

Customer-Sited Energy Storage: A Win-Win for Customers and the Energy Grid

By **LISA WOOD**

Today, commercial, industrial, and institutional (CII) customer-sited energy storage is being used to address both customer needs and energy grid needs. While the primary value of energy storage to CII customers is demand charge management and energy savings through optimal on-site energy management, opportunities are emerging for energy storage as an energy grid resource, too. Projects in both California and Hawaii are demonstrating that storage is a win-win resource for both customers and the energy grid.

Technology Companies Are Leading the Way

Today, technology companies such as Advanced Microgrid Solutions (AMS) and Stem are using non-proprietary battery technology and proprietary analytics software to reduce customer demand charges and to save energy by optimizing and controlling customers' energy use. But this is only part of the story.

These same companies also are managing and aggregating a fleet of

customer-sited energy storage assets that range in size from 30 kilowatts (kW) to 3 megawatts (MW) to create what looks like a demand-response



resource, but is in fact much more. The software that manages the batteries installed at the customer's site automates energy use decisions on behalf of the customer and compares the customer's usage to energy grid conditions to optimize when to charge and discharge the battery.

Electric companies in California are contracting with distributed energy resource (DER) aggregators like AMS, Stem, and others to provide two different types of resources—overall system capacity and location-specific capacity.

- Through the Demand Response Auction Mechanism, which allows DERs to participate in the California energy market, the three investor-owned electric companies contracted for 200 MW of capacity in 2017 (to be delivered in 2018 and 2019) with several DER aggregators, up from 82 MW contracted for in 2016.
- Another role for DER/storage aggregators is to provide location-specific resources. Stem and AMS are working with Southern California Edison (SCE) to provide location-specific capacity in the highly congested West Los Angeles Basin region. Stem has an 85-MW contract with SCE to help engage its customers in demand response in that area to provide capacity. By the end of 2018, AMS plans to have 54 MW installed and under contract in the same LA Basin area.

These technology companies also are providing grid-edge visibility and resource management services to electric companies. Stem is working with Hawaiian Electric Company (HECO) on a 1-MW, three-year pilot to help HECO identify and deploy storage assets with CII customers located around distribution substations and feeder lines to better respond to high penetrations of private solar installations.

Stem has identified 30 strategically located customer sites for energy storage installations.

In addition, Stem provides real-time energy monitoring across 400 public schools and commercial buildings to help provide HECO with grid-edge visibility and better energy management for customers.

The Future of Energy Storage

To capture the multiple value streams associated with energy storage, the customer, the technology company, and the electric company all have a critical role to play. **EP**



LISA WOOD is executive director of the Institute for Electric Innovation and vice president of The Edison Foundation.

🐦 @LisaWoodEnergy

The Institute for Electric Innovation focuses on advancing the adoption and application of new technologies that will strengthen and transform the energy grid. The Institute's members are investor-owned electric companies that represent about 70 percent of the U.S. electric power industry and are committed to an affordable, reliable, secure, and clean energy future.



The Edison Foundation

INSTITUTE for
ELECTRIC INNOVATION