

ShoEi Foods USA, Inc.



Storage, software and solar combine to save ShoEi Foods \$72,000 annually

Located in Olivehurst, California, ShoEi Foods USA, Inc. is a leader in the food processing industry, preparing nearly 1,000 acres of prunes and walnuts annually. In addition to its processing plant, the business requires energy intensive refrigerated warehouses that operate around-the-clock. Knowing that improved energy management would directly impact the bottom line, as well as underscore the company's commitment to sustainability, ShoEi's executive team began a search for the best solutions to reduce energy use. ShoEi's team originally looked to solar and engaged Synergy Solar after a competitive solicitation. When Synergy Solar saw ShoEi's energy profile they knew a combined solar storage solution would help ShoEi save more than solar alone.

Synergy partnered with Stem to scope out a combined solar-storage energy management system for ShoEi. As Stem's team of energy consultants reviewed the company's energy profile, they identified a lucrative opportunity for ShoEi to apply Stem's software plus storage solution to modify their energy profile and qualify for a more cost-effective rate plan. For businesses, electric bills include two main components: energy charges, based on the total amount of energy used during the month, and demand charges, which are based on the maximum amount of energy used at any one time during the month. Businesses that can consistently keep their maximum demand under a certain level, decreasing their energy provider's cost to serve them, can switch to a more advantageous rate plan. By integrating solar to offset daytime energy use and storage to lower demand charges and stay under the specified limit, ShoEi would save an estimated \$6,000 per month. Stem proposed the rate switch plan to ShoEi, and as a result, Stem and Synergy Solar were awarded the project.

Location

Olivehurst, California

Facility Type

Food processing facility

Applications

Solar + storage, Reduce peak demand, Shift time-of-use rates, Utility cost reduction, Sustainability, and Protection against rate changes

Commercial Operation Date

September 2013

Energy Storage System Size

72 kW

10-year Estimated Savings

\$720,000

“Once we learned what Stem was capable of, it was a no brainer signing up with them. We moved forward immediately, and they've added value to ShoEi from day one.

If I can use the software, anyone can. I noticed that in late October when it gets dark earlier, we get a little less energy from our solar panels. Stem's software and alerts make it easy to adjust for that—it's really all about knowing what's happening in order to act on it.”

Dwight Davis

Director of Plant Operations at ShoEi Foods USA, Inc.



Challenge

In order to move to the preferable rate class, ShoEi would have to stay below the qualifying maximum demand level of 500kW for one full year. Stem's real-time software added a level of precision to ShoEi's operations that proved critical to maintaining consistent control over energy usage. "Real-time is key, especially when every 15-minute interval counts. If you have one 15-minute interval in a month that exceeds maximum demand for your current rate, it's a strike against you. If you get three strikes in consecutive months, you're back up to the higher rate immediately," said Mr. Davis.



Solution

To begin integrating its energy management technology into ShoEi's daily operations, Stem first activated its software to help ShoEi gain better visibility into the facility's energy usage. The software enabled ShoEi to understand the energy impacts of specific equipment, identify patterns, and make adjustments to smooth usage peaks throughout the day.

Next, Stem installed its storage system. The software and battery work in concert to lower ShoEi's maximum demand: when the software detected a spike in energy usage that would cause ShoEi to exceed the 500kW demand threshold, it automatically sent a text message notifying ShoEi facility managers who could choose to reconfigure operations and reduce demand. Concurrently, Stem's storage units automatically released stored energy, which bought more time for the team to make the necessary adjustments. "Stem's storage acts as a first line of defense," said Mr. Davis. "Stem gives us time to make adjustments that ultimately make or break our ability to meet the requirements of the [new] rate."

Results

With precise planning and close cooperation with Stem's team of energy consultants, ShoEi was able to switch to a more cost-effective rate in the minimum possible time—one year. "We told Stem what we wanted to achieve and they made it happen: Stem's software collected the data that was needed to make a plan precise enough to hit our goal. When we finally cleared the mark and moved down to the [lower] rate tier, we actually jumped for joy. Now we save about \$6,000 per month as a result," said Mr. Davis.



The Stem system automatically produces savings and also provides ShoEi's team with valuable insight into its energy data. "Now that we understand our energy patterns, I don't feel like I have to monitor the system every day to know that our energy usage is in check. I try to look at least once a week, though I don't normally need to." Mr. Davis commented. Persistent savings facility expansion A few months after successfully switching to the new rate class, ShoEi made some large-scale facility upgrades to increase their overall throughput. The upgrades increased ShoEi's horsepower by more than 50 percent, threatening to push them over the 500kW limit. Stem worked closely with ShoEi to refine the system and help them optimize operations to stay below the threshold, despite the near doubling of energy flowing through the facility. With Stem's software and storage as a safety net, ShoEi has successfully maintained its current rate tier without a single misstep. Since switching to the new rate, ShoEi has saved thousands and expects to save \$72,000 each year.

