Becoming more energy productive within the industrial sector

can spur job creation and cost savings. Midwestern companies are not just leaders in utilizing cutting-edge

solutions and technology, but they are also the manufacturers of the new, efficient equipment that firms around the world are demanding in their efforts to be more energy productive.

This series will highlight those initiatives and companies that are leading the nation in energy productivity.

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REVITALIZING THE MIDWEST THROUGH
INDUSTRIAL ENERGY PRODUCTIVITY

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Ford Motor Company: Dedicated to Continuous Improvement

Ford Motor Company has long been a leader in industrial energy productivity (IEP) in the Midwest—having reduced its energy use by 40 percent over the past decade.

"Ford has had a focus for the last quarter century on reducing our energy costs," says Jeffery White, a manager who's been working in Ford's energy efficiency division for two decades. "It's a continuous improvement philosophy, which meshes very well with Ford's production system."

Ford also has long been a partner with EPA's Energy Star Industrial Focus program having achieved Partner of the Year and Sustained Excellence status numerous times since 2005. "Continuous improvement is a mindset that carries through at Ford," said White.

A three-pronged strategy. Ford has improved energy efficiency through three distinct approaches — sustainability actions, operational improvements and capital projects. Sustainability projects, White describes, are known engineered actions that are incorporated into Ford's continuous improvement philosophy as existing facilities are retooled or new facilities are built. Improved processes such as 3-wet painting, Minimum Quantity Lubricant (MQL) machining, close capture of oil mist in machining operations and conversion of parts washers to chemical wash or ambient temperatures are examples of the best-in-class actions that are included in this category. Advances in manufacturing technology are the primary driver of these improvements.

Operational improvements are those actions that improve the day-to-day energy use by changing the culture and mindset of plant operations to focus on waste and improve efficiency. For example, compressed air is used in stamping facilities to power large presses that cut sheets of metal for assembly. Compressed air accounts for 12 to 15 percent of Ford's energy consumption with as much as 50 percent lost to generation losses and air leaks.

Finally, the third approach involves capital improvements to existing facilities. These actions include putting a variable frequency drive on a pump application, or cooling tower, and re-designing facilities to make use of free cooling when available. "Ford has been very aggressive in going after energy reductions in both industrial and commercial spaces," White notes. "For example, the company's engine plant in Lima, Ohio was retooled, which led to reducing energy requirements by over 50 percent." A large 16-acre lake in an adjacent stone quarry, which was converted into a thermal storage facility providing approximately 15,000 tons of cooling at significantly lower energy requirements contributed to the Lima improvements.

"Energy efficiency is a side benefit." All of Ford's IEP initiatives are by-products of Ford's commitment to improve the quality of its end products. "Energy efficiency is a side benefit and helps to build the business case for change," White explains. "It's driven by improvements in quality of the product as much as anything else."

Ford has made great strides, but it has more ambitious future goals: 25 percent improvement in energy efficiency from 2012 to 2017. Monthly reports on its progress, normalized against production and weather, will be published to keep track of progress against this goal.

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