

Case Study from Spring 2007 *Carbon Copy*

Raytheon: Changing Attitudes Toward Energy

Raytheon developed an innovative employee education and communications program to change employee behavior regarding energy use, which has helped the company make significant reductions in energy consumption and GHG emissions. The program has been very effective and has contributed to recent and significant declines in energy use at Raytheon, which has saved millions in energy costs and reduced GHG emissions.

Background

Raytheon Company, with 2006 sales of \$20.3 billion, specializes in defense and government electronics, space, information technology, technical services, and business and special mission aircraft. With headquarters in Waltham, Massachusetts, Raytheon employs more than 80,000 people worldwide and is among the largest manufacturers in several locales where it maintains production facilities.

Joining ENERGY STAR and Climate Leaders

Raytheon has had an energy management program in place since the early 1970's, and became an ENERGY STAR partner in 1999. Its energy program has continued to gain strength and visibility within the company as well as externally. In 2001 and 2003, the company received ENERGY STAR Award honors for Leadership in Energy Management for industrial partners.

Raytheon became aware of the Climate Leaders Program through its partnership with ENERGY STAR and joined Climate Leaders in 2002. The company first developed a comprehensive GHG emissions inventory to identify and quantify emission sources. Approximately 90 percent of the company's emissions are energy-related, and most of these are attributable to purchased electricity. With this data in hand, Raytheon quickly recognized that its GHG reduction strategy needed to revolve around energy management and reduction.

A Partnership of Energy and Environment

Energy management is overseen by the facilities organization within Raytheon, while environmental issues are managed by the Environmental, Health and Safety (EHS) organization. A partnership of the two organizations was needed to effectively address GHG emissions. Raytheon's Operations Council, which the EHS and Facilities organizations report up to in most of the businesses, adopted energy and greenhouse gas reductions as a key objective. This senior level endorsement has propelled the programs to achieve even greater reductions. The Operations Council has set a number of internal energy reduction goals, including an aggressive external goal of reducing U.S. GHG emissions by 33 percent per dollar revenue by 2009 against a 2002 baseline. The company's Enterprise Energy Team plays a key role in achieving these reductions. The team consists of representatives from each business and reports up through the Facilities Leadership Council. The team has a series of subcommittees staffed by employees from across the company to address various elements of the energy program. The energy team

continually identifies reduction opportunities, such as upgrading building control systems and installations of new lighting technologies. Last year, Raytheon launched a new initiative that focused on the activities employees can take to help reduce energy consumption.

900 Energy Champions

Raytheon discovered that up to two-thirds of its electricity use is due to the plug load from the company's 80,000 employees. Raytheon launched a program entitled "Energy Conservation for a Competitive Advantage" in early 2006, which targets "Total Employee Involvement" (TEI) in the energy program. The program educates employees about the costs and environmental impact of the energy they use every day and underscores how energy conservation can contribute to Raytheon's competitive advantage in the market place.

The program is supported by a network of "Energy Champions"; specifically, more than 900 employees volunteered to take responsibility for energy conservation in specific work areas and to motivate other employees to identify and implement energy conservation measures. The Energy Champions help the company communicate with employees through media such as messages on plasma displays, posters, stickers, memos, flyers, raffles, "meet and greet" events, and audit checklists.

The company takes a top-down approach to ensure that managers and employees clearly understand that energy conservation is a top priority of Raytheon leadership and that each employee is accountable for energy conservation. The campaign educates employees about the impact of energy conservation on business, and has conveyed the message that energy is important to both the bottom line and to the environment. The company has calculated that an additional \$100-200 million of un-forecasted sales would have been required during 2006 to offset the anticipated increase in electricity costs.

Motivating employee involvement is an integral part of the communications campaign. Raytheon has utilized a number of methods for recognizing and rewarding good performance. "Success Stories" highlighting specific energy conservation measures implemented by the Energy Champions and other employees are displayed on posters throughout Raytheon facilities, at the Raytheon Energy Awareness Program (REAP) Web site, and included many company newsletters. Credit is given to strong performers and this motivates other employees and teams to improve performance. Furthermore, a "scorecard" approach deployed in 2006 to communicate energy performance at both the enterprise and business levels created a sense of excitement and ownership among employees.

Raytheon recognizes that many employees, even those not engaged as Energy Champions, take pride in strong performance at their work location and in the knowledge that they are helping reduce the environmental impact of the company's energy use. Many Raytheon locations have held recognition events, such as employee breakfasts or luncheons, and Raytheon managers are also empowered to provide employees with "on the spot" bonuses for exemplary energy conservation efforts.

Measuring Results

Raytheon tracks and monitors its performance and evaluates its progress. The tool used most widely to report results and share practices among the campaigns, including the Energy Champions network, is an Enterprise Energy eRoom. The eRoom includes folders for each Raytheon business and respective locations, and this content has proven to be an efficient method of sharing information among hundreds of eRoom participants. Raytheon has also conducted trainings and surveys and analyzed the data to measure its success against a goal of Total Employee Involvement.

Collective Success

The Energy Conservation for a Competitive Advantage program yielded an estimated 80 million kilowatt-hours in energy savings during 2006—equivalent to saving approximately \$9 million per year. These energy savings translate to 116 million pounds of GHG emissions avoided, equivalent to the annual average GHG emissions from approximately 10,000 vehicles, or to powering a community of 5,000 homes. Since 2002, Raytheon has reduced its GHG emissions by approximately 25 percent, normalized by revenue. For its 2006 energy reduction accomplishments, Raytheon was selected as a 2007 ENERGY STAR Partner of the Year by the EPA and DOE.

Executive level support has bolstered recent conservation efforts at the company. “This program is changing our work culture by modifying how we use and manage energy in the workplace, and by measuring the impact of our collective actions on energy consumption,” said Dr. Taylor Lawrence, Vice President of Engineering, Technology and Mission Assurance, and executive sponsor of Raytheon’s Operations Council. “The Raytheon Leadership Team is extraordinarily proud of the people throughout the company who are leading in the reduction of energy use and demonstrating an enterprise-wide commitment to environmental stewardship.”

We would like to thank Nancy Kitsos for her contribution to this article.