

BY JERRY LYNCH

SEEDING SUSTAINABILITY

at General Mills



At General Mills, going green has included establishing a comprehensive set of global environmental sustainability goals.

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When the nation's sixth-largest food company set an ambitious agenda for operating sustainably, the environmental impact was dramatic and the savings substantial. Here's a look at the progress General Mills has made—and a preview of what's ahead.

Whether it's washing glass jars more efficiently in Hannibal, Mo., recycling paperboard in Albuquerque, N.M., or composting food scraps at the corporate headquarters in Minneapolis, Minn., General Mills' practices and policies are informed by a broad-based and ongoing commitment to sustainability.

In fact, the company's commitment to sustainability dates back decades. As early as the 1930s, General Mills was using recycled paperboard packaging, and the Green Giant Brand was using crop rotation practices. This foundation has evolved into integrating environmental sustainability initiatives into other areas of business.

Today, General Mills is working toward its aggressive 2015 sustainability targets through multifaceted environmental efforts, which range from energy meter installations to water use reduction projects, from oat hull energy conversion to packaging improvements.

"The definition of sustainability sets a very clear objective for us," says Ken Powell, Chairman, Chief Executive Officer, General Mills. Sustainability means "meeting the needs of the current generation without compromising the ability of future generations to meet their needs," Powell continues.

"As the world's sixth-largest food company, we understand that a small action on our part can have a big impact elsewhere. We want that impact to be a positive one. The General Mills environmental mission is to protect and conserve the natural resource base on which its business depends. We build consumer loyalty, societal trust, and shareholder value by integrating sustainability into our strategies, our operations, and our products," says Powell.

Progress Toward 2015 Sustainability Goals

Since 2005, General Mills has set global environmental sustainability goals in the areas of water, energy, greenhouse gases, and solid waste. In 2010, the company established new, more aggressive goals including a North American transportation goal and a packaging metric.

By 2015, General Mills aims to

achieve the following goals:

- Reduce the rate of water use by 20%,
- Reduce solid waste generation by 50%,
- Reduce energy usage by 20%,
- Reduce greenhouse gas emissions by 20%,
- Reduce the amount of transportation fuel used to ship a pound of product by 35%, and
- Improve 40% of its packaging volume (with improvement assessed on the basis of company-set indicators).

The company is already more than halfway toward achieving its 2015 global sustainability goals on water, solid waste, and packaging.

"And we continue to drive down our energy consumption, greenhouse gas emissions, and use of transportation fuel," says Larry Deeney, Environmental Sustainability Director, General Mills. "Between fiscal 2010 and fiscal 2011, General Mills reduced the amount of solid waste generated by 7,000 metric tons, cut water usage by more than 550,000 cubic meters, lowered greenhouse gas emissions by 10,000 metric tons, and reduced total energy use by nearly 50 million kilowatt hours."

General Mills works continuously to improve environmental performance and further incorporate sustainable strategies, processes, and products throughout its operations as the examples that follow illustrate.

Conserving Water

According to The Nature Conservancy, by 2050, more than half of the world's population is expected to live in areas of high water stress. To help mitigate the effect of impending water scarcity, General Mills is committed to reducing its water usage, and the company is more than halfway to reaching its 20% reduction goal, recently reporting an 11% reduction measured from a 2006 baseline.

In Irapuato, Mexico, General Mills is encouraging water conservation by working with contract farmers, who are using drip irrigation to grow vegetables for the *Green Giant* brand. By allowing water to slowly drip to the root of plants,

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Drip irrigation practices are in place on more than 40% of the acreage farmed by General Mills contract farmers in Irapuato, Mexico, where vegetables for the Green Giant brand are grown.

Photo courtesy of General Mills

drip irrigation consumes only half the water of conventional furrow irrigation, generating an estimated savings of 1.1 billion gallons of water annually. To help farmers adopt this practice, General Mills has provided them with interest-free loans to purchase equipment. Drip irrigation practices are now in place in about 43% of the acreage used by General Mills contract farmers in this region.

An employee-led initiative at the General Mills plant in Hannibal, Mo., has simplified the mechanics behind the glass jar washing process on the *Old El Paso* sauce line. This improvement saves an estimated 1.5 million gallons of water per year and 1,000 million BTUs of energy to heat that water.

Reducing Packaging

General Mills' long legacy of environmentally friendly packaging has served the company—and the planet—well. Today General Mills is among the largest users of

post-consumer recycled paper packaging in the United States and continues to bring innovative packaging solutions to the marketplace.

The company set its first packaging goal in 2010 and has improved 27% of packaging volume, putting the company two-thirds of the way toward its 40% goal. Four key indicators are used to assess improvement: packaging weight; recycled content and recyclability; renewable content and the ability to compost; and truck-loading efficiency.

General Mills recently developed a new proprietary cereal packaging technology that allows for packing cereal more densely. The technology allows the cereal to settle on the line, which means that each box can be filled with 10% more cereal and packaging size can be reduced. This saves more than 200,000 pounds of paperboard each year. Plus, the smaller packaging footprint means more boxes can fit on each truck. This will reduce trucking needs by 10% annually, saving fuel and reducing the company's

carbon footprint. The new *Cheerios* boxes began appearing on club store shelves in February 2012.

Managing Solid Waste

According to the U.S.

Environmental Protection Agency, Americans produced about 250 million tons of solid waste in 2011, and approximately half of this waste is disposed in landfills. General Mills is actively pursuing opportunities to recycle and find new uses for unwanted by-products or materials. As noted in the 2012 Global Responsibility Report, General Mills has achieved a 34% reduction in its solid waste generation rate.

The most effective strategy is to limit the amount of waste created in the first place. General Mills spends a lot of time, via its Holistic Margin Management initiative and Continuous Improvement efforts, to identify and, more importantly, remove waste from its operations.

A facility in Albuquerque is currently recycling 90% of its output. Team members there worked with local recyclers to expand the plant's recycling program to include corrugated boxes and also carton cores, sacks, and other items that typically get tossed out. The arrangement has enabled the plant to reduce trash pick-ups, generate \$2,500 per month in recycling revenue, and shrink landfill output by 80%.

General Mills recently installed a new system at its Wellston, Ohio, facility, which heats pizza toppings so they will adhere better to the pizza prior to the freezing process. This system will save thousands of pounds of cheese and other pizza toppings from going to waste each year, an estimated annual cost saving of \$200,000.

And on the Minneapolis campus, an organics recycling program collects food waste from the employee



Technology that allows General Mills to pack its cereal more densely has translated to savings of 200,000 pounds of paperboard annually.

Photo courtesy of General Mills

Seeding Sustainability at General Mills

General Mills works continuously to improve environmental performance and further incorporate sustainable strategies, processes, and products.



A General Mills facility in Albuquerque has expanded its recycling program to the point where it is recycling 90% of its output. Photo courtesy of General Mills

cafeteria, Betty Crocker Kitchens, and Bakeries & Foodservice Culinary Center and turns it into compost. Two tons of food waste is composted every week.

Saving Energy

Renewable energy sources such as wind, solar, and biomass are playing an increasingly key role in helping General Mills minimize its environmental footprint and be good stewards of the earth's resources. The company is continually taking steps to cut energy usage and is one-third of the way toward the 20% goal.

A facility in San Adrian, Spain, gets all of its electricity—and a third of its overall energy—from renewable sources such as wind power. Solar panels were also recently installed on the roof and will produce more than 1.5 million kilowatt hours of electricity.

A distribution center in Methuen, Mass., became the first General Mills facility in the United States to produce its own electricity from solar panels. The panels atop the warehouse produce enough

electricity to supply 55% of its annual electricity needs—80% of its consumption in the summer and 40% during the rest of the year.

Cutting Down on Greenhouse Gases

According to the U.S. Environmental Protection Agency, industrial and

commercial energy use accounts for nearly 30% of total U.S. greenhouse gas emissions. As a leading food company and a participant in the Carbon Disclosure Project, General Mills is committed to implementing new systems and procedures that will reduce the company's greenhouse gas emission rate, and is just under half-way to its goal of a 20% reduction.

With guidance from General Mills, more and more farmers from central Mexico are using organic compost from nearby chicken farms—instead of synthetic fertilizer—to spread on broccoli, cauliflower, carrots, and celery. The switch is estimated to reduce greenhouse gas emissions by 12,000 tons per year, the equivalent of taking 2,000 cars off the road.

General Mills is producing energy from oat hulls left over from the milling process at its Fridley, Minn., facility, which makes oat flour used in *Cheerios* and other products. The biomass burner produces 90% of the steam needed to manufacture oat flour, reducing the plant's carbon footprint by 21%. (See Sidebar on page 41 for more details.) »»

Solar panels on a General Mills distribution center in Methuen, Mass., generate 55% of the electricity the facility needs to operate. Photo courtesy of General Mills



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Improving Transportation Efficiency

The company is also working to reduce its transportation footprint by reducing road miles and consumption of diesel fuel, with a reduction goal of 35%. General Mills rolled out a new computer-based transportation system that more efficiently consolidates schedules and selects the best way to deliver products from production lines to distribution facilities. This centralized system is expected to save more than \$2 million and millions of gallons of fuel each year.

Internationally, the company is consolidating heavier canned *Green Giant* vegetables produced in France with lighter *NatureValley* bars and *Old El Paso* Mexican meal kits made in Spain. This means General Mills is able to pack sea-going containers more efficiently and transport them to the United Kingdom and Ireland. Already more than 2.3 million road miles per year have been trimmed by shipping 90% of UK-bound goods by sea. This initiative will reduce an additional 150,000 road miles by allowing more goods to be shipped directly to Ireland by sea.

Sustainability Is Good Business

Being a responsible corporate citizen—socially, economically, and environmentally—is at the core of General Mills Nourishing Lives mission, culture, and business strategy.

“We believe that doing well for our shareholders goes hand in hand with doing well for our consumers, our communities, and the planet,” continues Powell. “At General Mills, adhering to sustainable practices is not only the right thing to do, it’s also good business. We believe this effort will drive financial, strategic, and competitive advantage.”

Sustainability is very purposely seeded throughout the organization—from manufacturing facilities around the globe to the corporate campus in Minneapolis. The responsibility to steward the planet doesn’t live within a single “green team” at General Mills. Instead, the company



Careful mapping of cargo shipments has yielded fuel savings for the company.

Photo courtesy of General Mills

operates with the expectation that its global employee base of 35,000 employees looks for opportunities to integrate sustainable strategies, products, and processes into operations.

Employees work collaboratively to minimize the environmental footprint of General Mills’ businesses. This includes efforts to further embed sustainability into the use of raw materials, manufacturing methods, selection of packaging, and distribution of products. The focus is on providing customers and consumers with the best quality products while working to sustain the environment.

Almost all of the company’s plants have Reduce, Eliminate, All Losses (REAL) Time Sustainability Teams that dedicate time to identifying opportunities to make

operations more eco-friendly. These teams spend a minimum of one hour a day looking for opportunities to drive out waste, minimize water use, reduce energy consumption, and make progress against the company’s global environmental sustainability goals.

For example, employees at a General Mills plant in Belvidere, Ill., saved the facility 421 tons of waste and identified 40 efficiency opportunities by systematically evaluating every facet of its production processes with a sustainability lens.

In addition to internal metrics, General Mills has begun asking suppliers to complete an environmental scorecard which asks for data on energy use, water use, and solid waste generation that is associated with ingredients and materials

‘Scoop showers’ installed in General Mills’ Häagen-Dazs ice cream shops keep ice cream scoops clean without requiring that water run continuously. Photo courtesy of General Mills



used to make its products.

“With our supplier scorecard, we will be able to make a greater impact on the total environmental footprint,” says Steve Peterson, Sourcing Director, General Mills.

One of the key levers General Mills uses to help drive sustainability deeper into its business is holistic margin management (HMM). HMM is a broad company strategy designed to understand what drives value for the consumer and eliminate non-value-added costs and activities throughout the supply chain. The savings are then captured and reinvested to further grow the business. In January the company announced a goal of accruing \$4 billion in HMM savings between fiscal 2010 and fiscal 2020.

Often many of these savings have an environmental benefit. General Mills has hundreds of initiatives under way to drive value by focusing on the things that matter to consumers and reducing waste across operations.

A team at a General Mills plant in Covington, Ga., has installed more than 40 energy meters on several pieces of major equipment. The meters enable plant personnel to better understand the impact of system changes using real-time energy consumption data. Thanks to the energy meters and their real-time tracking abilities, the Covington plant saves an estimated \$2.5 million per year. Learning from the Covington metering project will be applied at other General Mills manufacturing facilities, expanding the energy savings across the company.

Thirty of the company's Häagen-Dazs shops have installed “scoop showers,” which keep ice cream scoops clean without running the water tap all day. The innovation, which reduced water use by 75%, is estimated to save \$1 million annually and is now being installed in company-owned Häagen-Dazs shops around the world.

At a facility in Labatut, France, where *Green Giant* vegetables are

packed, the can supplier is now located alongside the manufacturing facility, which reduces transportation by 220,000 kilometers and saves the plant \$1.5 million dollars a year.

The company expects HMM to continue to be a significant driver to

reduce waste and improve efficiency while benefiting the environment.

Sustainability Takes Root

The General Mills legacy of corporate citizenship is deeply rooted in the company's culture and its actions. »»

Using Oat Hulls for Energy

One of the most recent and visible successes from General Mills' sustainability journey is the new biomass burner at its Fridley, Minn., flour mill. Brought online in January 2011, the biomass unit burns oat hulls left over from the milling process to produce about 90% of the steam needed to heat the plant and produce oat flour used in making *Cheerios* and other products.

For decades, General Mills had been repurposing the 80,000 tons of oat hulls left over from the process of milling oats to make oat flour. They had been used as animal feed, as an ingredient in nylon and plastics, and to make paper and packaging products. The company continued to search for an even more economical and beneficial use for the oat hulls for more than 20 years.

Company operations personnel knew that oat hulls have the same BTU value, or energy potential, as bituminous coal. Team members had been gathering information and experience about using oat hulls as a fuel, but much of that information did not transfer. Most biomass burner operations use biomass that may include oat hulls and other plant material in order to generate electricity or a specialized type of heat. But General Mills was seeking a system that could use 100% oat hulls to generate steam for the processing system.

This approach of using entirely oat hulls was new to the industry and to the company. The biomass burner has addressed two compelling business needs—saving money and reducing General Mills' footprint on the environment for years to come. Burning oat hulls on site reduces reliance on natural gas, saving nearly \$400,000 annually, and cuts the company's carbon footprint by more than 20%. And since oat hulls are burned at the same location where they are produced, the environmental impact and cost of shipping them to a burner is eliminated.

Besides producing steam and heat for the plant, the oat hulls are also used by a nearby biomass plant to power approximately 17,000 homes a year.

The benefits from this project continue beyond energy. After the oat hulls have been burned, the resulting ash is captured and distributed to nearby farmers who use it as a nutrient supplement to improve the soil on agricultural land.

Accomplishments such as the biomass burner inspire and challenge all General Mills employees to dream big when developing creative solutions to make General Mills an even more sustainable company.



A biomass burner at General Mills' Fridley, Minn., flour mill uses 100% oat hulls to generate steam for operating the plant. Photo courtesy of General Mills

Seeding Sustainability at General Mills

General Mills is teaming with wheat growers in Eastern Idaho to study the environmental impact of wheat production.

Photo © iStockphoto.com/melhi



General Mills has a history of working closely with farmers to promote sustainable agriculture—whether through its organic *Cascadian Farm* brand, *Green Giant* vegetables, or the many growers who provide various grains to make other products. *Green Giant* was an early adopter of crop rotation practices in the 1930s and was among the earliest to use best-in-class pesticide management six decades ago.

Today the General Mills agricultural research facility in Le Seuer, Minn.—the valley where *Green Giant* was created—has continued to develop and improve crop breeding and agronomic practices that benefit farmers and the environment. In fact, in the last 35 years, improved hybrids through conventional breeding have more than doubled the yield of sweet corn while reducing the acreage planted.

General Mills is also building on this commitment through its work with two organizations to measure and improve the environmental footprint of growing several crops. Through Field to Market, the Keystone Alliance for Sustainable Agriculture's initiative, General Mills has launched a three-year pilot with 25 wheat growers in Eastern Idaho to study the environmental impact of wheat production. Ultimately, the program will allow growers to share best

practices in nutrient management, pest management, and other farming practices that will lead to more environmentally sustainable and economical production of wheat.

A similar effort is under way in western Canada. There General Mills is working with grower groups to study two decades of sustainability indicators—land use, soil loss, energy use, and climate change—on eight different crops including wheat, oats, lentils, canola, peas, and flax.

Lessons Learned

"While we're proud of our sustainable heritage, we understand that there is much work ahead on our journey," says Peterson. "Along the way, we have learned a few valuable lessons and continue to learn more every day." Here are three of the most significant.

• **Total employee engagement feeds the next generation of sustainability ideas.** Three employees in the technical research center near Minneapolis started a self-directed pilot project to compost the various food products sent to them for testing. The concept of composting waste quickly spread to several more labs and then throughout the main campus. General Mills is now collecting approximately two tons of organic waste per week. The project supplies compost to the Giving Garden at the corporate

headquarters, which donates nearly 1,400 pounds of organic vegetables to food shelves and meal programs in Minnesota each year.

• **Leverage innovation to reduce environmental footprint.** Many people know General Mills for its innovation in the grocery aisle, but the company also relies on innovation and the power of big ideas to improve environmental performance. A 20+year employee was the driving force behind the first-ever biomass burner project. He had a vision to tap into the energy potential of oat hulls—a new idea for the company and the food industry. The project recently received a top industry award for innovation and creativity, and it helps reduce reliance on natural gas.

• **Partner with industry to move one another forward faster.** General Mills is helping to lead an industry initiative to combat food waste in America. The goal of this cross-industry team, which includes food manufacturers, grocery retailers, restaurants, and foodservice outlets, is to identify strategies to reduce waste while increasing food donations to feed the hungry. Through this coalition, the company will identify and share best practices and strategies to keep perfectly good food out of landfills and get it into the hands of the hungry.

With the world's population projected to reach 9 billion by 2050, the demand for food is expected to double, raising questions about how it will be possible to produce enough to feed people in a sustainable way that works long-term. As scientists debate strategies about how the world's food supply will meet rising demand, most experts agree that more sustainable approaches to agriculture and responsible use of the world's resources must be part of the equation. General Mills is working to be part of the solution. **FT**

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