



ENVIRONMENTAL AUDITS

THROUGH NEW PUBLIC-PRIVATE PARTNERSHIPS, LOCAL
BUSINESSES ARE FINDING WAYS TO HELP REDUCE WASTE
AND GREENHOUSE GASES WHILE BOOSTING THE BOTTOM LINE.

BY JENNIFER WRAY

The proposal was intriguing, recalls Thomas Pendrey, vice president and general manager at G&J Pepsi Cola Bottlers. In 2009, Pendrey was approached by executives from the Solid Waste Authority of Central Ohio (SWACO) and American Electric Power (AEP) Ohio about a pilot program intended to help manufacturers increase productivity, reduce their environmental impact and realize significant cost savings in the process. G&J had already taken strides toward greener operations, but was interested in doing more.

"I think part of what was intriguing was to test what we were already doing versus how E3 might be able to help us going forward. We could validate some of our process improvements we've made in sustainability efforts and reduction in fuel consumption in many different ways," Pendrey says. "But we also approached it as a learning opportunity so we could find out other best practices; we could have others look inside our business and provide insight into how we can improve on what we were already working on."

The company joined five other Columbus-area manufacturers in signing on to E3: Economy, Energy and Environment. G&J already recycled materials such as aluminum, plastics, stretch wraps, banding materials, pallets, drums, barrels and metal. "We'd installed many different things in the operation to use less fuel in terms of how we heat or cool our facilities or use energy," says Pendrey. G&J had instituted a no-idling policy for its fleet; it also moved to collect syrup rather than let it enter the sewer or water systems.

Still, consultants found room for improvement. Ultimately, E3 identified 18 areas where G&J could save \$155,000 annually. The company pursued 11 of them, five of which were related to lighting. The E3 improvements, which cost \$100,000, are expected to yield at least \$87,000 in savings each year and reduce carbon dioxide emissions by 868 tons. "So that \$87,000, for us, we looked as a 15-year save," says Pendrey. "You look at \$87,000, and over 15 years, you get \$1.3 million in savings," a 13:1 payback.

G&J wasn't the only Central Ohio company to see positive results from E3. Participants, each of whom paid a \$3,000 fee, realized average potential savings of \$880,000 annually per company. All have implemented or are implementing improvements with an average savings of nearly \$150,000, collectively yielding \$1.7 million in energy and \$2.6 million in environmental savings, according to the Mid-Ohio Regional Planning Commission (MORPC).

"To me, the implementation rate, even though it's fairly low, is such a large multiple of their investment, such a large multiple of the cost, that by any measuring stick, it's either a rousing success or an unbelievable success," says Greg Hume, program manager of energy and environmental services for TechSolve, an E3 consultant.

Columbus was one of two pilot cities for E3, along with San Antonio. The coordinated federal and local initiative has since spread to 21 states. E3's national partners are the U.S. Environmental Protection Agency (EPA), Department of Commerce, Department of Energy, Department of Labor and the Small Business Administration (SBA).



A NEW PARTNERSHIP

While E3 has logged impressive successes in a relatively short time, proponents have pushed ahead with a new relationship they say will yield additional benefits to business. Known as ME3, the MORPC-administered effort joins E3 with the Ohio By-Product Synergy (BPS) Network, which helps manufacturers find materials savings (hence the “M”), with waste from one process becoming feed in another.

ME3 is supported by an EPA grant in partnership with AEP Ohio, Columbia Gas of Ohio, Duke Energy, TechSolve, the city of Columbus, the Ohio State University Center for Resilience, the University of Dayton Industrial Assessment Center and the U.S. Business Council for Sustainable Development.

“Really, the goal was to integrate the two programs to reduce greenhouse gas emissions and landfill disposal while conserving energy and materials,” says Ohio BPS Network Director Megan Moses. Says Jerry Tinianow, director of MORPC’s Center for Energy and Environment, “Each one was great on its own, but we thought to integrate them, we could achieve even greater savings for the participating companies.”

Ohio BPS Network

You’ve no doubt heard it before: “One man’s trash is another man’s treasure.” It’s a cliché, to be sure, but perhaps the most apt description of the Ohio BPS Network’s greatest promise: helping businesses transform their manufacturing waste into feedstock for other ventures. By diverting waste from the landfill, businesses can save on disposal costs and may also make a profit. On the other end, some manufacturers are able to replace raw production materials with less-costly materials.

The network, launched in 2010 with a \$50,000 grant from the Ohio Department of Natural Resources, is facilitated by the OSU Center for Resilience and the U.S. Business Council for Sustainable Development. “Byproduct synergy is not a new concept. It’s just new to Central Ohio,” says Tinianow. “The thing about a network is, instead of having two companies talking, you have 20 or 30 companies all submitting information at the same time, and you begin to see patterns that you may or may not be able to see when there are just two companies talking.”

Network members include Armstrong Industries, Dow Chemical, Marathon Oil, Procter & Gamble and Worthington Industries. “The motivation for them is pretty simple: First, it’s an economic motivation,” says Center for Resilience executive director Joseph Fiksel. “They’re generating wastes, they have to pay tipping fees to get rid of those wastes,

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and they realize that those wastes still have residual value—maybe not to them, but to someone else. In the past, they’ve never taken the trouble to search for outlets who could use the stuff, but the concept of the network makes it much easier to identify those opportunities. Plus, we were able to quantify for them the savings that they would incur and the environmental benefits they would incur.”

According to MORPC, by diverting solid waste into industrial feedstock, network members save a collective \$3.5 million a year as well as cut water use and greenhouse gas emissions in their supply chains. Marathon Oil was able to divert sludge that would have otherwise gone to the landfill and instead sent it to Barnes Nursery for use in composting. “We have many, many stories of companies that never realized they could purchase waste instead of a raw material. In some cases, they’re shipping the raw materials from overseas or far away, and right around the corner, someone may be generating a waste stream that has exactly the properties they need,” Fiksel says.

E3

In the E3 portion of ME3, participants start out talking about the goals and their commitment to implement at least some of the recommendations that arise, says Erin Miller, environmental steward for the city of Columbus. “If they have no interest in implementing anything, then we don’t really want them to be a part of the program,” she says.

Then a crew from Cincinnati-based nonprofit TechSolve comes in. One of the major roles for TechSolve, an Edison Center and

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center of excellence for process improvement, is to work with manufacturers and help them become more competitive. “That’s basically our charter, our mission in life,” says Hume. Typically, TechSolve performs a greenhouse gas evaluation as well as a review of resources and waste.

After a lighting and equipment evaluation by the University of Dayton, TechSolve compiles the findings into a report, sits down with the company and reviews what resources are available to implement the recommendations. The city of Columbus partnered with the SBA so that businesses could access its tools and resources. “Small business loans, access to capital, those things were critical in implementing the recommendations that came out,” Miller says.

“We want to help customers identify opportunities where they can decrease their energy use through energy-efficient equipment” and other measures, says Michelle Cross, energy efficiency coordinator for AEP Ohio. Doing so helps the utility meet the requirements of Senate Bill 221, the 2008 law that created new energy-efficiency and peak demand standards for utilities. “It also helps us defer the building of new generation, which is expensive for AEP and is expensive for our customers,” she says. AEP Ohio has given \$4,000 grants to each participating manufacturer in its coverage area. Other utilities are in discussions to offer similar discounts, says Moses.

ME3

ME3 provides companies a one-stop shop for evaluation and assistance. E3 and the Ohio

BPS Network started working together in August; they hope to recruit 25 participating companies over the next three years. The U.S. EPA is providing nearly \$500,000 in grant support.

According to Fiksel, ME3 will reduce carbon dioxide emissions by 264,000 metric tons over the three-year period, including 120,000 metric tons annually by 2014; it will avoid 2,850 metric tons annually per manufacturer through E3 energy savings; and will also divert 5,000 metric tons annually, per business, through byproduct synergy.

In addition to the E3 services, manufacturers receive a free one-year membership in the Ohio BPS Network (worth \$2,500 to \$5,000 based on business size, sales and number of employees) as well as a one-year membership in the U.S. Business Council for Sustainable Development.

Miller says involvement in ME3 benefits not only businesses but also the local economy, because manufacturers that implement the recommendations will save money and therefore improve their financial stability. “From the city’s perspective, the healthier the manufacturers are, the stronger they are, the more people they’re hiring out of the community, the more vibrant the company is, the more tax base is being produced, and, at the



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same time, they're reducing their use of energy, which means we don't have to worry about peak demand as much and brownouts in the community, let alone greenhouse gas emissions reduction—because Mayor Coleman has signed onto the U.S. [Conference of] Mayors Climate Protection Agreement—so it's just a win-win-win for everybody," she says.

The federal funding for ME3 originated from "a desire to find new, innovative ways to reduce greenhouse gases," says Tinianow, but businesses need not be tree huggers—or even believe in climate change—to see benefits. "We're very sensitive to the fact that, for this program to succeed, it has to be very bottom-line oriented," he says. "Ideally, if we can convince someone, a business manager, to do it who says, 'look, I don't care anything for the environment, but I do want to save money for my company and do things that make sense economically'—if we can win those people over and produce a replicable model that other companies will follow, then we will have really succeeded."

Fiksel, who worked with Tinianow on the EPA grant application, says the pairing of E3 and the BPS Network is a complementary one. "If you can be more efficient with materials, you reduce costs, you reduce energy requirements; if you recover waste, you can generate more energy, you can offset materials use—there's a lot of interesting feedback loops there," he says.

The full cost of participating in ME3 (minus any utility grants as well as available discounts) would amount to \$30,000 to \$40,000—not counting the actual implementation of recommendations—says Tinianow. Participants pay a maximum of 48 percent of that cost, Moses says.

Nowadays, businesses want to see a payback of the investment in two or three years, a roughly 20 percent rate of return, Tinianow says. "We think we can produce those level of returns, but obviously, three years from now, we'll have a much better idea of it. And I think if we can demonstrate that, calculating the rate of return not based on the subsidized cost we're giving people, but the true cost they'd have to pay, then that's one of the purposes of the project.

"The real measure of success for this is going to be company No. 26, which is the company that, based on all the data we've been able to generate and the experience we've had, they go ahead and do it without any subsidy. That's the goal. That's how you know you've succeeded," Tinianow says. Under the project timeline, ME3 will be set to sign that company up in early 2014. ♦

Jennifer Wray is a staff writer for Columbus C.E.O.

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