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# Carbon Copy

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## Spring 2007 Edition

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Cherokee Investment Partners

CSX Transportation Inc

Deere &amp; Company

Duke Energy

Kellogg Company

Merck &amp; Co., Inc.

Mohawk Fine Papers Inc.

National Geographic Society

NVIDIA Corporation

Office Depot

PPG Industries Inc.

Stora Enso North America Corp

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Turner Construction Company

WhiteWave Foods Company

Whole Foods Market

**Editor: Pinal Patel**

## Introduction

**T**his edition of Carbon Copy provides an opportunity to showcase a few of the companies that have made EPA's Climate Leaders the nation's largest voluntary corporate-wide greenhouse gas management program. It is clear that our work together has greatly contributed to the advancement of corporate climate change management. The corporate case studies enclosed highlight the experiences of Partners in various phases of the program: The Tower Companies' motivation to join Climate Leaders; EMC's challenge in creating an inventory management plan; Raytheon's cultural shift to manage energy consumption; Sonoma Wine Company's "Savings by Design" project; and some words of advice from Staples' Mark Buckley. Collectively, they demonstrate EPA's belief that well-designed partnerships produce results that are beneficial to both the environment and the bottom line.

## EMC: Forging A Dynamic Inventory Management Plan

**H**is years of experience in the environmental protection field have taught EMC's Director of Global Environmental Health and Safety, Kevin Biernacki, to recognize that reducing greenhouse gas emissions goes hand in hand with reducing energy, which in turn reduces costs. Companies have to reduce energy use to be competitive. Paul Sauvageau, a Senior Environmental Engineer with EMC, and Mr. Biernacki outline the steps they took to successfully create EMC's Inventory Management Plan (IMP) for Climate Leaders, discuss the value the IMP has added to their greenhouse gas (GHG) reduction efforts, and provide insights to companies on base year reporting.

## Background

EMC provides products, services, and solutions for information management and storage that help organizations extract the maximum value from their information, at the lowest total cost. Established in 1979, EMC is represented by direct sales and distribution partners in more than 50 countries. Based in Hopkinton, Massachusetts, EMC systems are also manufactured in North Carolina and Ireland. With 2005 revenues of approximately \$9.7 billion, EMC employs more than 30,000 people worldwide.

EMC was already engaged in a number of activities prior to joining Climate Leaders that facilitated data collection of greenhouse gases. For example, as part of

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its ISO 14001 certification, EMC had implemented data management procedures, and was subject to state regulations which required tracking and reporting of certain air emissions associated with stationary and mobile sources at their facilities.

To further environmental improvements, EMC joined EPA's Climate Leaders Partnership in 2004. "The program offers the structure, support, and technical expertise that is essential for a successful GHG management program. Also, joining the Climate Leaders program provides invaluable information sharing opportunities with other Partner companies," stated Mr. Sauvageau.

## Choosing Organizational Boundaries

EMC chose the "Operational Control" approach of GHG accounting to determine which facilities and mobile sources would be included in its inventory. As Mr. Biernacki commented, "When you have control of a site, you have the control to make changes."

EMC discussed its corporate facilities with in-house real estate and regional facilities managers to determine the facilities for which it had operational control and focused on those sites. EMC leases space for its small sales offices over which the company does not have operational control. Since these small office locations contribute an insignificant amount to its overall GHG profile, EMC decided it was not practical to include these sites in the GHG management program. Instead, EMC has focused its efforts on larger facilities where it has infrastructure ownership and dedicated onsite staff in place to implement energy conservation measures.

## Developing an Inventory Management Plan

Through Climate Leaders, EMC measures GHG emissions for its U.S. sites. In compiling the IMP, EMC evaluated its emission sources and existing tracking procedures, and documented new procedures for developing their emissions inventory. For example, the company:

1. Discovered that many of its Facilities Groups were already heavily engaged in implementing energy conservation projects;

2. Identified the key personnel responsible for managing facilities data related to GHG sources at EMC properties;
3. Verified site utility accounts and made necessary changes;
4. Evaluated electricity consumption of Data Centers and lab space versus office and manufacturing space; and
5. Improved organization and tracking of data for each GHG emission source.

EMC now tracks consumption of electricity, diesel fuel, natural gas, jet fuel, and fleet vehicle mileage, and from this data determines the best opportunities for reductions. The IMP process has also helped encourage action within the company by bringing employees from different units together to discuss how to measure and reduce emissions.

## Inventory Management as a Dynamic Process

After an initial IMP was completed based on its 2004 facilities, EMC recognized the plan needed to be updated to take into account significant business changes, including major business acquisitions and building divestitures. After making these adjustments, EMC chose to use 2005 for the base year of its goal, rather than 2004, as it became clear that 2005 better represented its business operations and baseline inventory.

## Setting a GHG Reduction Target

Once the IMP was completed, the company conducted a series of meetings focused on reduction goals with EMC facilities staff. Because the IMP process had already familiarized staff with GHG management and created transparent tracking procedures, the goal-setting process had a strong foundation from which to launch.

The meetings with regional facility managers focused on identifying past, existing, and planned energy conservation initiatives at various campuses. From discussions with the Real Estate and Facilities Group, it became clear that the most meaningful indicator of energy use at EMC facilities would be an occupied-square-foot normalization factor. One of the challenges in developing this goal was the amount of information required to track the normalization factor. EMC also found that setting a goal with a square-foot normalization factor was challenging given the relatively low occupancy rates in some of its existing build-

ings. Therefore, the process had to take into account plans for concentrating business activities into less building space, which might increase energy consumption per square foot, as well as consider energy efficiency projects being implemented by regional facilities staff.

Together with the IMP process, setting a corporate-wide GHG reduction goal took EMC one year to complete. EMC set a GHG reduction goal of 8 percent over 7 years normalized by occupied square footage.

## Implementing Greenhouse Gas Reduction Projects

EMC is exploring a variety of energy efficiency options for its facilities as part of its overall GHG management strategy, including installation of office light sensors, high-efficiency boilers, and computer monitor energy-saver functions. Ongoing initiatives include high bay lighting replacement; new chiller set back temperatures; process changes to maximize product Environmental Testing Room

usage and thereby reduce electricity usage; recovery of heat generated from testing and operation of EMC electronic products to provide building heat; and reduction of static air pressure in air handling units to increase fan efficiency. EMC also actively participates in EPA's ENERGY STAR Enterprise Server and Data Center Energy Efficiency initiative and in The Green Grid organization committed to improving overall power efficiency in the technology industry, starting with data centers. The company is communicating these efforts to employees through the company-wide newsletter, and the employee feedback is overwhelmingly in favor of the reduction projects. Dan Fitzgerald, Vice President of Global Facilities and Real Estate, comments that "[A]dditional reduction opportunities exist at some of our facilities, and, with welcome guidance from EPA, we continue to identify solutions that will further reduce our greenhouse gas emissions."

*We would like to thank Kevin Biernacki and Paul Sauvageau for their contributions to this article.*

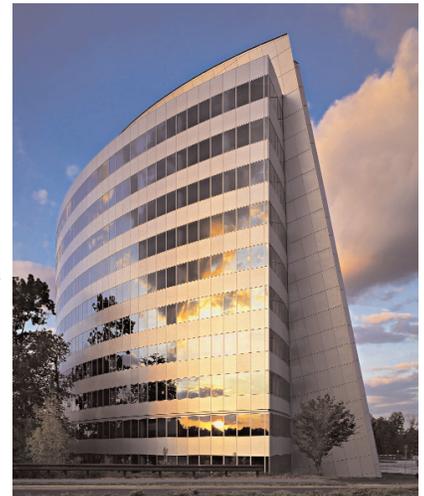
## New Partner Spotlight: The Tower Companies

When The Tower Companies, a Maryland-based real estate development firm, realized that an estimated 40 percent of atmospheric emissions were attributable to buildings, the company decided to join the Climate Leaders Partnership to reduce its impact on the climate. Through Climate Leaders, the company hopes to lead by example in an industry which is responsible for the consumption of 40 percent of the raw materials, 40 percent of the energy, and 25 percent of the water used in the United States.

The Tower Companies, which has been operating for sixty years, employs 35 people and operates 14 facilities. Tower built America's first LEED (Leadership in Energy and Environmental Design) certified apartments, Blair Towns, in Silver Spring, Maryland, and The Tower Building, the first green office building in Washington, DC. The company focuses on socially responsible development and environmentally conscious buildings and communities when creating its business, residential, retail, and mixed-use real estate environments.

Marnie Abramson, Principal of The Tower Companies, summarizes the corporate philosophy driving their business strategy, emphasizing that "over the long term without

proper action taken to create sustainable sites, reduce our dependence on fossil fuels, and minimize the depletion of natural resources, costs to develop will skyrocket. Combining that with the growth in population demands that the real estate industry embrace new ways of doing business today."



*The Tower Building*

Joining Climate Leaders in 2006 helped the company create a plan to identify, track, and reduce its carbon footprint. The company has calculated its GHG emissions using widely accepted methodologies, and has developed an IMP that provides guidance on, and institutionalizes the process for, collecting, calculating, and maintaining GHG data. As a result of this effort, the company was able to recognize that its direct and indirect emissions sources include stationary combustion sources (boilers, backup

# New Partner Spotlight

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generators); mobile combustion sources (company-owned fleet vehicles and snow blowers); refrigeration/AC equipment use (chillers); and purchased electricity.

The company has adopted a comprehensive emissions reduction strategy that includes the following components:

1. Construct new buildings in line with green building standards. For example, the company now has more than 1 million square feet of green projects. Current projects under development include 2000 Tower Oaks Boulevard, the world's largest commercial application of Green/Vedic design and development, which incorporates LEED "Gold" building certification for superior air quality, high recycled content, and energy and water efficiency, and 1050 K Street, located in downtown Washington. The 146,000 square foot, 11-floor office building with ground level retail will be LEED Gold Certified.
2. Improve the efficiency of existing equipment when replacement or upgrades are needed.
3. Identify opportunities where solar water heating and power can be implemented at buildings, in collaboration with a local solar energy firm.
4. Purchase wind power using Renewable Energy Certificates (RECs) to offset 100 percent of the company's electricity use. The Tower Companies, as ranked by EPA's Green Power Partnership, is the 25th largest purchaser of green power in the country.
5. Offset the company's remaining direct emissions, through either purchasing carbon offsets by investing in methane reduction or reforestation projects, or by partnering with a local charter school to purchase a more efficient boiler.

This multifaceted reduction strategy forms the basis of The Tower Companies' March 2007 Climate Leaders goal



**The Tower Building:** Designed by architects *KishimotoGordon.PC* and located on the I-270 Tech Corridor in Rockville, MD, The *Tower Building* was one of the first environmentally-friendly office buildings in the Washington metropolitan area, winning the Apartment and Office Building Association's prestigious "Green Office Building of the Year" award. The "smart" and "green" *Tower Building* is a composition of two overlapping forms: Its elliptical structure affords offices with 180 degree views, and is bisected by a sweeping, curved "sail" wall. Offices are suffused with natural light while maintaining comfortable interior temperatures. Fresh, charcoal-filtered outdoor air circulates throughout the building once an hour for maximum air quality. While the building exceeds EPA's ENERGY STAR® requirements, it revolutionizes both the form and function of an office building making it a healthy, energy efficient office of the future . . ."



### Green Building Statistics

- Tower Building purchases Green Energy for 25% of its energy usage.
- Indoor air quality: Triple-filtered, 3-stage, outside air filtration system removes 85% of airborne chemical pollutants.
- Air conditioning: Chilled water air conditioning system with economizers - 30% more efficient than typical "market" air conditioning systems.
- Daylight availability: Energy-efficient Low-E® glass that allows the daylight in, but keeps the heat and cold out and maintains a steady comfortable temperature.
- A high percentage of recycled and recyclable materials, including the carpet and ceiling tiles.
- Energy-adaptive smart elevators which learn the building's traffic patterns.
- Digital electronic building management system (BMS).
- Tower Building is designed to be ENERGY STAR® rated, which would make it among the top 25% most energy efficient buildings in the country.
- Ventilation systems: Exceed the ASHRAE 62 standard by more than 25% and completely exchange air in the building every 55 minutes.
- Double-wall construction for air conditioning units provides cleanable interior surfaces and superior acoustics with moisture removal features that minimize microbiological growth.
- Ecologically-sensitive cleaning materials and solvents using low volatile organic compounds (VOCs) are used throughout the building, working to improve indoor air quality and reduce toxicity.
- Acoustical sound transfer is 30-40% less than a typical building.

announcement to achieve net zero U.S. GHG emissions by 2008 and maintain that level through 2012. Abramson recognizes that "we have an obligation to our colleagues, associates, friends, and families to responsibly protect the environment we are living in. It is our hope that through our partnership with EPA's Climate Leaders, we can show, by example, that as an industry we have one of the largest and most immediate opportunities to dramatically reduce annual carbon dioxide emissions, reduce greenhouse gases, and therefore reduce global warming. We encourage others within our industry, no matter what size, to make a commitment to reduce greenhouse gases."

*We would like to thank David Borhardt for his contribution to this article.*

# Raytheon: Changing Attitudes Toward Energy

**R**aytheon 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 consump-

tion 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

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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.*

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## Sonoma Wine Company: Sustainable Expansion Yields Barrels of Benefits

**S**onoma Wine Company (SWC) is the largest provider of contract winery services in Northern California. The company’s services include crushing grapes, fermentation, barrel and tank storage, winemaking, bottling, and storage of cased goods. With a client base of 25 companies, SWC currently bottles 1.5 million cases per year, and stores 3 million gallons of wine in tanks and barrels and 750,000 cased goods.

In 2003, SWC chose a business model that would expand the business 100 percent in five years, from 1.5 million cases of wine bottled to 3 million cases. The firm applied for an

operating permit allowing for the 100 percent expansion, and soon realized that involving the community and the local utility, while reducing the company’s environmental impact, would create the necessary conditions for the permit application to be approved.

## Savings by Design

In designing its expansion, SWC established its baseline resource use based on data from current operations in 2004 and 2005. Next, two alternative design options were identified and quantified: the use of a standard winery design



*The Sonoma Wine Company*

(which quantified future expanded operations as they would have occurred without investing significantly in resource efficiency measures), and an alternative approach—the “Savings by Design” model. The Savings by Design approach incorporated a system of water, wastewater, and energy efficiency measures that took into account investments in integrated water/energy efficiency into one integrated expansion plan. Natasha Granoff, Director of Business Development comments, “Savings by Design shows the business case for energy efficiency.”

Despite a planned doubling in production, Savings by Design will reduce SWC’s utilities use and wastewater production from the standard design option as well as from baseline use. For example, refrigeration and water heating makes up nearly all of the energy use at a winery. While the standard design option would have increased electricity use by 108 percent cumulatively, Savings by Design will reduce electricity use by 7 percent from the baseline, by implementing projects that include wine storage tank insulation, building shell improvements, hot water re-use systems, air compressor upgrades, and lighting retrofits. The incremental reduction in electricity use, from the standard design to Savings by Design, was calculated at 1.59 million kilowatt-hours per year, for a reduction of 56 percent.

Based on environmental criteria, Savings by Design was clearly the preferable option. However, the cost savings of the project were just as impressive to senior SWC manage-

ment. While the Savings by Design capital cost is \$820,000, or 24 percent, higher than the standard design, it provides a savings of \$266,000 per year in electricity and natural gas. This translates to a reduction in cost of energy per case of wine from \$0.15 to \$0.06, or 60 percent. In addition, SWC developed a unique partnership with the local utility, Pacific Gas & Electric, to create a capital project incentive structure that favors the integrated approach to energy, water, and wastewater improvements that SWC was proposing for its expansion project. This approach ultimately facilitated the approval of a larger number of capital projects, and reduced the payback period of Savings by Design from five years to three years.

## **Translating Energy Reductions to Greenhouse Gas Reductions**

While SWC began an energy use reduction campaign in 2003, the company had not focused specifically on carbon dioxide emissions until 2006. Joining Climate Leaders was recommended by the Climate Protection Campaign, a Sonoma County-based non-profit organization, which had suggested that SWC track its GHG emissions in conjunction with its energy reduction plan. Granoff points out that while gaining internal support for energy efficiency was easy with SWC’s track record of implementing projects with payback periods under a year, “making the carbon connection and reduction of GHG’s was a cultural shift.”

As part of its participation in Climate Leaders, the company pledged to reduce total U.S. greenhouse gas emissions by 15 percent from 2005 to 2010, which will be accomplished by implementing the Savings by Design program rather than the standard winery design approach. SWC will reduce emissions by 926 tons of carbon dioxide per year, while saving \$310 per ton of carbon dioxide reduced.

## **Barrels of Benefits**

By using an innovative approach for its planned business expansion, SWC benefits from the availability of state and federal incentives, a unique partnership with the local utility, the ability to make changes in-house with off-the-shelf technology, and the marketing value of reducing its carbon footprint. The result has been a reduction in environmental impact and operational costs, protection against energy price increases, improved community relations, and industry leadership.

*We would like to thank Natasha Granoff for her contribution to this article.*

## Interview with Energy Champion: Mark Buckley



*Mark Buckley*

**EPA:** You have been with Staples for 17 years. What kind of work do you do on a daily basis?

**MB:** I have been Vice President of Environmental Affairs at Staples more than four years now. My work is highly variable; I focus on improving internal processes to make the business sustainable, and I also focus on

creating products and services to help customers be more sustainable. Most environmentally oriented jobs are either focused on Environmental Health and Safety or Corporate Social Responsibility, and my job has some of both.

Regarding climate change, I try to look at it from the perspective of efficiency and energy conservation, such as making improvements in building design with retrofits. How we use energy has a direct and indirect impact on climate.

**EPA:** Staples is involved in a number of activities to reduce its impact on the environment. How is your department integrated into the company's operations—is change being driven from the top-down or bottom-up?

**MB:** Every aspect of our company takes our environmental impact into consideration. Change is not just promoted and encouraged by Environmental Affairs but in all levels of the company.

It is important to try to link environmental benefits to business benefits—they are not opposing concepts. Many people still think of sustainability as a philanthropic or public relations exercise and that's just not the case. The impacts of these measures can be quantified and that makes the connection more real for stakeholders. A great lesson to teach is one of resource management: equate resource management today to benefits that businesses achieve and you see tangible results.

**EPA:** In relation to your experience in previous roles, what internal mechanisms make Staples more conducive to environmental stewardship?

**MB:** Staples is a young company, just 20 years old, and we are continually growing. We're currently in 22 countries. When we started, we couldn't have predicted having such incredible growth. That makes change part of our makeup—it's not something we're afraid of. Change may not always be embraced as well in older firms.

**EPA:** What obstacles do you face in improving your company's environmental footprint? Do you have advice for initiating change at a large organization, especially as a long-term manager?

**MB:** In reality, there are always people within an organization that don't understand the connection between environmental stewardship and core business goals and strategies. It is important to create a culture where environmental stewardship is part of everyone's job everyday. We have 74,000 associates—everyone must integrate environmental issues to some degree. We spend time educating associates [employees] and linking environmental business practices to associate behavior.

My advice for a large organization is to focus on creating a cultural evolution versus a paradigm shift. A paradigm shift denotes flipping a switch, but in reality, for long-term success we must incorporate issues into the cultural component of a company. A cultural evolution will effect broader and more long-lasting change but it does take time. Also, companies have to start viewing and using terms differently, such as replacing the term "waste management" with "resource management." Although they are essentially the same terms, companies have to shift their language to shift behavior.

**EPA:** Staples joined Climate Leaders in 2002 as a Charter Partner. How do you continue to benefit from your participation in the program?

**MB:** Climate Leaders is an excellent partnership. We have limited resources to gather data. Climate Leaders' resources made that happen and allowed us to start collecting our data globally. We wouldn't have gotten so far without them. As part of our U.S. EPA Climate Leaders membership, Staples has voluntarily committed to a 7 percent reduction in our U.S. GHG emissions by 2010 on an absolute basis, starting from a base year of 2001. As of 2005, we had reduced our net greenhouse gas (GHG) emissions by nearly 5 percent versus 2001. We really like the structure of the program and the access we have to other companies struggling with the same issues in establishing targets and goals.

We have many connections to the EPA through our involvement in other programs such as Plug-In To eCycling, SmartWay Transport Partnership, WasteWise, Green Power Partnership, and ENERGY STAR. Climate

Leaders provides an umbrella of resources and services that help people make connections—it's more than just a focus on emissions.

**EPA: Staples now offers an array of environmentally-conscious products. Can you comment on this evolution?**

**MB:** Staples brand products have grown significantly over the past few years, and now make up 20 percent of our total sales. We're creating high quality products that increasingly have sustainable attributes.

For example, in terms of paper, we're shifting the paradigm in the market place to create enough vertical demand for products. We began by requesting change at the paper mills. The mills didn't have an incentive to change since we were the only ones asking and the volume wasn't high enough. We had to increase vertical demand in the marketplace. To do that, we had to change our behavior internally to make a bigger purchase. Instead of placing recycled paper as a higher priced niche product, we converted a large part of the paper we sell to recycled paper. We increased the volume of production so the supplier can buy from a secondary market and the market will run more efficiently. We've increased the average amount of post-consumer recycled content across all of our paper products sold by weight from less than 20 percent in 2003 to 30 percent in 2005. File folders were 100 percent virgin wood fiber five years ago. Three years ago they consisted of ten percent post-consumer content. Today, there is no virgin alternative for file folders or for any of our paper products. The products now offered are priced nearly as low as the price of the virgin products. Our goal was to stabilize the market and add credibility.

One of our achievements is to require vendors bidding to supply large-volume paper products like copy, print, and notebook filler paper to complete an environmental survey, including descriptions of their forest sources, characteristics of the fiber sourced, and mill-specific information to help us select responsible paper suppliers. One impact of these corporate responsibility efforts is to promote sustainable forestry, which can help combat climate change by providing carbon sinks and renewable fuels.

We help sponsor the resource tool Earth 911 Business to provide helpful environmental resources, tools, and information to businesses nationally, with a focus on waste reduction, recycling, and the purchase of environmentally preferable products.

**EPA: What do you think about competitors entering the market for recycled products?**

**MB:** We welcome others offering recycled products in the market. It increases recovery rates and spurs continuous improvement. The more others help us leverage the market by diversifying their portfolio, the easier it will be to shift the marketplace towards the production of sustainable products.

**EPA: Will Staples be offering climate-friendly products in the future?**

**MB:** Yes, we plan to. It's just smart business to create environmentally preferable products. Our goal is to produce high quality products that are also great for the planet.

There are a myriad of approaches—with climate change there is no silver bullet. We try to diversify our portfolio. We are committing to going beyond recycled content to offering paper products composed of alternative fibers and tree fiber from certified and sustainably managed forests where feasible. It helps to take a life cycle approach. For example, we've considered the environmental life cycle of cotton and we're considering using the cotton from old denim in our products since, historically, cotton goes directly to landfills. We're looking at the process of production holistically, from packaging to supply chain to raw materials. Continuous improvement is a journey, not a plateau.

**EPA: Why do you think Staples and other companies are taking steps to mitigate their impact on climate change?**

**MB:** Recent events have garnered attention on the issue of climate change. Hurricane Katrina was galvanizing for many people. The hurricane season raises awareness, and so do climate trends in North America. My house is 40 miles north of Boston and we had frogs jumping across the street in December—that's not normal. The geopolitical effects of energy dependence are garnering attention and clean energy is emerging as a viable option. The investment community is starting to move large sums of money from the margins to the mainstream. Companies that are not historically green, such as Wal-Mart, are bringing a lot of attention to the issues. Clearly, given their footprint they can have an enormous impact. GE invested billions on research and development because they understand the future of clean energy. It's no longer a marginal discussion.

We're at an interesting stage as a country. We went from asking "Is [climate change] real?" to "What are we going to do about it?" and that is very motivating.

*We would like to thank Mark Buckley for sharing his insight with Carbon Copy.*

## What's New

### Joint Climate Leaders/CHP Partners Play Leading Roles in Asia-Pacific Partnership

The Climate Leaders and Combined Heat and Power (CHP) Partnerships share some common Partners, primarily those who are in the business of clean energy technologies. CHP Partner Solar Turbines, a subsidiary of Caterpillar, produces low-emission, high efficiency gas turbines and UTC Power, a subsidiary of UTC, produces fuel cells and packaged micro-turbine systems. Climate Leaders Partner GE is a market leader in wind and solar technologies. Besides their corporate commitment to reducing their own environmental impact, these companies are helping others worldwide to reduce their emissions by providing clean energy technologies for highly efficient CHP and renewable distributed generation project.

Solar Turbines, GE, and the CHP Partnership are currently working under the Administration's Asia-Pacific Partnership on Clean Development and Climate (APP), by providing industry and technical leadership to the Partnership's Renewable Energy and Distributed Generation Task Force

(REDGTF). The APP is an innovative public-private effort to accelerate the development and deployment of clean energy technologies. Government partners include Australia, China, India, Japan, the Republic of Korea, and the United States. The Partners are collaborating to promote and create an enabling environment for commercially available and emerging clean energy technologies that will promote economic growth while enabling significant reductions in GHG intensities.

Solar Turbines will host the third meeting of the Task Force, and the first hosted by the United States, at their headquarters and manufacturing facility in San Diego, California, at the end of March. Participating U.S. federal agencies include State, Commerce, Energy, and EPA. For more information about the APP, the REDGTF, or the Clean Energy Trade Mission, visit the APP Web site at [www.state.gov/g/oes/climate/app/](http://www.state.gov/g/oes/climate/app/).

For more information about the CHP Partnership, visit [www.epa.gov/CHP](http://www.epa.gov/CHP).

### Fortune 500 Green Power Challenge

The U.S. Environmental Protection Agency's (EPA's) Fortune 500 Green Power Challenge encourages and highlights the voluntary green power purchases of some of America's biggest corporations. The main component of the Challenge is to double the percentage of green power being bought by the nation's 500 largest companies. This Challenge serves as an excellent opportunity for companies to earn national recognition for purchasing green power and to reduce their GHG emissions that contribute to climate change. The Fortune 500 Green Power Challenge is a year long effort that will conclude at the end of December 2007 and focus on the collective green power purchases of participating Fortune 500 companies.

Voluntary green power purchasing has become an increasingly attractive corporate environmental and climate change strategy. In order to participate, all Fortune 500 corporations must meet or exceed EPA's Green Power Partnership requirements. EPA will track the progress of participating Fortune 500 companies toward the overall goal at [www.epa.gov/greenpower/partners/fortune500.htm](http://www.epa.gov/greenpower/partners/fortune500.htm).

#### Top Fortune 500 List

Top 5 Partners	Green Power Usage (kWh)
1. Wells Fargo & Company	550,000,000
2. Whole Foods Market	463,128,000
3. Johnson & Johnson	306,418,000
4. Starbucks	185,000,000
5. DuPont Company	180,000,000

For additional information on how your corporation can participate in EPA's Fortune 500 Green Power Challenge, please contact Blaine Collison ([collision.blaine@epa.gov](mailto:collision.blaine@epa.gov), 202-343-9139).

Not a Fortune 500 company? EPA's Green Power Partnership works with many types of organizations. To find out more about how your organization can partner with EPA, please visit [www.epa.gov/greenpower](http://www.epa.gov/greenpower).

## Three Climate Leaders Achieve Goals

**American Electric Power (AEP) pledges to reduce total U.S. GHG emissions by 6 percent from 2001 to 2010. AEP achieved its initial goal by reducing total U.S. GHG emissions by 4 percent from 2001 to 2006.**

AEP has accomplished its Climate Leaders goal of reducing U.S. GHG emissions by 4 percent below its baseline (average 1998-2001 emissions) by 2006. From 2003 through 2006, AEP achieved approximately 39.2 million metric tons of reductions through a variety of actions including: improving the efficiency of its existing power plants, retiring older less-efficient fossil fuel plants, adding wind power capacity, improving availability of its nuclear plant, substantially reducing SF6 leakage rates, and reforesting lands in the United States and abroad. AEP is taking its climate commitment to the next step by committing to reduce its GHG emissions to 6 percent below the same baseline by 2010 as part of its participation in Climate Leaders and in the Chicago Climate Exchange. The company also is seeking regulatory approval to build 1,200 MW of Integrated Gasification Combined Cycle (IGCC) clean-coal plants rather than conventional pulverized coal in Ohio and West Virginia, and is also an integral member in the partnership to build the Department of Energy's FutureGen plant.



**St. Lawrence Cement pledges to reduce global GHG emissions by 20 percent per ton of cementitious product from 2000 to 2012. St. Lawrence Cement achieved its initial goal by reducing global GHG emissions by 16 percent per ton of cementitious product from 2000 to 2006.**

St. Lawrence Cement reduced global GHG emissions 4 years before the company's announced goal year of 2010. The company pledges to extend its commitment to a 20 percent reduction per ton of cementitious product from 2000 to 2012. St. Lawrence Cement achieved GHG emissions reductions by implementing energy efficiency projects, using clinker and cement substitutes, and increasing the use of alternative fuels. For example, the company increased the capacity of its roller mill in Camden, New Jersey, by nearly 20 percent



and conducted additional efficiency projects, used mineral components such as ground granulated blast furnace slag as cement and clinker substitutes, and increased use of tires, municipal sewage sludge, and treated wood as alternative fuels at its plants in Joliette, Quebec, and Hagerstown, Maryland (tires only). To meet its new target of 20 percent from 2000 to 2012, St. Lawrence Cement is constructing a new vertical roller mill in Mississauga, Ontario, which will improve production efficiency and utilize heat recovery from the kiln to dry raw materials. It has also participated in the construction of a new alternative fuels platform in Joliette, Quebec, and is continuing to implement energy efficiency projects across the company.

**United Technologies Corporation (UTC) pledges to reduce total global GHG emissions by 12 percent from 2006 to 2010. UTC achieved its initial goal by reducing global GHG emissions by 46 percent per dollar revenue from 2001 to 2006.**

In 1997, United Technologies Corporation set a goal to reduce its energy consumption by 25 percent normalized to revenue by 2006. After achieving the goal four years ahead of schedule, in 2001 the company increased its commitment to 46 percent by 2006 and also joined the EPA Climate Leaders Program, voluntarily committing to reduce GHG emissions by 16 percent per dollar of revenue from 2001 to 2006. UTC's overall approach to productivity in the business is doing more with less. UTC facilities around the world have reported energy savings from improvements in manufacturing operations, behavioral modifications, building envelope upgrades, lighting efficiency improvements, HVAC system upgrades and compressed air system improvements. The benefits from energy efficiency improvements include GHG emission reductions, energy cost savings, manufacturing process improvements and maintenance savings. These improvements contribute to UTC's ability to compete in today's global market.



UTC products turn energy into useful work that becomes part of the customers' environmental footprint. This motivates UTC to design for the environment, creating products that consume fewer resources and produce fewer emissions during manufacture and in operation.

# Climate Leaders Partners Announce GHG Reduction Goals

The following Climate Leaders Partners have recently announced GHG reduction goals:

**Anheuser-Busch Companies, Inc.** pledges to reduce total U.S. GHG emissions by 5 percent from 2005 to 2010.

**Boise Cascade** pledges to reduce total U.S. GHG emissions by 10 percent from 2004 to 2014.

**Codding Enterprises** pledges to reduce U.S. GHG emissions by 50 percent per square foot from 2005 to 2010.

**Fairchild Semiconductor** pledges to reduce U.S. GHG emissions by 30 percent per manufacturing index from 2003 to 2010.

**General Motors Corporation** pledges to reduce total North American GHG emissions by 40 percent from 2000 to 2010. General Motors achieved its initial goal by reducing total North American GHG emissions by 23 percent from 2000 to 2005.

**IBM** pledges to reduce total global GHG emissions by 7 percent from 2005 to 2012. IBM achieved its initial goal by

reducing total global energy-related GHG emissions by an average of 6 percent per year and PFC emissions by 58 percent from 2000 to 2005.

**Sandy Alexander** pledges to reduce total U.S. GHG emissions by 9 percent from 2006 to 2012.

**SC Johnson** pledges to reduce total U.S. GHG emissions by 8 percent from 2005 to 2010. SC Johnson achieved its initial goal by reducing total U.S. GHG emissions by 17 percent from 2000 to 2005.

**Steelcase Inc.** pledges to reduce U.S. GHG emissions by 40 percent per dollar sales from 2004 to 2009.

**The Tower Companies** pledges to achieve net zero U.S. GHG emissions by 2008 and maintain that level through 2012.

**The World Bank** pledges to reduce total U.S. GHG emissions by 7 percent from 2006 to 2011.

**Thomas Rutherford, Inc.** pledges to reduce U.S. GHG emissions by 7 percent per employee from 2006 to 2012.

## Welcome New Climate Leaders Partners!

### Anheuser-Busch Companies, Inc.

St. Louis, MO

Based in St. Louis, Missouri, Anheuser-Busch is the leading American brewer, holding a 48.4 percent share of U.S. beer sales. The company

brews the world's largest-selling beers, Budweiser and Bud



Light. Anheuser-Busch also owns a 50 percent share in Grupo Modelo, Mexico's leading brewer, and a 27 percent share in China brewer Tsingtao, whose namesake beer brand is the country's best-selling premium beer. Anheuser-Busch is one of the largest theme park operators in the United States, is a major manufacturer of aluminum cans and one of the world's largest recyclers of aluminum cans, recycling more than 125 percent of the aluminum cans it packages at its U.S. breweries. Anheuser-Busch not only recycles the equivalent of 100 percent of its production, but also an additional 25 percent from other beer and soft drink sources of aluminum beverage containers.

### Cherokee Investment Partners

Raleigh, NC

Cherokee is the world's largest private equity fund that specializes in the acquisition, remediation and sustainable redevelopment of contaminated real estate, or "brownfields". Since 1990, Cherokee has acquired over 520 properties while protecting sellers, future owners and communities from the risks and liabilities associated with environmentally impaired property. Cherokee currently retains more than \$1.6 billion of assets under management and invests in properties throughout the United States, Canada, and Western Europe. Cherokee accepts projects that traditional investors often reject and actively looks to transform communities where large-scale urban blight, environmental contamination, and other obstacles impede economic growth and community redevelopment.



## CSX Transportation, Inc

CSX Corporation, based in Jacksonville, Florida, owns companies providing rail, intermodal and rail-to-truck transload services that are among the nation's leading transportation companies, connecting more than 70 river, ocean and lake ports, as well as more than 200 short line railroads.



Its principal operating company, CSX Transportation Inc., operates the largest railroad in the eastern United States with a 22,000-mile rail network linking commercial markets in 23 states, the District of Columbia, and two Canadian provinces. CSXT headquarters are in Jacksonville, Florida.

## Deere & Company

Moline, IL

John Deere (Deere & Company) is the world's leading provider of advanced products and services for agriculture and forestry and a major provider of advanced products and services for construction, lawn and turf care, landscaping and irrigation. John Deere also provides financial services worldwide and manufactures and markets engines used in heavy equipment. Since it was founded in 1837, the company has extended its heritage of integrity, quality, commitment and innovation around the globe.



JOHN DEERE

In 2006, company earnings reached a record high for a third consecutive year, with net income of \$1.69 billion on worldwide sales and revenues of \$22.15 billion. Sales outside the U.S. and Canada, which have already doubled since the end of the last decade, surpassed \$6 billion. Deere has customers in more than 130 countries with 47,000 employees in operations around the world.

John Deere introduced an energy efficiency program at its North American units in 1972. Between 1972 and 2006, John Deere's energy conservation programs have reduced its total GHG emissions 63 percent per production ton. Besides tracking and finding ways to reduce emissions of greenhouse gases, John Deere's strategy to address climate change encompasses improved efficiency, cleaner products, advanced research and development, and leadership.

## Duke Energy

Charlotte, NC

Duke Energy Corp., one of the largest electric power companies in the United States, supplies and delivers energy to approximately 3.9 million U.S. customers. The company has nearly 37,000 megawatts of electric generating capacity in the Midwest and the Carolinas, and natural gas distribution services in Ohio and Kentucky. In addition, Duke Energy has more than 4,000 megawatts of electric generation in Latin America, and is a joint-venture partner in a U.S. real estate company.



## Kellogg Company

Battle Creek, MI

With 2006 sales of almost \$11 billion, Kellogg Company is the world's leading producer of cereal and a leading producer of convenience foods, including cookies, crackers, toaster pastries, cereal bars, frozen waffles, and meat alternatives. The company's brands include Kellogg's, Keebler, Pop-Tarts, Eggo, Cheez-It, Nutri-Grain, Rice Krispies, Murray, Austin, Morningstar Farms, Famous Amos, Carr's, Plantation, Ready Crust and Kashi. Kellogg products are manufactured in 17 countries and marketed in more than 180 countries around the world.



## Merck & Co., Inc.

Whitehouse Station, NJ

Merck & Co., Inc. is a global research-driven pharmaceutical company dedicated to putting patients first. Established in 1891, Merck currently discovers, develops, manufactures and markets vaccines and medicines to address unmet medical needs. The Company devotes extensive efforts to increase access to medicines through far-reaching programs that not only donate Merck medicines but help deliver them to the people who need them. Merck also publishes unbiased health information as a not-for-profit service.



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## Mohawk Fine Papers Inc.

Cohoes, NY

Mohawk Fine Papers, a **MOHAWK FINE PAPERS** private company headquartered in Cohoes, New York, is the largest non-integrated manufacturer of premium printing, writing, and imaging papers in the country. Mohawk engineers its papers to provide optimal performance for sheet-fed, web, and digital printing applications. Its products, including such well known brands as Superfine and Strathmore, are used in a wide variety of communications including prestigious annual reports, corporate identity systems, high-end brochures, packaging, and everyday communication for businesses of all sizes and types. Mohawk's manufacturing, distribution, and converting facilities are located in New York and Ohio.

Mohawk was the first paper manufacturer in the United States to offset emissions from purchased electricity with Green-e certified Renewable Energy Certificates (RECs) from wind-power projects, thereby giving its customers the option to buy products made with renewable energy. Mohawk participates in the EPA's Green Power Partnership and was honored in 2005 with an award for leadership in renewable energy procurement.

## National Geographic Society

Washington, DC

The National Geographic Society is one of the world's largest nonprofit scientific and educational organizations. Founded in 1888 to "increase and diffuse geographic knowledge," the Society works to inspire people to care about the planet. It reaches more than 350 million people worldwide each month through its official journal, National Geographic, and four other magazines; National Geographic Channel; television documentaries; radio programs; films; books; DVDs; maps; and interactive media. National Geographic has funded more than 8,000 scientific research projects and supports an education program combating geographic illiteracy.



## NVIDIA Corporation

Santa Clara, CA

NVIDIA Corporation is the worldwide leader in programmable graphics processor technologies. The Company creates innovative, industry-changing products for computing, consumer electronics, and mobile devices. These product families are transforming visually-rich applications such as video games, film production, broadcasting, industrial design, space exploration, and medical imaging.



## Office Depot

Delray Beach, FL

Incorporated in 1986 and headquartered in Delray Beach, FL, Office Depot has annual sales of over \$15 billion, and employs approximately 52,000 associates around the world. Currently, the Company sells to customers directly or through affiliates in 42 countries. Office Depot is a leader in every distribution channel—from retail stores and contract delivery to catalogs and e-commerce. The Company has approximately 1,200 retail stores in North America and 350 stores in other parts of the world. With \$4.3 billion in online sales, the Company is also one of the world's largest e-commerce retailers.



## PPG Industries, Inc.

Pittsburgh, PA

Headquartered in Pittsburgh, PA, PPG Industries is a diversified manufacturer that supplies products and services around the world. The company is a global supplier of coatings, glass, fiber glass and chemicals. PPG's commitment to environmental responsibility is long-standing. For decades PPG has been committed to making products and pursuing business practices that help sustain a healthy global environment. This commitment is articulated through PPG's Environmental, Health and Safety policy, which emphasizes continuous improvement and sustainability.



## Stora Enso North America Corp

### Wisconsin Rapids, WI

Stora Enso is a global integrated paper, packaging and forest products company, and a world leader in sustainability. In North America, the company is a leading producer of coated and supercalendered papers, and a premier producer of specialty papers. Stora Enso has papermaking operations in Biron, Kimberly, Niagara, Stevens Point, Whiting and Wisconsin Rapids, Wisconsin; Duluth, Minnesota; and in Port Hawkesbury, Nova Scotia, Canada.



## The Tower Companies

### North Bethesda, MD

Founded in 1947, the Tower Companies are a three-generation, family-owned business and a leading developer of green buildings in the Washington Metro area with over one million square feet of green projects. The Tower Companies are one of the largest purchasers of green power in the country, buying 100 percent wind for all of their electrical energy needs, and the only real estate developer on EPA's list of Top 25 Partners in the Green Power Partnership. Tower Companies built America's first LEED (Leadership in Energy and Environmental Design) certified apartments in Silver Spring, MD, called Blair Towns, and the first green office building in Washington, DC, called The Tower Building, which won the Apartment and Office Building Association of Metropolitan Washington's Green Building Award in 2003.



Tower has won numerous city, county, state, and national awards including the 2003 Green Power Leadership Award presented to them by EPA and the Department of Energy. The Tower Companies are currently developing 2000 Tower Oaks Boulevard, the world's largest commercial application of Green/Vedic design and development combining LEED "Gold" building certification for superior air quality, high recycled content, and energy and water efficiency, with Vedic architectural principals of proper Orientation, Placement and Proportion. 2000 Tower Oaks Boulevard has received extensive world-wide media coverage for going beyond healthy materials creating a total environment to increase productivity.

## Turner Construction Company

### New York, NY

Turner is the leading general builder in the United States, ranking first or second in the major segments of the building construction field. During 2006, Turner completed \$8.5 billion of construction. Founded in 1902, the firm is a subsidiary of HOCHTIEF, one of the world's leading international construction service providers.



## WhiteWave Foods Company

### Broomfield, CO

Headquartered in Broomfield, Colorado, WhiteWave Foods Company is a leader in corporate citizenship—manufacturing innovative, authentic and nutritious branded food products through socially and environmentally responsible practices.



A subsidiary of Dean Foods Company, WhiteWave Foods enjoys a robust portfolio of premium food and beverage brands including organic and natural leaders—Horizon Organic®, Silk® and TofuTown®—and indulgent favorite brands such as International Delight®, LAND O LAKES® Products, and HERSHEY'S® Milks and MilkShakes.

## Whole Foods Market

### Austin, TX

Founded in 1980 in Austin, Texas, Whole Foods Market® is a Fortune 500 company and the leading natural and organic foods retailer and America's first national certified organic grocer. The Company had sales of \$5.6 billion in fiscal year 2006 and currently has 188 stores in the United States, Canada and the United Kingdom. The Whole Foods Market motto, "Whole Foods, Whole People, Whole Planet™" captures the company's mission to find success in customer satisfaction and wellness, employee excellence and happiness, enhanced shareholder value, community support, and environmental improvement. Whole Foods Market employs more than 40,000 team members and has been ranked for nine consecutive years as one of the "100 Best Companies to Work For" in America by FORTUNE magazine.

