

VENSTAR'S SURVEYOR ENERGY MANAGEMENT SYSTEM SAVES AUTOZONE MILLIONS ON ITS ENERGY SPENDING; CUTS COSTS BY 30 PERCENT

CHALLENGE:

Reduce energy costs using an energy management system

Memphis-based AutoZone is the leading distributor of automotive replacement parts and accessories with more than 6,200 retail stores in the United States, Puerto Rico and Mexico.

In 2003, AutoZone's corporate leaders challenged its maintenance team to find ways to reduce energy costs without detracting from the store environment.

Having already worked with Venstar on thermostats, AutoZone turned to the Venstar team to custom design an energy management system that would work for their small-box retail stores. AutoZone's maintenance team collaborated with Venstar engineers to develop, test and pilot an energy management system.

Objectives:

- Improve energy efficiency and reduce energy usage and costs
- Develop and maintain effective monitoring, reporting and management strategies
- Find better ways to increase returns from energy investments
- Reduce the impact of curtailments, brownouts or any interruptions in energy

Successful Pilot Test

In 2003, AutoZone did a comprehensive test of Venstar's new custom energy management system in 26 of its California stores. The test was successful, significantly reducing energy costs at these stores. AutoZone's leadership team was so pleased with the energy savings that it rolled out the system to all of its stores in California (380 at that time).

"Our Venstar Surveyor energy management system and related programs have enabled us to save millions of dollars while helping us use resources wisely."

*— Preston Frazer, vice president,
Store Operations Support, Customer Satisfaction, AutoZone*

Funding: \$1.1 Million From the California Energy Commission

AutoZone was able to take advantage of the California Energy Commission's 2003 Cash for Kilowatts program that tested and validated energy-savings capabilities. It validated AutoZone's ability to comply with demand-response incidents by remotely controlling lighting and HVAC to reduce energy usage. As a result of AutoZone's proven energy savings systems, the commission awarded AutoZone with \$1.1 million to subsidize its investment in this new technology.



About

SURVEYOR™

ENERGY MANAGEMENT SYSTEM

Venstar's Surveyor is a leading energy management system, typically saving small- to medium-box retailers 25-35 percent of their energy costs, which translates to tens of millions of dollars in savings each year and dramatic reductions in CO₂ emissions. Surveyor currently controls the energy usage of 35,000+ retail locations across the United States, Canada, Puerto Rico and Mexico.

Venstar's Surveyor EMS empowers small-box retailers and other multi-location businesses to remotely monitor, control and manage their HVAC and lighting/electrical and mechanical systems in all their stores, giving them unprecedented visibility into their energy usage.

With the cost-saving success of the energy management system along with the rebate, AutoZone's leadership team authorized the installation of energy management systems at all of its stores in the United States, Mexico and Puerto Rico.

An inside look at the AutoZone energy management system

AutoZone's energy management system consists of controls and sensors that are installed in each HVAC unit to monitor its efficiency and help manage the health of the equipment.

Lighting/load control panels independently control interior and exterior lighting zones, including parking lots and outdoor signage. Interior occupancy sensors turn lights on and off in areas of the stores that are not frequently used.

An ultra-secure Internet gateway transmits data from each store's HVAC and lighting equipment controls and sensors to the corporate data center. All of the equipment can be remotely managed using a desktop computer or via the mobile app.

Controlling the energy at more than 6,200 AutoZone stores

AutoZone's energy management system controls the energy usage at more than 6,200 AutoZone stores in the United States, including Puerto Rico, as well as Mexico, where it has more than 500 stores. Across the chain, the system manages more than 20,300 HVAC units and more than 6,100 electrical lighting control panels with more than 200,000 sensors.

Remote Monitoring and Control of HVAC and Lighting

A key benefit of AutoZone's energy management system is the ability to remotely monitor and control the HVAC and lighting equipment. More than 150 field personnel, including AutoZone's energy management, maintenance and corporate construction teams, rely on the mobile app to remotely monitor and make changes to the HVAC and lighting equipment at the stores from virtually anywhere.

"Global Changes" feature enables simultaneous modifications for all stores

Instead of having to make changes manually for each of the stores, the energy management team can make global changes for all 6,200 stores or for stores in select geographic regions or climate zones. Changes take minutes instead of hours or days.

Preventive maintenance helps prevent system failure

The energy management system also helps with preventive maintenance. For example, if the supply air is not within the pre-set temperatures, the system sends an email alert to the designated management team members, allowing them to address potential concerns before they become costly problems.

System over-ride to accommodate changes in store hours

Each store has programmed HVAC and lighting settings and schedules based on store hours, which helps ensure that the heating, cooling and lights are not left on when the store is unoccupied. Optional overrides accommodate changes in store hours, such as for store maintenance, inventories and deliveries.



Amanda Turner, energy management manager, Customer Satisfaction, and Clint Burks, energy management systems specialist, Customer Satisfaction, AutoZone.

“Our Venstar energy management system has given us unprecedented visibility into and control of the energy usage at our stores.”

– Preston Frazer, vice president, Store Operations Support, Customer Satisfaction, AutoZone

Visual reporting on a big-screen monitor

The status of every store, including local weather, is displayed on a map on a big-screen monitor at the AutoZone corporate offices. This feature allows the team to make adjustments in real-time to keep stores comfortable, especially during extreme temperatures.

Participation in utility demand-response programs

Participating in demand-response programs allows AutoZone to help avoid brownouts by reducing or shifting energy usage during peak periods. It allows AutoZone to take advantage of time-based rates and financial incentives offered by the utility companies.

Overall Results: \$167 million in energy cost avoidance

Since 2007, AutoZone's energy improvement strategy has resulted in reduced energy usage of more than 1.35B kilowatt hours, resulting in millions of dollars in energy cost avoidance through its Fiscal Year 2018. In addition, AutoZone currently saves an average of 30 percent annually on its energy costs compared to not having an energy management system, resulting in a savings of millions of dollars per year. As well, AutoZone aggressively pursues all available state and utility rebates for energy-saving projects.

About Venstar

Founded in 1992, Venstar Inc. is a leading thermostat and energy management system (EMS) manufacturer, known for providing value to its customers via ease of use and installation, proven cost savings, improved energy efficiency, quality and reliability. Venstar is one of the largest thermostat suppliers in the world and designs and produces Venstar-branded products as well as OEM thermostat products for the biggest names in HVAC.

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