a \$9 natural gas charge, and expects the system to pay for itself in the coming years - further proving that the solar-plus-storage microgrid provides cleaner, cheaper, and more reliable power than the local utility.

As a pioneer for microgrid projects in Santa Cruz, Sandbar Solar & Electric is using its system’s performance data to help the city define guidelines for future microgrid developers.

To learn more about Sandbar Solar & Electric, visit sandbarsc.com.