

# solutions

From Shop Floor to Top Floor:

**Best Business Practices**

+

in **Energy Efficiency**

+

+

*by*

*William R. Prindle*  
ICF INTERNATIONAL



PEW CENTER

ON

Global CLIMATE CHANGE

# CASE STUDY

## Best Buy Products and Services

<b>Headquarters:</b>	Richfield, MN
<b>CEO:</b>	Brian J. Dunn
<b>Revenues (2007):</b>	\$36 billion
<b>Energy Costs (2007):</b>	More than \$100 million
<b>Energy Savings Target:</b>	Best Buy, in partnership with the EPA Climate Leaders program, set a carbon dioxide (CO <sub>2</sub> ) emissions reduction goal of 8 percent per retail square foot by 2012, using 2005 as a base year.
<b>Key Efficiency Strategy Successes:</b>	<ul style="list-style-type: none"><li>• In 2008, Best Buy's sales of ENERGY STAR qualified products resulted in customer savings of over 785 million kilowatt hours of energy, equal to about \$90 million in electric utility bill savings, while preventing over 600,000 tons of CO<sub>2</sub> from entering the atmosphere;</li><li>• Earning 2008 ENERGY STAR® Excellence in Appliance Retailing Award; and 2009 ENERGY STAR Excellence in Appliance &amp; Consumer Electronics Retailing Award;</li><li>• Expanding efficiency strategy to encompass smart grid technologies and electric vehicles;</li><li>• Using Leadership in Energy &amp; Environmental Design (LEED®) rating system for new stores;</li><li>• Applying ENERGY STAR labeling to drive efficiency gains in the supply chain.</li></ul>

### Best Buy Overview

Best Buy works hard to stay close to its customers, employing some 160,000 people in over 1,000 stores in the U.S., plus some 2,500 in Europe and 170 in China (overseas operations are mainly under other company brands via acquisition). As a retailer, Best Buy interacts directly with consumers and over the years has strengthened its efforts to promote products that conserve energy. It does this mainly through its partnership with EPA's ENERGY STAR program, as well as its initiative to help consumers choose more energy efficient products, use those products more efficiently at home, and then recycle the products in the safest way possible. Going forward Best Buy is rolling out new green and energy-efficient products and services, including home energy management and renewable energy systems that take advantage of technological shifts and the growing interconnectedness of consumer electronics and appliances.

This case study focuses on Best Buy's efforts to promote more energy efficient products and services. As a retailer, the majority of Best Buy's energy and carbon footprint resides in the use phase of the products it sells,

as opposed to inside its own stores, or in the product manufacturing phase. But the company's energy efficiency strategy also illustrates the interrelatedness of efforts to reduce energy use in internal operations, the supply chain, and products and services. As a consumer-facing company with a very visible retail store and online sales presence, and a large, ongoing consumer advertising effort, Best Buy must stay very close to its customers, their in-store experience, what they buy, how they use the products, what they think of the products, and of the company itself. This pushes the focus of the company's energy efficiency strategy toward its customers and the products they buy. But Best Buy's supply chain strategy also adopts key features of its product and service strategy. In the consumer marketplace, the company uses co-branding methods through programs like ENERGY STAR and EPEAT<sup>®1</sup> to support both product sales and supply chain strategies: the more consumers demand ENERGY STAR qualified products, the easier it is to encourage Best Buy product partners to make them.

At the same time, Best Buy has invested time and resources into setting an internal CO<sub>2</sub> reduction goal of 8 percent per retail square foot by 2012, measured against a 2005 baseline. Best Buy plans to meet the goal through energy efficiency improvements in existing stores and by building new stores to LEED standards. The company's internal operations strategy is driven by a desire to "walk-the-talk" and demonstrate to its customers and employees that it is taking a leadership role in sustainability.

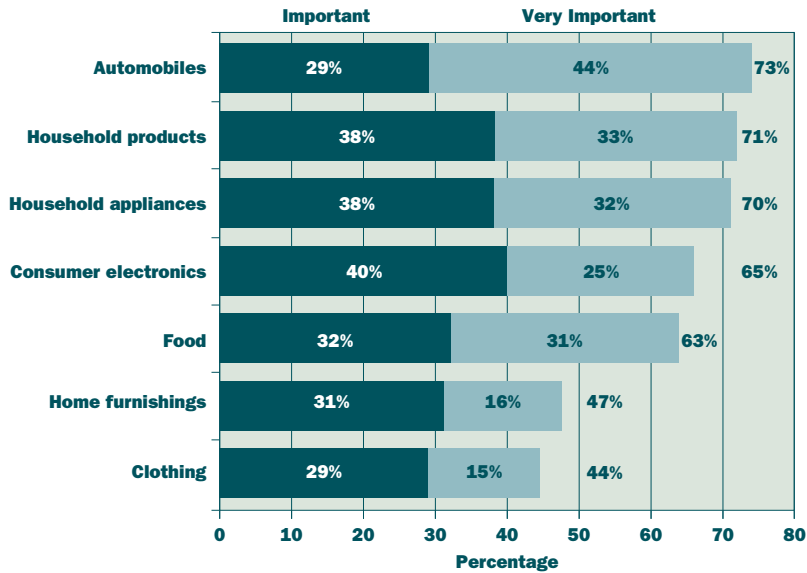
Best Buy's commitment to emphasizing energy efficiency and other green attributes in the products it sells are driven by three main forces:

- The growing consumer demand for environmentally friendly products—Best Buy is attuned to providing the products customers want;
- The business growth and profit potential from "green" products;
- The company's commitment to reducing its environmental footprint, while its employees help customers make smarter technology choices as the digitally-connected world expands.

<sup>1</sup> EPEAT is a system that helps purchasers evaluate certain electronics products based on a series of environmental criteria. More information on EPEAT can be found here: <http://www.epeat.net/>.

**Figure 1**

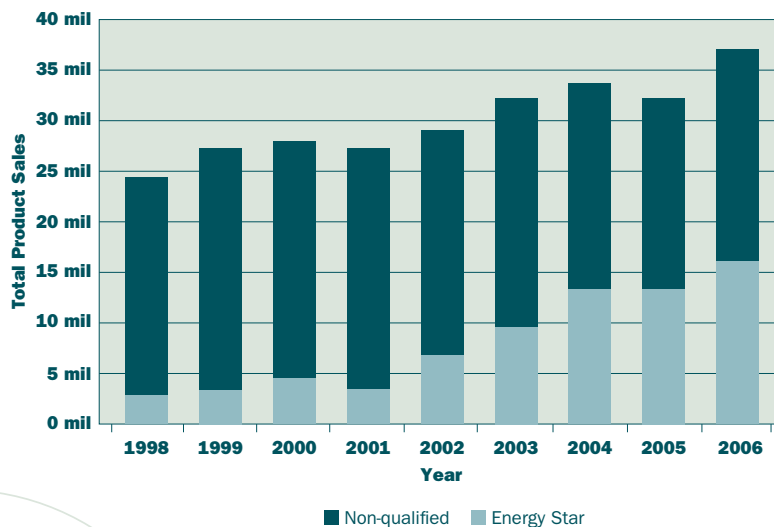
Product Types for Which **Green Attributes** are Important



Recreated based on image provided courtesy of CEA (2008).

**Figure 2**

+ **Energy Star** Appliance Market Share is Growing



Recreated based on image provided courtesy of Department of Energy (2006).

## Market Trends

Research by the Consumer Electronics Association (CEA) shows that consumers are looking for green attributes in home appliances and consumer electronics. While there is typically a gap between consumer preference statistics and their buying behavior, in the energy efficiency market ENERGY STAR qualified product sales have gained substantial market share.

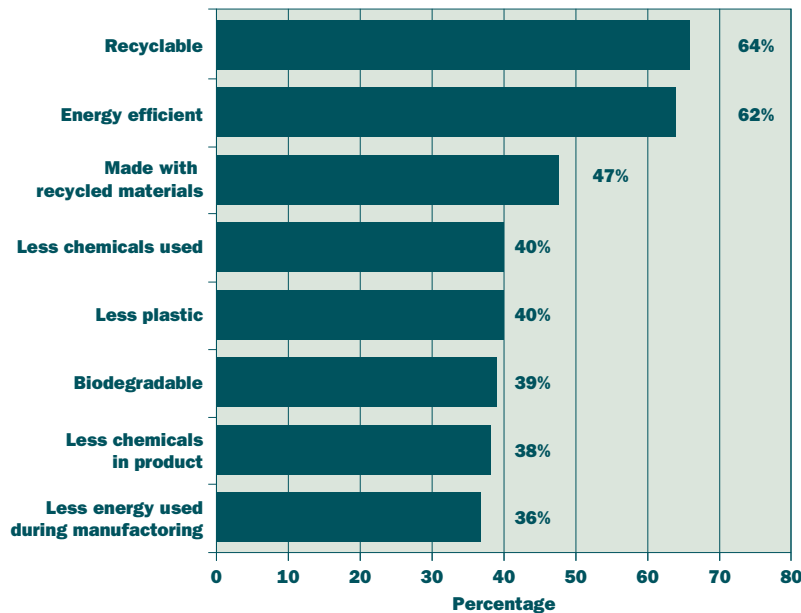
**Figure 1** shows the CEA data, while **Figure 2** shows Department of Energy data on the growing market share for ENERGY STAR qualified products.

CEA research also reveals the specific attributes consumers recognize most often as green, demonstrated in **Figure 3**.

Taken together, the research shows a clear business case behind Best Buy's efforts to sell more energy-efficient products. Consumers want the

**Figure 3**

### Attributes Associated with **Green Consumer** Electronics Products



Recreated based on image provided courtesy CEA (2008).

products Best Buy sells to have environmentally friendly attributes, and the top two environmental attributes valued by consumers are recycling and energy efficiency. This helps explain why efficiency—as branded through ENERGY STAR—and recycling—as the company’s newest customer offering—are two of Best Buy’s most visible sustainability efforts. It also helps explain Best Buy’s initiative to step up energy efficiency and recycling training and promotion efforts among sales staff, as well as the electronic waste (e-waste) recycling program that was expanded to all U.S. stores in February 2009. Best Buy’s overall sustainability initiative encompasses recycling for technology products, the effort to bring more energy-efficient products and packaging into the market, reduction of Best Buy’s internal carbon footprint, and building new stores to meet green building standards. It also makes it easier for customers to choose “greener” products, helps customers use electronic products more efficiently, and offers more convenient ways to recycle and trade in products.

Because Best Buy takes its cues from its customers, it also invests a lot in its own customer research. One of the key issues its research investigates is the way customers perceive environmental issues. **Figure 4** shows a key distinction between “my environment”—the products and actions customers feel directly connected to and able to act on—and “the environment”—the more abstract ideas that customers connect to only indirectly or under certain conditions.

This kind of research informs Best Buy’s strategy to sell products that connect on the “my environment” level, while making a secondary connection with “the environment.” However, Best Buy’s proprietary customer research shows that most customers have had little or no awareness of Best Buy’s environmental efforts, even

Figure 4

### Consumer Definition of “My” Environment vs “The” Environment



Recreated based on data provided courtesy of Best Buy (2009).

though they want environmental information on products, and state that that information would make a difference in terms of their purchasing decisions. Partly in response to the low customer awareness, Best Buy has created the Greener Together initiative, which includes its recycling program, and is experimenting with “Green Zone” store layouts featuring green products in a single themed location. These initiatives are further described below.

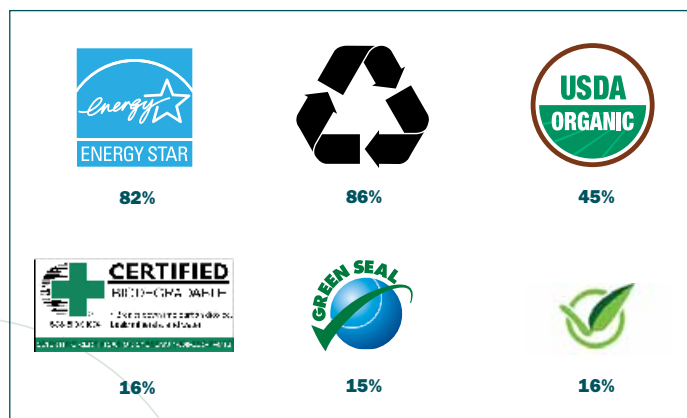
## ENERGY STAR Partnership

The gap between customers’ limited awareness of Best Buy’s environmental commitments, and their desire for environmental guidance in buying products also helped motivate Best Buy’s vigorous involvement with third-party programs like ENERGY STAR. The ENERGY STAR brand enjoys among the highest consumer recognition rates of any

environmental brand (see **Figure 5**) and the federal government sponsorship gives it an official sense of credibility.

Figure 5

### Brand Recognition: % of Consumers That Have Seen the Following Logos



Recreated based on image provided courtesy of CEA (2008).

Illustrating the growth opportunities and profit potential it sees from green products, Best Buy has become one of the most active ENERGY STAR retailer partners.

**Table 1** summarizes the environmental and financial benefits derived from sales of ENERGY STAR products from Best Buy stores in 2008.

Table 1

## Best Buy's 2008 Energy Star

## Product Benefits

	Energy Savings (kWh/yr)	Carbon Savings (lbs CO <sub>2</sub> /yr)	\$ Savings
TVs	278,124,132	428,311,163	\$29,453,346
DVDs	11,502,642	17,714,069	\$1,218,130
Digital-to-analog converters	37,126,170	57,174,302	\$3,931,661
Receivers	3,835,525	5,906,709	\$406,182
Home theaters	270,419	416,445	\$28,637
Battery chargers	536,658	826,453	\$56,832
Desktop computers	117,943,425	181,632,875	\$12,490,209
Laptop computers	42,957,024	66,153,817	\$4,549,149
Monitors	60,341,952	92,926,606	\$6,390,213
Printers & multi-function devices	174,530,849	268,777,507	\$18,482,817
Telephones	19,620,023	30,214,835	\$2,077,760
Refrigerators	8,553,701	13,141,900	\$903,719
Clothes washers	24,244,245	37,336,137	\$9,234,339
Dishwashers	4,199,680	6,467,507	\$902,771
Freezers	117,312	180,660	\$12,423
Room air conditioners	3,585,701	5,522,120	\$379,735
Total	787,489,458	1,212,703,105	\$90,517,923

Recreated based on data provided courtesy of Best Buy (2009).

Best Buy's ENERGY STAR commitment can be seen most vividly in its exclusive-brand products. For example, the entire Insignia™ line of LCD TVs manufactured after November 1, 2008, met the new ENERGY STAR® V 3.0 requirements, including six models that outperformed the new specification, making Best Buy the first company to have an entire line of LCD TVs meet the ENERGY STAR specifications. The new 3.0 specification was a landmark for TVs, because for the first time it covered energy use with the TV on, whereas previous specifications addressed only standby power (electricity used when the set is off). ENERGY STAR qualified TVs now use about 30 percent less total energy than standard models.

The company's ENERGY STAR leadership has been recognized by a 2009 Excellence in Appliance and Consumer Electronics Retailing Award partly because qualified electronics products now account for a good portion of the company's \$40 billion in revenue. The award also recognizes Best Buy's work with its product suppliers to make ENERGY STAR central to environmental improvements across the spectrum of consumer electronics and appliances.

Best Buy is partnering with state energy agencies and utilities on its ENERGY STAR qualified product offerings. For example:

- Best Buy helped PG&E develop the first ENERGY STAR consumer electronics program, in California in 2009 and is also working with Xcel Energy in Colorado on an ENERGY STAR electronics program. These programs involve partnerships between the utilities and Best Buy, in which Best Buy provides promotional support for targeted ENERGY STAR qualified products, and utilities provide incentives to Best Buy to offer rebates or other sales inducements to accelerate sales of targeted products. Electronic data exchange is an important element of these efforts, and can involve a lot of effort to get key data verified and data exchange systems to work correctly.
- In New York, Best Buy is working with the state energy agency to test the market for “smart strips” and similar power management devices. Because these products are fairly new, their energy savings performance and customer acceptance must be tested in limited ways before making any larger commitments. A smart strip looks like the typical power strip most households use for their home entertainment and home office products. However, it allows the consumer to automatically shut off some devices when another device is turned off: for example, it can automatically shut off a printer whenever the computer goes off, or shut off a DVD player when the TV goes off.

### Best Buy’s Emerging Vision for Efficient and Sustainable Products and Services

While ENERGY STAR qualified products continue to be an important part of Best Buy’s core business, it is actively pursuing a broader vision of delivering energy efficiency and other sustainable products and services to its customers. This vision was articulated at Best Buy’s October 2009 Utility Summit, which involved electric and gas utilities and other stakeholders in a day-long meeting to discuss Best Buy’s emerging strategies.

The Summit framed some key background issues, including:

- **“Digital connectivity”**—Best Buy expects some 240 million consumer electronic devices to be connected through various networks by 2012, an average of more than two per household.



- **“Techno-stress”**—Best Buy is well aware of the challenges its customers face in using the products it sells, especially in trying to get them to work together via universal remotes, home networks, etc. The company sees reducing this “techno-stress” as a key element of its mission going forward, under the theme of “people, technology, and the pursuit of happiness.”
- **Connecting home energy efficiency to wider energy issues**—Best Buy wants to offer consumers options for clean energy supply technologies, for clean energy transportation technologies, and for utility system efficiency. Company customer research indicates that to gain the interest of the greatest number of customers as well as its utility partners, it needs to expand its value proposition along these dimensions.

These points suggest that digital connectivity, especially as it relates to advanced energy metering and related technologies, holds promise for energy efficiency. But techno-stress works against this goal, making it harder for customers to make effective use of energy-saving technologies. Best Buy hopes that by bringing greater connectivity and reduced stress to customers with product and service packages that include energy savings benefits, it can overcome these barriers and expand its green business offerings.

Against this background, Best Buy leaders described several emerging products and services they are offering now or testing for future release:

- **Home energy management**—Best Buy is working with home automation companies to develop networked energy management systems that will allow residents to see the actual energy use of connected devices, and to control their operation to save energy and reduce peak loads. These services could be bundled with other options including home security and entertainment, and with utility load management programs, to provide greater total customer value.
- **Renewable energy technologies**—Best Buy has installed small wind turbines at some stores, and plans to offer sales, installation, and financing services for wind and solar energy systems on customers’ homes.
- **Electric transportation**—The company is selling rechargeable electric bicycles at some locations, and plans to expand such offerings to larger vehicles and more stores. Best Buy seeks to work closely with utilities to provide electric charging facilities to support the use of electric vehicles.

Best Buy is also experimenting with in-store display and promotion approaches that could encompass many or all of these emerging product and service strategies. One such effort is the “Green Zone” display area recently installed in the Chicago market. The “Green Zones” include ENERGY STAR qualified appliances, ENERGY STAR qualified Compact Fluorescent Light Bulbs (CFLs), reusable shopping bags, ENERGY STAR qualified thermostats, and could potentially include any number of product and service offerings.

### **Walking the Talk Through Efficient Buildings and Store Operations**

Like other cost-conscious companies, Best Buy has managed its internal energy use since 1994 with a centralized energy management system that collects energy data from all of its stores. But over the last four years, as the company has implemented its sustainability plan, internal operations has been caught up in the new ethic to measure and reduce its environmental footprint. To support this effort, the energy management system was upgraded in 2009 to an Ethernet-based communication and data acquisition system. This allows for deeper analysis in researching store usage; a third party company monitors the system and sets the schedule for lights and HVAC systems according to the store requirements.

Best Buy’s energy team produces Retail Energy Reports, in which each store location is scored based on two factors: usage compared to the previous year, and usage per square foot. Stores’ performances are compared at three levels: within their district, within their territory and within the entire U.S. The higher a store ranks in each of those categories, the higher their score will be, with 100 being the highest possible level.

Stores that lag in energy performance receive added attention from the energy team: the team reviews their data and operating schedules and discusses details with store management for operational improvements. It also considers lighting and HVAC upgrades; Best Buy has retrofit about 150 stores in the last two years to high-efficiency metal halide lighting. HVAC replacement specifications require heating and cooling equipment to exceed federal standards. These existing-store energy efficiency improvements are part of Best Buy’s 2008 commitment to reduce its carbon emissions eight percent per square foot of floor space by 2012. The remainder of the gains are expected to come through state of the art efficiency designs for new stores. For new construction, Best Buy designs to the U.S. Green Building Council’s LEED standards.

Best Buy’s new store prototype achieved LEED pre-certification in 2008, earning 24 points for the Silver level on the LEED for Retail commercial interiors rating scale. As of the end of February 2009, only six other companies had achieved this. Best Buy’s goal is to reach pre-certification at the Gold level. Seven new stores that

opened in February 2009 were built according to the new LEED design. Two other locations (Manahawkin, NJ and Kimball & Belmont, IL) were designed and built independently of the company's precertification program, but are expected to attain LEED certification in 2010. Key LEED design features include:

- Installing skylights to reduce the need for artificial lighting;
- Installing photo cells and a dimming system to reduce artificial light when adequate natural light is in the space;
- Encouraging alternative transportation by installing bicycle racks and offering preferred parking for employees who carpool.

Experience at other retailers indicates that skylights and the natural lighting they bring into the store not only save energy, they improve sales. Customers appear to spend more time and make more purchases per visit in stores with such lighting systems. Best Buy is also participating in the Department of Energy's National Renewable Energy Lab project, "Net Zero Commercial Building Initiative," which has a goal of reducing energy use in new and existing stores.

Best Buy has also achieved ENERGY STAR label status for its headquarters in Minnesota, when it moved in 2004 into a brand new corporate campus consisting of four buildings connected by a common hub. Some of the campus' energy efficiency features include compact fluorescent, light emitting diodes and programmable lights with occupancy sensors that shut off when no one is around. Heating, ventilation and air-conditioning systems are also highly efficient. Chilled water for air conditioning is required year round, but the system detects when the outside air temperature drops below 43 degrees Fahrenheit and switches to a "free cooling" mode. All of the energy using equipment is optimized through the use of an Energy Management System.

Although its energy management operations are very centralized, Best Buy engages its employees in its energy and other sustainability activities. The Environmental Affairs team maintains a dedicated email box for suggestions, and gets 50-100 emails a day from Best Buy staff with ideas on how to advance sustainability goals. Using the more detailed and real-time data available through the newly updated energy management systems, the Environmental Affairs team plans to involve store-based staff more actively in fine-tuning operating practices to further drive down energy use.

This training and education effort also supports Best Buy's products and services strategy: one of the goals is to train store staff on all aspects of its green initiatives, from ENERGY STAR qualified products to recycling.

Better-educated staff members are encouraged to help customers make “greener” choices, in product selection, product usage, and product recycling. Sales staff are trained on the benefits of ENERGY STAR products, so that when customers ask, they are prepared to answer and explain. On the other hand, Best Buy does not train staff to actively steer customers to more efficient products, instead the company uses display placements, print ads, online search features and Green Zone layouts to make sure customers are aware of the efficient product choices.

### Leveraging the Supply Chain

Because Best Buy purchases products that are fully manufactured and usually fully packaged, its supply chain and its products and services strategies closely mirror each other. The company does invest substantial effort in minimizing all environmental impacts across the product life cycle, through recycling, packaging, and shipping strategies. Through its participation in the EPA SmartWay transportation partnership, Best Buy is asking all of its shipping companies to be SmartWay-certified by 2010. The company also has instituted a “no-idle” policy for its company vehicles, and is specifying fuel-efficient vehicles for its Geek Squad fleet, which numbers about 5,000 vehicles.

Best Buy specifically advances energy efficiency with its product suppliers in two main ways. For its exclusive brand manufacturers, such as Insignia™ electronics products, the company conducts regular audits on a set of sustainability criteria, and also requires applicable Insignia™ products to meet ENERGY STAR standards. For other product suppliers, Best Buy encourages participation in the ENERGY STAR program. This creates substantial leverage, in that ENERGY STAR serves both as a customer- and a supplier-facing brand.

### Conclusions

As a retailer, Best Buy focuses first on what its customers want, and customers increasingly want “green” products. Because the company sells primarily home appliances and consumer electronics, many of which can use substantial amounts of energy, the energy efficiency of those products is the strongest and most common “green” metric Best Buy uses to position itself as a “green” retailer. The federal ENERGY STAR brand supports this strategy very well, and Best Buy has won ENERGY STAR honors in both 2008 and 2009 for its appliance and electronics retailing efforts.

In 2009 Best Buy unveiled the Greener Together™ theme for its environmental initiative. Based on a three-part “choose—use—reuse” theme, Greener Together™ encourages customers to “choose” the right products through ENERGY STAR, “use” them efficiently through the ENERGY STAR @home educational software, and “reuse” electronics products through the company’s recycling and tech trade-in programs. Looking forward, the company is also exploring advanced home energy management via “smart grid” wireless networks, providing customers renewable energy systems, and selling electric vehicles beginning with two-wheel options (e.g., bicycles).

While Best Buy’s customer offerings are its most visible green initiatives, the company also “walks the talk” by managing its store operations to achieve an eight percent reduction in carbon dioxide emissions by 2012 as part of its commitment under the EPA Climate Leaders program. It also specifies advanced energy and environmental design in new stores by gaining certification for its designs from the U.S. Green Buildings Council’s LEED program.

Because Best Buy purchases finished goods for retail sale, it is able to leverage the ENERGY STAR program as a supply chain initiative. By including more and more ENERGY STAR qualified products in its annual assortments, the company sends a clear signal to its suppliers to qualify their products for ENERGY STAR labels. The company also reduces its supply chain energy and carbon footprints by participating in the EPA SmartWay® transportation program, through which it is asking 100 percent of its shippers to be SmartWay qualified by 2010.

Key lessons learned from Best Buy’s energy efficiency successes include:

- Energy efficiency efforts should grow from the company’s core business. Best Buy’s core focus is to provide customers products and services that help technology live up to its promise. From there, it is encouraging its customers to make smarter decisions on energy efficiency and environmental sustainability.
- Take advantage of technological advancements to provide new ways of delivering energy efficient and sustainable products and services to your customers. At the same time, recognize that “techno-stress” can prevent consumers from making optimal use of these technologies. In addition to offering the technology, make sure you are providing customers with the tools and know-how to use these technologies and connect them with existing devices and systems.



- Work to continually improve your understanding of your customers' mind-set. Consumer research is critical in grasping customers' attitudes and needs with respect to the environment. Those attitudes and needs should then drive the marketing and sales strategy.
- Make sure you are "walking the talk" on energy efficiency before making demands of suppliers and customers. Best Buy's efforts to reduce CO<sub>2</sub> emissions from its own stores provide it with greater credibility in persuading suppliers and customers to adopt more environmentally sustainable behavior.

+

+