

Supermarket earns \$290,000 annually through demand response program

Result

- Utilized E2 energy management system and Emerson's Demand Response application to execute & record demand response load sheds
- Reduced energy consumption during peak price periods
- Earned \$294,800 in utility reimbursements across 167 Stores

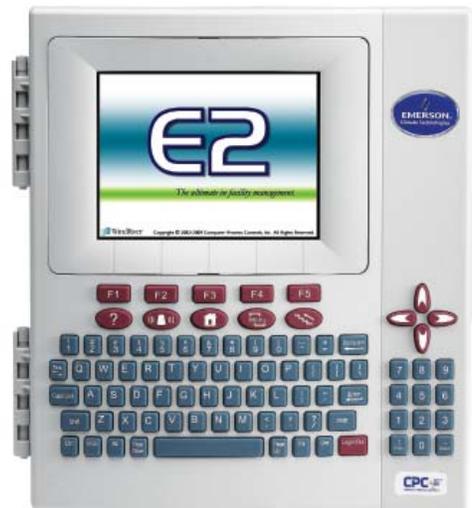
Challenge

Stater Bros., a supermarket chain with 167 stores in southern California, wanted to participate in demand response programs without installing additional equipment to execute and record load-sheds.

Solution

Emerson worked with Stater Bros. to identify their energy shed potential, develop load shed strategies, and create load shed schedules that Stater Bros. could execute through their E2 energy management systems. This allowed Stater Bros. to participate in a demand response program offered by their local utility company and annually earn \$294,800.

Demand Response programs are offered by utility companies as a means of lowering energy consumption during periods of peak electricity demand. In exchange for the right to request energy sheds four to six times per year, utility companies pay participating businesses an annual fee based on the total amount of demand that the company can remove from the grid. To collect payment from the utility, retailers must develop the control strategies that will reduce their energy consumption and must provide records verifying the execution of the load-sheds. Inexperienced companies and companies without intimate knowledge of refrigeration systems risk creating load shed commands that negatively affect customer comfort or food quality,



but Emerson’s energy specialists ensure that control strategies are well planned and perfectly executed. Working closely with Stater Bros., Emerson was able to identify viable demand reduction strategies such as dimming rows of overhead lights, rotating ventilation fans, raising store temperatures by 3-5 degrees, and raising suction pressure for 1 hour. These strategies, executed through Emerson’s Demand Response application enabled Stater Bros. to reduce its energy consumption by 6.7 MW across its 167 store enterprise.

Utilizing their existing E2 controllers to execute and record shed events allowed Stater Bros. to avoid spending \$4,500 per store for the control box that curtailment service providers require. E2 controllers also send data directly to the Demand Response web portal. Stater Bros. can access the portal via a virtual private network and initiate load-sheds from anywhere in the world. Emerson’s Demand Response then executes the shed through Stater Bros.’ installed E2 network and displays a real-time dial that documents the successful curtailment.

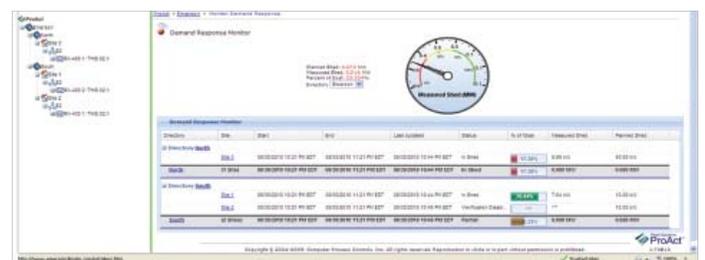
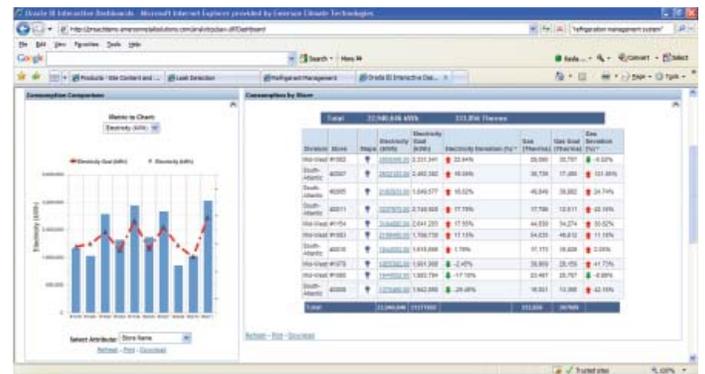
Stater Bros. recognized the energy savings benefit and profit potential of participating in demand response programs by leveraging their E2 energy management system and Emerson’s Demand Response. By using their E2 controllers to execute and record load sheds, Stater Bros. avoided the \$4,500 per store cost of separate metering boxes that most load aggregators require. Stator Bros. secured an ongoing payment of \$294,800 from their utility in exchange for shedding 6.7 MW of demand up to six times per year. Contact Emerson Climate Technologies or your local utility company to find demand response programs in your region.



Process

The improvement process begins with a rigorous analysis of your enterprise energy data. Emerson engineers review/analyze your operations for savings opportunities and design a curtailment program that fits your desired level of savings. Once your energy shed potential is quantified it can then be sold to a utility with a demand response program, often for as much as \$50,000 per MW.

- Identify load reduction potential
- Select load aggregator & utility
- Negotiate reimbursement payment contract
- Aggregator or utility will periodically request load sheds
- Execute load shed through Emerson’s Demand Response web portal
- Emerson’s Demand Response monitors & records shed data



Result summary

| Participating Stores | Energy Shed Potential | Demand Response Contract Terms | | Total Income From Demand Response Program |
|----------------------|-----------------------|--------------------------------|--------------------------------------|---|
| | | Maximum Shed Requests Per Year | Annual Payment Per MW Shed Potential | |
| 167 | 6.7 MW | 6 | \$44,000 | \$294,800 |