

# The Energy Tax Aspects of Supermarkets

*By Charles Goulding, Robert Goulding and Raymond Kumar*

Charles Goulding, Robert Goulding and Raymond Kumar discuss the energy management of supermarkets, including the availability of tax incentives.

**E**nergy costs are very high for supermarkets (compared with other boxed structures, measured on a cubic footage basis) because supermarkets

- have all the normal building energy operating costs;
- typically operate seven days a week for long hours; and
- have the added energy cost of refrigeration for coolers and freezers.

Supermarkets can benefit from a variety of today's energy-saving products, coupled with state rebates and utility rebates, along with federal tax incentives to greatly reduce their operating costs. Tax advisers for supermarkets can work closely as a team with operating management, facilities managers and energy departments to achieve these operating cost reductions.

## Lighting

Supermarkets incur high lighting electricity costs both for basic store use and for presenting food products. Supermarkets can upgrade existing center store-basic vertical aisle lighting to create energy efficient lighting eligible for large tax savings. Supermarkets can obtain additional energy savings by installing rooftop

skylights over store aisles since daylight hours are always part of the stores' operating day. A supermarket can use skylights and daylighting sensors to dim or to shut off electrical lighting based on the level of daylight illuminating the aisles.

Outside the core center store selling area, supermarkets actually become very complicated spaces since each of the specialized departments such as produce, deli, meat, bakery and dairy all have specialized lighting needs. A standard supermarket has a back of the house (behind the main selling floor) used for delivery, storage and administrative offices. Supermarkets can typically use very energy efficient standard lighting products to upgrade these rooms.

Supermarkets can use two alternative methods for achieving Energy Policy Act (EPAct) Code Sec. 179D lighting tax deductions of up to 60 cents per square foot.<sup>1</sup>

1. Using the prescriptive method, the supermarket needs to reduce the lighting watts per square foot in each space (room with four floor-to-ceiling walls) by at least 25 percent as compared to the ASHRAE 2001 building energy code to begin getting tax deduction at the 30-cent-per-square-foot level. The full tax deduction of 60 cents per square foot is available when there is a 40-percent wattage reduction, which supermarkets generally achieve if they upgrade the entire selling floor lighting with a focus on the required Code Sec. 179D wattage targets.
2. Alternatively, supermarkets can use the IRS-approved energy modeling method for lighting. This modeling method produces more favorable

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results for supermarkets with day lighting systems, skylights, lighting control systems and building management systems with a lighting controls component. The supermarket must use an IRS-approved energy modeling software to obtain the tax deduction. Supermarkets that combine very efficient lighting with skylights will often qualify for a \$1.20 combined lighting and building envelope tax deduction, since the Code Sec. 179D building envelope deduction only requires a 10-percent energy cost reduction compared to ASHRAE 2001.

## Refrigeration

A supermarket can minimize the substantial refrigeration energy costs related to coolers and freezers. These coolers and freezers are commonly called cases. Modern freezers and coolers use substantially less energy than prior generation equipment because of greatly improved compressor technology and other enhancements, particularly with centralized store systems. Most importantly, the lighting in today's refrigeration cases is much more energy efficient since converting from heat-based lighting to cool-environment lighting such as fiber optics and LEDs (Light Emitting Diodes). Before the advent of this cool-temperature lighting, supermarkets incurred additional energy costs for cooling merely to overcome the heat generated by the case lighting before even beginning to perform their core cooling function.

Tax professionals who are interested in these energy efficient refrigeration opportunities should study the websites of the two major equipment suppliers which are:

1. The Hill Phoenix subsidiary of Dover Corporation ([www.hillphoenix.com](http://www.hillphoenix.com)), and
2. The Hussmann subsidiary of Ingersoll Rand ([www.hussmann.com](http://www.hussmann.com))

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## Heating, Ventilation and Air Conditioning (HVAC)

Supermarket tax departments should give strong consideration to having their most energy efficient stores modeled in IRS-approved software. Code Sec. 179D EAct deductions for HVAC and the building envelope must be supported by an IRS-approved model. Many state and utility programs will provide for some or all of the energy modeling costs when a supermarket is contemplating an HVAC or other major energy reducing system upgrade. Once a supermarket chain has their most energy-efficient prototype modeled they can use that result as a beta to plan into \$1.80 per square foot EAct tax deductions for all stores.

There are a variety of supermarket HVAC techniques that can materially reduce energy costs including heat recovery ventilation, energy recovery ventilation and demand control ventilation.

It is particularly important for supermarkets to manage humidity control since humidity can cause refrigeration systems to develop condensation

on display doors and frost buildup. Economizer units can be added to provide free cooling during spring and fall or on cool summer nights when the humidity level is not too high. Because supermarkets have so many different energy consuming systems, it is crucial to have a centralized energy management system.

## Large Non-Store Spaces Present Greater Tax Opportunities

Many supermarket chains have additional large nonretail store buildings, including non-

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**Chart 1**

Combined Rebate Example						
Project Type	Project Cost	Single Rebate %	Single Measure Rebate	Combined Measure Enhancement Rebate	Combined Measure Rebate	
Lighting	\$ 100,000	30%	\$ 30,000	40%	\$ 40,000	
HVAC	\$ 200,000	30%	\$ 60,000	40%	\$ 80,000	
Total	\$ 300,000		\$ 90,000		\$ 120,000	

there is no EAct tax deduction. Supermarkets contemplating warehouse lighting upgrades should consult with tax advisers familiar with warehouse lighting tax planning, including issues involving mezzanine floors, pick and pack modules and nonwarehouse subspaces. Food processing centers with energy-efficient lighting generally qualify for very large EAct lighting tax deductions.

## **LEED Supermarket Facilities**

LEED stands for Leadership in Environmental and Energy Design and is the marquee standard for a sustainable building. There are four levels of LEED accomplishment with platinum being the highest level followed by gold, silver and LEED certified. The LEED system is administered by the United States Green Building Council (USGBC). Recently, the first platinum-certified LEED supermarket in the United States was awarded to the Hannaford supermarket chain in Augusta, Maine. This state-of-the-art facility, which uses 50-percent less energy than a typical supermarket and almost 40-percent less water, also functions as a laboratory for Hannaford that will continue to experiment with new energy-reducing innovations on behalf of their entire store chain. The LEED system provides LEED award points for water reduction, but water reduction is not eligible for EAct tax deductions.

For tax purposes, a major advantage of LEED supermarkets is that they already have a required LEED building energy simulation model that can be converted to an IRS-compliant EAct model, which will support tax deductions.

Presuming that when modeled for EAct, the Hannaford supermarket has also achieved a 50-percent energy cost reduction compared to ASHRAE 2001, it may potentially qualify for the full \$1.80 per square foot Code Sec. 179D EAct tax deduction. As it stands, this LEED certified grocery store, the first of its breed to attain the platinum designation, features a 7,000 square foot green roof, geothermal heating and cooling, and interior daylight harvesting capabilities, among numerous other technologies.<sup>2</sup>

Recently, the Price Chopper supermarkets opened one of the nation's most environmentally friendly food stores in Colonie, NY. Some of the energy efficient measures used in the store are the use of natural lighting, recycling more than 75 percent of construction waste and using state-of-the-art refrigeration equipment. The 69,000 square foot facility also uses fuel cell technology to generate the power needs of the store.<sup>3</sup>

The first supermarket to achieve LEED status was the Giant Eagle supermarket in Ohio in 2004. Since then, Giant Eagle has also unveiled the first LEED silver and gold certified stores in April 2007 and October 2008, respectively.<sup>4</sup>

## **Combined Measure State and Utility Rebate Planning**

It is particularly important for supermarkets to consider seeking combined measure utility rebates. Many utilities will provide an enhanced rebate for what are called multiple energy reduction measures. For example, let's presume that for qualifying energy efficient

### **Supermarkets**

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conditioned (no HVAC) and conditioned warehouses and often food processing centers. Warehouses are the only Code Sec. 179D lighting category where a tax deduction is "all or nothing," meaning that the facility either needs to qualify for the 60-cent lighting tax deduction or

equipment, a standard lighting rebate from a particular utility is 30 percent of the purchase price and likewise 30 percent for energy-efficient HVAC. The utility might offer an enhanced rebate of an additional 10 percent. In this example, each rebate will increase by 10 percent to 40 percent for each measure. Chart 1 illustrates how combined measure rebates work, using an example project where new lighting costs \$100,000 and new HVAC costs \$200,000.

In the example, because the building owner applied for a combined measure rebate, the utility rebate was increased by \$30,000 (from \$90,000 to \$120,000).

Since supermarkets require so many different kinds of energy-related equipment, it is crucial for supermarkets to use utility rebate planning coupled with tax planning to enhance energy-reducing investments economic payback outlays and minimize energy-related operating costs.

## Conclusion

Since supermarkets are the highest energy cost commercial building category, store energy, construction and facility managers have tremendous energy cost savings opportunities. The nation's first LEED platinum supermarket can serve not only as laboratory for its own supermarket chain but for the rest of the supermarket industry. Tax professionals that understand utility rebate planning and energy tax incentives can help support the desired energy reduction investment.

### ENDNOTES

<sup>1</sup> Energy Policy Act of 2005 (P.L. 109-58).

<sup>2</sup> Frank Robbins, *Maine Supermarket Gets LEED Platinum*, Jetsongreen.com. Aug.

4, 2009. Available at [www.jetsongreen.com/2009/08/maine-hannaford-supermarket-gets-leed-platinum.html](http://www.jetsongreen.com/2009/08/maine-hannaford-supermarket-gets-leed-platinum.html).

<sup>3</sup> Air Conditioning, Heating, & Refrigeration News, *New LEED Store Will Be First LEED Certified Supermarket in NY*, Air Conditioning, Heating, & Refrigeration News, Jan. 19, 2009. Available at [www.achrnews.com/Articles/Manufacturer\\_Reports/BNP\\_GUID\\_9-5-2006\\_A\\_1000000000000508114](http://www.achrnews.com/Articles/Manufacturer_Reports/BNP_GUID_9-5-2006_A_1000000000000508114).

<sup>4</sup> Smart Brief Newswire, *Giant Eagle Columbus Supermarket Becomes LEED Gold(R)—Certified*, Smart Brief, Sep. 29, 2008. Available at [www.smart-brief.com/news/aaaa/industryPR-detail.jsp?id=7F1A7E49-42FE-496E-B550-2A4A36EFB2F1](http://www.smart-brief.com/news/aaaa/industryPR-detail.jsp?id=7F1A7E49-42FE-496E-B550-2A4A36EFB2F1).