

Fresh & Easy Reduces Gas and Electricity Expenditures by Retrofitting Open Refrigerated Display Cases with Doors

During the period from September 2010 to April 2012, the Western United States retailer Fresh & Easy Neighborhood Market took the step of implementing display door retrofits on almost 30,000 linear feet of open medium-temperature display case in 174 of its California, Arizona, and Nevada stores. Since the completion of its retrofit projects, Fresh & Easy has enjoyed significant gas and electricity savings at the stores where doors were installed. This case study, sponsored by the U.S. Department of Energy, discusses the motivation, implementation, and results of Fresh & Easy's case retrofit program.

Seeking Cost-Effective Energy Solutions

Ever since opening its first stores in the Western U.S. in 2007, Fresh & Easy has placed a focus on being a leader in energy efficiency and sustainability within the food retail industry. The need to balance this desire with the realities of the tight-margin grocery business drove the company to seek energy-saving solutions which were also cost-effective.

Angus McGill, Property Services Director for Fresh & Easy, stated that open case retrofits were a natural fit with the company's emphasis on building green stores. From a financial perspective, the anticipated payback period of around four years made these retrofits an economically sound and energy efficient solution.



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A Companywide Plan

Motivated by the desire to cut its stores' utility costs, run an environmentally friendly business, and provide the highest quality product to its customers, Fresh & Easy worked with REMIS America (a manufacturer and installer of retrofit kits) and Enreps (a commissioning and energy management consultant) to design and implement a plan to install doors on open medium temperature cases across its stores.

Fresh & Easy first piloted the technology in a few stores starting in September 2010. After experimenting with different door designs, soliciting customer feedback, and collecting data on the performance of the refrigeration systems after retrofits were conducted, Fresh & Easy decided, based on these positive early results, to roll the technology out companywide.

By installing similar equipment across the range of their stores, Fresh & Easy was able to learn from its first experiences and apply that knowledge to the jobs later in the process. For example, an ambitious plan was initially followed in which doors were installed on all the cases in a store in a single night. However, Fresh & Easy found that the sudden, dramatic reduction in refrigeration load caused issues with the compressor racks, which were not able to adjust

Project Benefits

Many owners, operators, and managers of retail food sales and foodservice establishments are discovering the many benefits of retrofitting transparent display doors onto existing open refrigerated display cases.

For much less than the cost of replacing the existing cases with new ones, operators can install transparent display doors which significantly reduce the interchange of cold refrigerated air inside the case with the conditioned air of the store environment.

Case retrofits can reduce heat loads on the refrigeration system by 50-80%, resulting in notable electricity savings. By reducing the amount of cold air that escapes into the store, retrofits additionally bring operators significant reductions in gas expenditures for space heating during the heating season.

Adding doors to open cases can also yield additional non-energy benefits for operators, including greater control over case temperatures, reduction in product loss, and increased customer comfort.

quickly enough. By splitting the work into two nights, adjustments could be made to the refrigeration system after the first night, ensuring a smoother transition.

Incentives Provided Significant Financial Support

During the planning of the retrofit projects, Fresh & Easy and their contractors worked extensively with local and regional utilities to obtain rebates for their open case retrofits. Working in conjunction with utility providers spanning three states, Fresh & Easy was able to obtain electric utility rebates sufficient to offset roughly 10% of the up-front project cost. Fresh & Easy stated that, while this measure was financially viable without rebates, the existence of incentives made deployment of the technology an almost irresistible opportunity.

Storewide Electricity Usage

Store	Year-Over-Year Change
Main & Chapman, Orange, CA	-16.1%
Trautwein & Bountiful, Riverside, CA	-23.2%

Storewide Gas Usage

Store	Year-Over-Year Change
Glassel Park, Los Angeles, CA	-56.9%
Main & Chapman, Orange, CA	-60.5%
Trautwein & Bountiful, Riverside, CA	-65.4%



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Verified Electricity and Gas Savings

Fresh & Easy’s engineering contractor monitored the stores’ natural gas and electricity consumption after the retrofits, and was able to compare that data to pre-existing meter data from before the projects to show the clear savings benefit of retrofits. Fresh & Easy provided data from several of their stores to the DOE and SCG for use in this case study as examples to illustrate savings potential.

Satisfied Owners and Customers

Now, over a year after the completion of its retrofit projects, Fresh & Easy has been very satisfied with the results across the chain. They have not only met, but have in fact exceeded, their energy savings goals.

In addition to reducing the energy impact of Fresh & Easy’s stores, the retrofits applied to existing open cases also resulted in additional benefits for the operators and customers. These include improved customer comfort due to warmer aisles, and a positive perception of product quality by customers. Additionally, Fresh & Easy has enjoyed more consistency in product integrity and reduced product loss due to tighter temperature control within the cases.

Program Features

Through the Better Buildings Alliance, members in different market sectors work with the U.S. Department of Energy’s (DOE) exceptional network of research and technical experts to develop and deploy innovative, cost-effective, energy-saving solutions that lead to better technologies, more profitable businesses, and better buildings in which we work, shop, eat, stay, and learn. Join today to start saving energy in your commercial buildings.

BBA Refrigeration Project Team members work to improve the efficiency of new refrigeration systems and components, including display cases, coolers and freezers, compressor systems, and controls. Members also focus on improving the energy efficiency of existing refrigeration systems through operational procedures or retrofit options. Members of this team represent many of the nation’s most energy-innovative companies with large-scale refrigeration loads.

Project Partners

Fresh & Easy Neighborhood Market
<http://www.freshandeasy.com/>

REMIS America, LLC.
<http://www.remisamerica.com/>

Enreps, LLC.
www.enreps.com

“The overall experience has been very positive. I feel that our experience has convinced many people, both internal and external, of the benefit associated with glass door retrofits.”

– Angus McGill, Property Services Director