



## CENTRALIZED ENERGY MONITORING HELPS MACY'S IMPROVE BUILDING PERFORMANCE

### SOLUTION OVERVIEW

Energy had always been managed separately within the legacy divisions of Macy's. Despite great success reducing energy under a decentralized model, hurdles existed to implementing deeper energy management strategies. For example, the divisions maintained their own separate energy standards, were inconsistent across the entire portfolio.

In 2009, Macy's consolidated its general operations and centralized the control and standardization of operating parameters for the company, including creation of a Central Energy Management Team (CEM Team) and implementation of a comprehensive integrated energy management strategy. This centralization was a catalyst to develop more robust energy management tools in-house and to invest in systems that could be leveraged to assist in energy management efforts across the portfolio.

One of the tools Macy's developed was a centralized real-time energy management system, which provides a far more detailed view of energy use at each store than monthly utility bills. Through careful analysis of real-time usage information and close collaboration with field staff at individual facilities, Macy's has seen significant reductions in energy use across their building portfolio.

### ORGANIZATION TYPE

Retail

### BARRIER

Decentralized energy management structure, building staff lack building-level information about energy performance

### SOLUTION

Implement a centralized real-time energy management system and weekly coordination calls with field staff to address energy issues

### OUTCOME

Quick discovery and correction of equipment- and occupant-related energy use issues, increased engagement of field staff around energy efficiency, energy savings on average of 2-3% due to real-time energy management program

## **POLICIES**

A bottom-ups approach to building the budget is critical to defining the energy goals and objectives. This also allows Macy's to strategically focus on areas of opportunity for energy efficiency.

## **PROCESS**

Macy's real-time tool accesses building automation data from each store and displays energy load curves by location at 15 minute intervals. The load curves can reveal very granular performance and operational issues at each store, such as display lights and escalators not turned off at night or malfunctioning variable frequency drives (VFDs). The CEM Team carefully analyzes load curves generated for each store location and develops weekly reports for field staff in each national region, outlining issues and potential solutions.

The CEM Team holds weekly energy calls with the field engineers for each region to coordinate resolution of the issues identified through the load curve analysis. In this manner maintenance and operational problems that might never be discovered through monthly utility bill reviews become visible and can be resolved almost immediately. Field staff can log in online to view load curves for individual stores and address issues proactively, but the CEM Team provides a consistent and dedicated analysis of building data. The CEM Team benefits from the portfolio-wide view of the load curves -- once a load curve anomaly is isolated and repaired for one store location, it is easier to recognize in the load curves of other stores, and quickly resolve. In many cases, energy reductions from a fix to a small issue in a single store are small. "We are chasing 2 kilowatts at times," says Bill Lyon, Macy's Vice President of Energy Management, "but 800 locations add up."

Each Macy's store is allotted an energy budget (in kWh), which is a stretch goal for the store based on the previous year's energy performance, planned upgrades, and expectations for continuous improvement. The weekly energy calls also provide an opportunity to review store energy use against the budgets, coordinate on specific energy efficiency upgrades in the stores, and ensure corporate energy policies and standards are maintained and achieved.

## **OUTREACH**

Internally, Macy's weekly energy calls are a very successful form of outreach. The calls are supplemented by weekly load curve reports for each region, as well as the energy budget report, noting if locations are "in the black" or "in the red" for the year-to-date based on their annual energy budget. Field staff who are able to maintain their stores' energy use "in the black" are rewarded through positive performance evaluations and financial incentives.

The CEM Team also reaches out to store-line associates through a store-level sustainability

scorecard, focused on energy, which is posted in a common staff work area. The scorecard profiles energy performance on a monthly and year-to-date basis and creates friendly competition between stores. Stores work hard to stay off the bottom of the list ranked by energy performance (kWh/sf).

Macy's has participated in the Carbon Disclosure Project and promotes awareness and participation of sustainable and energy reducing efforts through the Macy's [Green Living website](#).

## **TOOLS AND RESOURCES**

Macy's has built their own tool to support their real-time energy management efforts. There are also numerous third-party offerings.

Once a real-time energy management tool (third-party or in-house) is in place, it's up to organizations to use the information provided to address energy efficiency issues effectively. Macy's has provided the following tools which support their weekly energy calls with field staff: Simple load shapes, TY vs. LY comparisons.

## **OUTCOMES**

Macy's has reduced energy use, on a use per square-foot intensity level, by over 19 percent from 2010 levels through 2015, recognizing that the company has already reduced total energy use by 19 percent from 2003 to 2009.

## **MEASURING SUCCESS**

Macy's achieves, on average, about 2-3% energy savings from the energy information system. The other savings come from lighting retrofits, installation of variable speed drives, EMS upgrades, and retro-commissioning of buildings.

