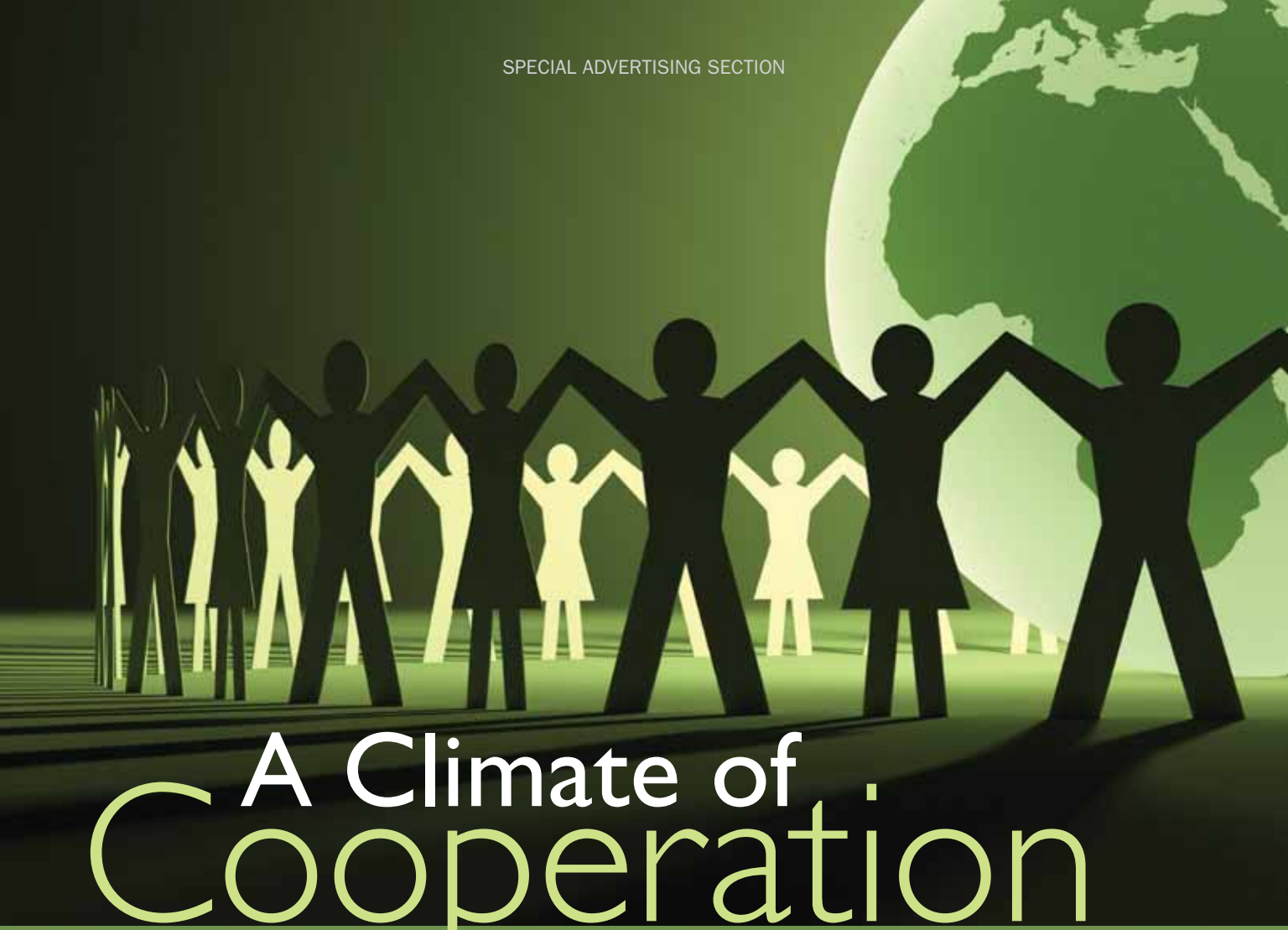

A Climate of Cooperation

Through the EPA's Climate Leaders program, the nation's businesses are working together to reduce greenhouse gas emissions.

By Lynn Morrissey

CLIMATE LEADERS
U.S. Environmental Protection Agency

In the global effort to reduce carbon dioxide and other greenhouse gas emissions, small steps forward can add up to major progress.

At one of PepsiCo's Gatorade plants, for example, a single facility's advances in efficiency mean that it takes 26% less natural gas to produce a gallon of product today than in 2004. That amounts to a huge savings for the Chicago-based business, given the escalating price of natural gas, and a smaller carbon footprint. At a General Motors (GM) plant in Saginaw, Mich., simple changes, such as operating ventilators on an as-needed basis, have led to a 40% reduction in the use of heating fuel over the last three years. And American Electric Power (AEP) has a plan in place to offset greenhouse gas emissions by capturing methane gas emitted by livestock from some 200 local farms.

These represent just three of a total of 174 companies to date that have joined forces with the U.S. Environmental Protection Agency's Climate Leaders program to voluntarily reduce greenhouse gas emissions. Launched in 2002, the Climate Leaders program is an industry-government partnership that works with companies to develop long-term strategies for reducing greenhouse gases. By setting aggressive goals, sharing information on best practices and encouraging companies to take more proactive stances, the program is developing a strong track record of reducing emissions. And new tools launching this month target the unique data collection needs of small companies so that they can better track and monitor their own greenhouse gas emissions. Taken together, the reduction goals set by Climate Leaders partner companies, large and small, will remove a total of some 48 million metric tons of carbon dioxide equivalent from the atmosphere per year relative to typical improvement activities.

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"Partnering with a credible third party such as the government to work with you to ensure the credibility of your reductions and goals is more important than ever," says Climate Leaders Program Director Jim Sullivan.

Partner companies commit to reducing their impact on the global environment by completing a corporate-wide inventory of their emissions based on a quality management system, setting ambitious reduction targets and annually reporting their progress to the EPA. "The beauty of the program," says Sullivan, "is that through active program participation and Agency feedback and technical assistance, companies create a credible record of their accomplishments and receive EPA recognition as corporate environmental leaders."

PEPSICO: NEW PATHS TO PRODUCTION

At PepsiCo, management has found that reducing greenhouse gas emissions requires taking action in a wide range of areas, depending on the industry. "Our aspiration is to be fully integrated with our supply chain and stakeholders, so we are all working together to make the world in which we operate better environmentally and socially, with less impact on our planet," says Jim Lynch, senior vice president, PepsiCo Chicago Supply Chain. "It's part of what we call Performance with Purpose, and PepsiCo is committed to minimizing the impact of our businesses on the environment, including reducing our direct and indirect greenhouse gas emissions through energy conservation, technology and use of clean energy sources." The company's environmental initiatives focus on three areas, outlined below.

Resource Conservation: The company has set reduction goals and has routinely tracked its use of electricity, fuels and water. It has reduction targets of 20% for electricity, 25% for fuels and 20% for water by 2015, compared to its 2006 baseline year. "From 2004 to 2007, we have had a reduction in resource use per pound or gallon of product of 26% for fuels, 24% for electricity and 12% for water," says Lynch.

Technology: To achieve and surpass its goals for reducing energy use and the resulting emissions, the company does not rely on off-the-shelf tools, but instead turns to innovative solutions. "We have teams scouring the globe to identify and implement emerging technologies that can help us," says Rich Schutzenhofer, vice president, PepsiCo Chicago Supply Chain Engineering. "Often we find that the standard tools don't work as well as we need them to, so we have to invent ways to make them function more effectively in our applications."

Green Buildings: Buildings use an enormous amount of energy and contribute significantly to greenhouse gas emissions, accounting for almost 40% of all carbon dioxide emissions, according to the U.S. Green Building Council (USGBC). EPA's Energy Star program has data that are even more compelling, showing that buildings may be responsible for as much as 50% of U.S. greenhouse gas emissions.

To address this issue, PepsiCo is dedicated to building and occupying environmentally responsible buildings and uses the USGBC's Leadership in Energy and Environmental Design (LEED) rating system for green buildings. The company has partnered with Haskell — America's Green Design-Build Leader® — on the design, construction, and LEED certification process for its building projects. "PepsiCo Chicago currently has three LEED-certified buildings, including the two largest food and beverage manufacturing plants to achieve the prestigious LEED Gold certification," says Schutzenhofer.

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> PepsiCo Chicago Supply Chain

GENERAL MOTORS: PRACTICING EFFICIENCY

At General Motors, initiatives to reduce greenhouse gases are global and comprehensive of the entire corporate energy, water and waste footprint. A casting plant in Bedford, Ind., for example, has implemented a project to optimize the aluminum melting system. "The project encompassed evaluating the entire melting process and developing opportunities in safety, waste elimination, raw materials, productive labor and energy," says Kristin B. Zimmerman, Ph.D., manager, environment, energy and safety policy. Key elements of the project include:

- A new furnace with a direct-charge system to melt low-cost scrap aluminum
- Reducing double handling of material and eliminating the scrap crusher
- Relocating the melting furnace closer to the casting process
- Shutdown of old, inefficient furnaces
- Simplifying the process flow

"The overall project cost $4.5 million and achieved a one-year payback based on three metrics — energy, material and labor costs," says Zimmerman. Additional benefits include a three-year cost avoidance of more than $2.75 million in furnace maintenance. The plant reduced direct energy use for holding and melting by over 30%. It also achieved direct and indirect energy improvements by improving the efficiency of melting and holding aluminum, eliminating the double melting of 18 million pounds of aluminim and saving over 620,000 pounds of aluminum formerly lost to metal oxidation. "The total energy reduction exceeds 390,000 million BTUs, and the total carbon dioxide reduction exceeds 87 million pounds per year," she says.

Another GM plant in Saginaw, Mich., has implemented a series of projects over a three-year period that improve the performance and energy consumption of the

building's heating and process ventilation systems. The projects include:

- An energy management system to control start-up and shutdown of ventilation equipment
- Shutting down ventilation units when they're no longer required
- Operating only the ventilation needed for processing exhaust
- Utilizing waste heat by recirculating air near the roof
- Replacing inefficient steam heat with natural gas

"During the last three heating seasons, the Saginaw casting plant reduced the seasonal heating energy by over 40%," says Zimmerman. The casting plant has set new records for reducing energy consumption during non-production weekends and holidays. Total carbon dioxide reductions amount to more than 75,000 metric tons per year.

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> General Motors

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>
> Dennis Welch
> Executive Vice President – Environmental, Safety, Health and Facilities
> AEP

AMERICAN ELECTRIC POWER: OFFSETTING CARBON EMISSIONS

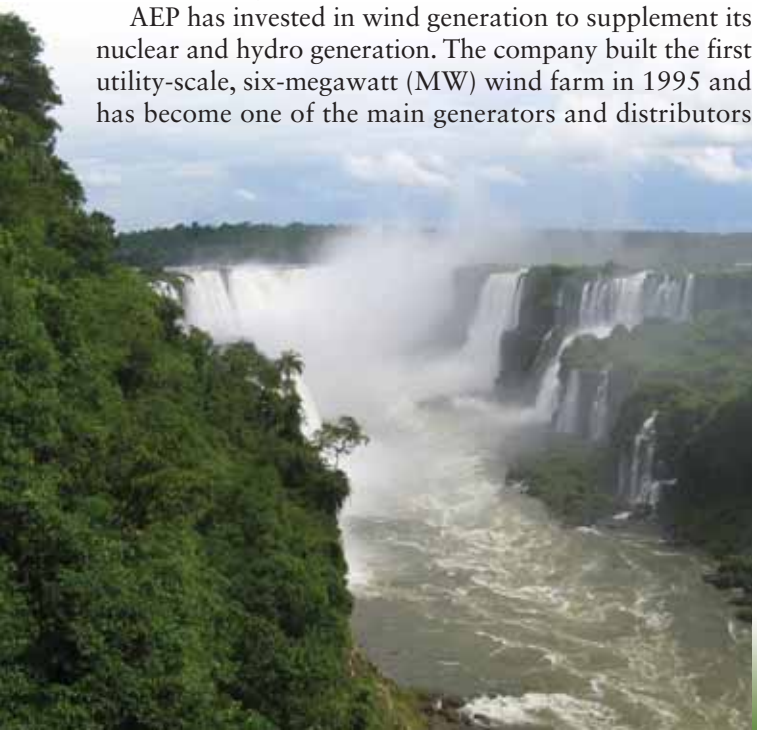
AEP, an EPA Climate Leaders partner, recognized more than a decade ago that the emissions of its coal-fueled fleet of power plants, including greenhouse gas emissions, would have a significant impact on the future of the company. "In order to get out in front of anticipated regulations, AEP faced the challenge early with innovative, first-of-a-kind approaches designed to allow the continued use of coal to generate electricity in a carbon-constrained world," says Dennis Welch, executive vice president – environmental, safety, health and facilities.

In the late 1990s, AEP developed carbon-offset programs to protect and restore more than 4 million acres of tropical rainforest in Bolivia and Brazil. The company has invested nearly $27 million in "terrestrial sequestration" projects in the U.S. and South America, enough to offset more than 20 million metric tons of carbon dioxide over the next 40 years. Additionally, the company has planted 63 million trees through 2006 as part of an extensive program to restore former strip mines, return farmed-out agricultural lands to forest and preserve wildlife habitat. AEP continues to plant trees at the rate of 350,000 a year.

AEP has invested in wind generation to supplement its nuclear and hydro generation. The company built the first utility-scale, six-megawatt (MW) wind farm in 1995 and has become one of the main generators and distributors of wind energy in the U.S. AEP operates 310 MW of wind generation and purchases an additional 1,053 MW. In April 2007, the company announced a voluntary plan to add 1,000 MW of new wind or renewable energy by 2011 as a component of its comprehensive emissions strategy. The addition of renewable energy to AEP's energy portfolio avoids the increase in greenhouse gas emissions that would occur if the company relied on traditional fossil fuels to meet growing customer demand.

In June 2007, AEP announced an agreement to support the largest agricultural carbon offset program in the nation, one that will capture and destroy methane — a potent greenhouse gas — emitted from some 200 farms in the Midwest. Under the agreement, AEP will purchase 4.6 million carbon credits between 2010 and 2017, generated by capturing methane on livestock farms. The methane will be burned, converting it to carbon dioxide, a less harmful greenhouse gas than methane, and water. "By capturing methane and converting it to a less-potent greenhouse gas, farmers benefit because of an income stream, and we benefit because we reduce our carbon footprint. It's a win-win situation," says Welch.

"The changes we make are good for us, but we don't look at it that way: They're the right thing to do, and they're right for the environment."



To learn more about how your company can become a Climate Leader, visit *www.epa.gov/climateleaders*.

Web Directory

American Electric Power
www.aep.com

General Motors
www.gm.com

PepsiCo
www.pepsico.com