



Getting Greener

Retailers and suppliers are taking energy conservation seriously.

By Bob Ingram

Today's food shopper increasingly sees sustainability as a mark of good corporate citizenship in choosing a retailer, and supermarkets are responding accordingly.

It makes economic sense, too.

"Since 2008, we've reduced our company's greenhouse emissions by 22 percent — four years ahead of schedule," says John Lerch, director of energy and facilities at Weis Markets, in Sunbury, Pa. The company's overall goal is to reduce energy usage by 3 percent annually.

Weis has a handful of stores with 100 percent LED lighting and an aggressive program to increase LED lighting in remodels, as well as specifying LED lighting for all new stores, Lerch says.

"To conserve energy, many of our stores have dimming modules in specific sales-area lighting, and motion sensors in back-room and cooler and freezer

locations," Lerch says. New stores use skylights and dimming to harvest daylight and reduce energy use.

Weis' new refrigerated dairy cases have doors, and in new stores all medium-temperature dairy, cold, meat and bagged salad cases have doors, all cases are required to have LED lighting, and motion sensors on specific cases, he adds.

HVAC equipment is highly advanced, and along with state-of-the-art energy management systems, reduces and manages Weis' utility costs, Lerch observes, adding that the company recently received EPA's GreenChill award for reducing refrigerant leak rates, achieved through advanced equipment.

The company also has an Energy Awareness Program for associates, he notes.

Redner's Markets, in Reading, Pa., is saving \$3,000 to \$5,000 monthly, according to Eric White, director of marketing, by converting to LED

Continued on page 92 >



SMART STORE
Danfoss' AK-SM88o System Manager can oversee an entire supermarket.

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 Markets

► *Continued from page 89*

lighting when possible and upgrading to the latest HVAC and refrigeration controllers, in combination with new cases, to reduce electric consumption.

“We have been taking a serious look into energy procurement through a variety of initiatives,” White says. Redner's has recently piloted two stores with Grind2energy to ship in-store organic waste to local anaerobic digestion plants that create “huge emissions savings” by using biogas to either produce energy from waste or as transport fuel.

In Pittsburgh, Giant Eagle spokeswoman Jannah Jablonski says that the grocer has LED lighting in select in-store areas, paired with motion sensors, and that the majority of locations have been retro-commissioned to ensure that systems like refrigeration, HVAC and lighting are at maximum efficiency.

In Cleveland and Columbus, Ohio, Giant Eagle's open dairy cases have been retrofitted with doors to save energy, and across the company LED lighting has been installed in back rooms and stock areas, Jablonski notes, adding that “we are exploring various control strategies as we pilot different LED technologies for our main sales floor. We continue to evaluate opportunities to operate as sustainably as

possible, and are planning for the next iteration of retro-commissioning.”

James McCaffrey IV, EVP at six-store McCaffrey's Food Markets, based in Langhorne, Pa., notes that a company-wide “building green” initiative in 2011 and 2012 resulted in the replacement of most refrigerated display cases and the installation of variable-speed, high-efficiency compressors, as well as LED case lighting.

Stores built or remodeled since then have followed suit, and three stores are now 100 percent LED, with the LED lighting project at the Yardley, Pa., store netting about 9 percent electricity savings, according to McCaffrey, who says, “All of these projects were published to our customer base as part of our commitment to the environment.”

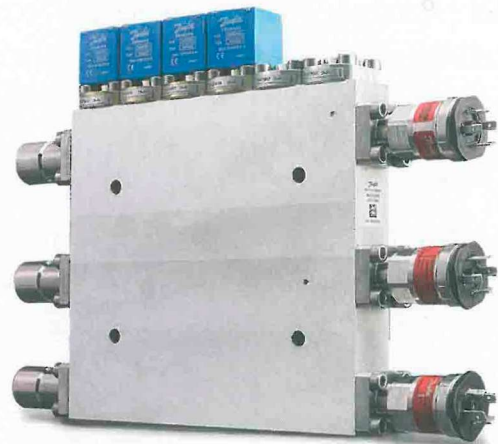
At Boyer's Food Markets, in Orwigsburg, Pa., co-owner and Real Estate VP John Boyer says that energy-saving projects include LED lighting and energy-efficient fans, motors and anti-sweat heaters.

“Results have been great,” he notes, “with most paybacks in the two-to-four-year range, with help from PPL [Electric Utilities] rebates.”

Boyer's newest store and its latest remodels have used all energy-efficient equipment and lighting, according to Boyer, and “the results have been tremendous on a kilowatt-per-square-foot basis. Customers are looking for social responsibility from the places where they shop and seem to appreciate our efforts in that direction.”

Supplier Side

As for suppliers of sustainable supermarket equipment, Dean Landeche, VP of marketing for retail solutions at Emerson Commercial and Residential Solutions,



INCREASED ENERGY

Danfoss is testing the CTM Multi Ejector to increase CO₂ systems' energy.

in Kennesaw, Ga., says that Emerson's ProAct Services provide retailers with remote monitoring services that collect data from sensors that monitor conditions like product and case temperatures.

ProAct's Alarm Management monitors various factors and provides alerts when a potential system issue is detected, which can help save energy and prevent food loss, he says, while Energy Monitoring and Targeting use meter-level data to model energy performance across an enterprise of stores.

Additionally, Setpoint Management helps retailers sustain long-term energy savings while ensuring that issues are actually fixed, not masked. Further, Landeche says that Emerson's Demand Response Service increases sustainability by reducing power usage at times when demand on the electric power grid is high.

At Trane, in Davidson, N.C., Greg DuChane, director of retail-restaurant national accounts, notes that Trane eFlex is a high-efficiency technology used in Trane Voyager Rooftop units that provide variable-speed technology allowing for matching unit capacity to the varying load, which improves efficiency in part-load conditions.

"A building automation system [BAS] like Trane Tracer Concierge allows for precisely controlled store conditions," he says, "crucial to preventing product damage and spoilage, which contributes to the sustainable operation of a store."

The system can be combined with Trane Air-Fi Wireless technology, DuChane says, to create a BAS that's more feasible for small to medium building applications.

DuChane also points out that Trane provides customers with a building automation and controls portfolio, as well as the Trane Building Advantage portfolio for energy services and solutions.

According to James Knudsen, North America food retail segment leader at Danfoss A/S, in Cataula, Ga., the AK-SM880 System Manager, known as the "Smart Store," is designed to manage an entire supermarket system.

"Looking out from this Smart Store management solution," he says, "Danfoss provides supervisory controls for racks, cases, lighting, and even solutions built to coordinate the HVAC system. Collectively, they are known as the Danfoss Enterprise Services."



SUS-TRANE-ABLE
Trane's rooftop Voyager, above, and Tracer Concierge, left, both save energy.

Looking inward, Knudsen says, the Systems Manager 880 coordinates with Danfoss' broad line of controls for energy savings and food safety.

"Danfoss is currently testing the CTM Multi Ejector to increase the energy efficiency of parallel trans-critical CO₂ systems to where they are more energy efficient than HFC [hydrofluorocarbon] systems in any climate," he notes, "eliminating the need for different solutions in different climates and delivering a truly sustainable solution."

In Austin, Texas, Dan Kubala, director of business development for the retail and commercial systems group at Siemens' building technologies division, says that the core Site Controls system combines an on-site network appliance, installation services, energy advisory services and cloud-based data analytics to reduce energy-use emissions through monitoring and/or control of key power-consuming equipment such as HVAC, lighting and refrigeration.

He adds that Batavia, Ill.-based Aldi US deploys the Site Controls platform across nearly 1,500 of its stores and anticipates reducing carbon emissions by an additional 29,000 metric tons per year — the equivalent of removing 6,100 cars from the road or providing electricity for 4,000 homes.

"Such investments that deliver both financial and environmental gains," Kubala observes, "are popular because they are sustainable in the truest sense of the word — they help protect the planet while aligning with the business goal of delivering profitable growth for shareholders." **PG**

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