

From the Big Picture to the Factory Floor.

Our road to lower emissions



Inspired Brands.
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In a multifaceted, global manufacturing company, cutting greenhouse gasses means making companywide changes as well as facility-specific fixes. Six years into our efforts, we're celebrating modest success and setting our sights higher for the next decade.

Like many companies, Avery Dennison is working to reduce its greenhouse gas (GHG) emissions. Cutting GHGs is the right thing to do, given the realities of climate change. From a pure dollars-and-cents standpoint, lowering GHGs makes sense because it often means using energy more efficiently. And when companies generate their own power from low-carbon sources, it makes them more resilient by decoupling them from the vagaries of the grid.

We're currently focused on reducing the Scope 1 and Scope 2 emissions that come from powering our 196 facilities worldwide. Nearly all of the energy we use in our operations comes from electricity or natural gas. While we don't use as much energy (nearly 1.3 million megawatt hours in 2014) or emit as much in GHGs (459,520 tons in 2014) as many companies, our work is energy intensive, and there's ample opportunity for saving power and cutting emissions.

We first looked at reducing GHGs in 2009, at a time when we were completing several major acquisitions and restructuring our company as a result. One of our first challenges was deciding how to measure GHGs, a task made more complex by our reorganization. Should we measure emissions by individual products? By square inches of product produced? In the end, we opted to index emissions to net sales. We used 2005 as our baseline,

to align our metrics with those of other manufacturing companies. From there, we set our first goal: to reduce GHGs indexed to net sales by 15 percent by 2015.

2015 GOAL

↓ 15%

reduce GHGs indexed to net sales

Starting with the enterprise

Because our company is composed of three distinct units that each contain multiple lines of business, there's no silver bullet for reducing emissions companywide. Energy consumption and GHGs vary by business, region and facility. Still, we knew we could start with several big-picture improvements that were applicable across our operations.

We began by optimizing our footprint. We consolidated operations where possible and ended operations in some older, less efficient buildings.

From there, we focused on improving energy efficiency. After analyzing our global operations and developing ideas through multiple energy kaizens, we arrived at a number of simple solutions, like implementing correct shutdown procedures for idle equipment and monitoring air compressors for the tiny leaks that can make the compressors work harder. We also made capital investments, such as replacing metal-halide lighting with

fluorescents and LEDs and installing systems for recapturing waste heat from manufacturing processes.

These companywide measures soon began yielding results. But the diversity in our business means that each of our facilities has a unique energy footprint of its own. We knew that getting to our goal meant making specific adjustments in each one.

Zeroing in on facilities

One way we began honing in on specific sites was through a pilot program at three of our factories, where we're using wireless submeters to measure the minute-by-minute energy consumption of individual pieces of equipment. All three factories are part of our Retail Branding and Information Solutions (RBIS) business, which makes labels, tags and other branding solutions for apparel companies. RBIS factories make a perfect test case because they contain a broad array of equipment, such as small printing presses, digital printing units and label-weaving machines. Cutting energy consumption in those facilities means developing small-scale solutions for each machine on the factory floor.

The meters have been eye-opening. One revelation: machines we thought were "off" were still consuming energy in the background. We've now established policies and procedures that make sure that equipment doesn't consume a single kilowatt when we're not using it. In another instance, we discovered that most of the energy consumed by small machines that print text on clothing labels came from their dual computer monitors. We reduced the number of monitors to one, a move that's saving energy and, in a happy coincidence, also improving quality and productivity by making it easier for the machines' operators to focus.

These kinds of small, incremental changes have added up to solid savings in both energy and costs; in under a year, one of the facilities in our pilot program has already cut energy costs by 10 percent. We're now deploying submeters and sharing best practices across our enterprise.

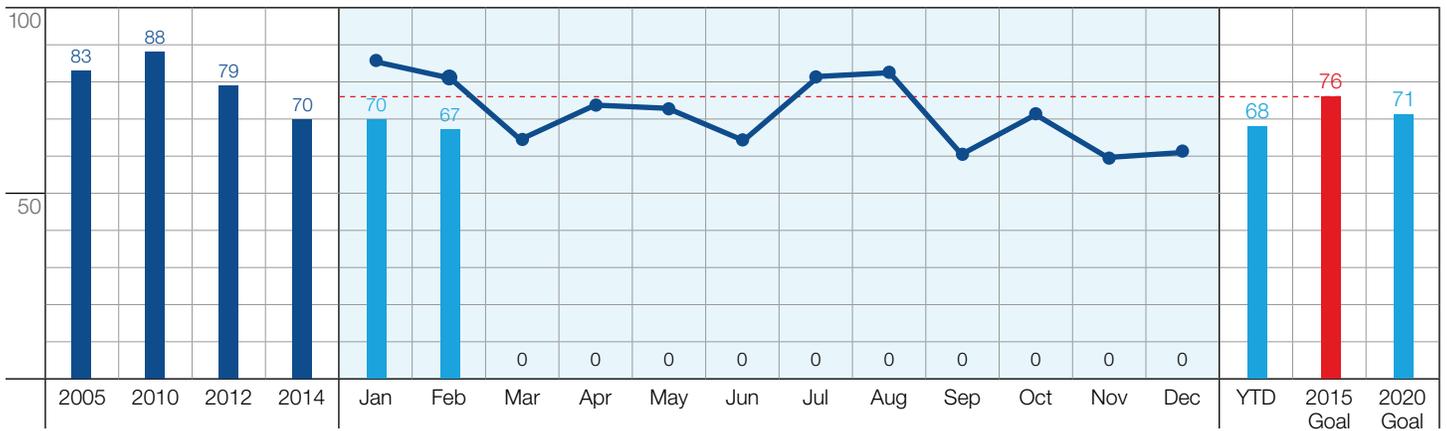


Through submetering at one facility

↓ 10%

in energy costs in under a year

Avery Dennison GHG (Tonnes)/\$MM Net Sales



Seeing results—and mapping the way forward

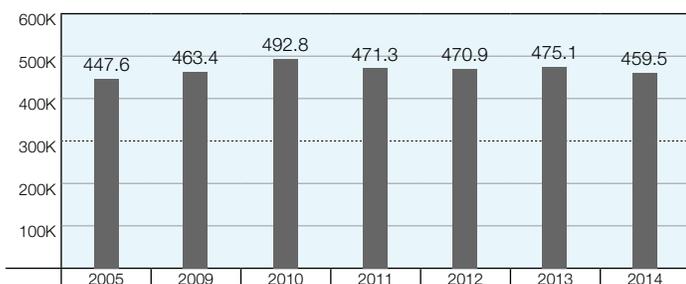
Six years after setting our companywide GHG-reduction goal, our efforts have produced results that surprised us. When we began, some in our company weren't sure we could improve on emissions while still operating a growing business. But like many companies, we've seen that it can be done, and that we're a stronger company for it. In 2015, we'll meet our goal of reducing GHGs indexed to net sales by 15 percent compared to 2005—right on schedule. In terms of absolute carbon emissions, we held our increase to 3 percent between 2005 and 2014 while posting a 22 percent increase in sales.

The key factor in our success to date? Communication. In a diverse, decentralized, global enterprise like ours, clear expectations, continuous conversation and sharing of best practices are essential to organizational change. Our facilities teams and business unit managers continue to learn from one another as we consider where to take our efforts from here.

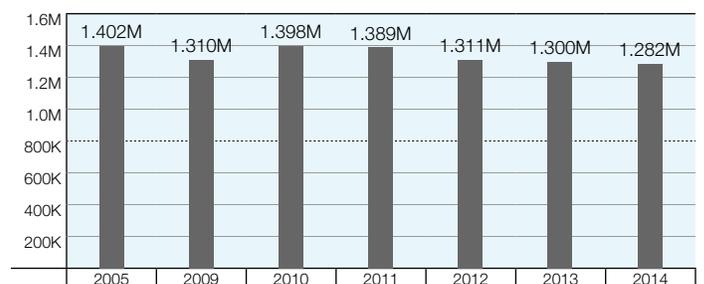
Looking forward, we're in the final stages of setting a new, more aggressive, absolute GHG goal for 2025. Meeting it will be challenging. Improving energy efficiency will remain as the foundation of our approach, but we won't achieve our goal through efficiency alone. We'll need to implement larger-scale solutions, including new energy sources. We're looking at all options, including renewable energy and fuel switching. We're also assessing the advantages of generating our own power from renewable sources. In addition to the reductions in GHGs and costs that could result, we're also interested in the risk-reduction afforded by generating our own power in parts of the world where the grid is unreliable.

Based on our experience to date, we know our solutions will vary by site and that, in most cases, we'll need a portfolio of renewable energy sources, rather than one single source, to meet our needs. Over the next decade, we'll continually reassess our options, which we expect to broaden as clean energy technology evolves and energy-storage capacity increases.

Absolute CO₂e Emissions (Tons)



Energy Consumption in MWh



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The road beyond Paris

Cutting emissions while still growing as a company is one of the defining business challenges of the 21st century. And steering a multinational manufacturing company toward a carbon-free future is complicated. We don't have all the answers, but we know from our experience so far that good answers exist—answers that allow companies to grow and create value while still doing their part to mitigate climate change. The talks at COP21 have the potential to dramatically raise expectations for emissions reduction on the part of companies everywhere. We're eager to see what agreement comes out of Paris and look forward to being part of the conversation as the world moves toward a post-carbon future.

Read more about our sustainability efforts at

averydennison.com. ■

