

GREENING OHIO INDUSTRY

EXECUTIVE SUMMARY

Ohio's manufacturing sector is a prime first target for achieving energy savings and emissions reductions. Although many manufacturers are modernizing—becoming more high skill, high tech and efficient—Ohio's manufacturing industry remains heavily dependent on fossil fuels. To reduce our dependence on polluting fuel, most of which is purchased from outside Ohio, we can help our manufacturers better manage energy use. Savings could be reinvested in facilities, products, and workers. Despite significant job losses, manufacturing remains the largest sector in Ohio's economy, and our industrial sector consumes 33 percent of the energy we use, including large amounts of electricity from Ohio's electric power industry which ranks second only to Texas in carbon emissions. In 2006, Ohio manufacturers together spent an estimated \$5.6 billion on energy, averaging \$260,000 each. Carbon reduction strategies can help secure Ohio's place in the global market by making Ohio's manufacturers leaner and greener.

Industrial energy assessments could generate big savings, if implemented, with the added benefit of significantly reducing emissions in Ohio. Nationwide, manufacturers who undertake energy assessments implement fewer than 40 percent of recommendations because capital investments required for energy saving measures compete with other capital needs, and energy savings may not meet internal goals. Social benefits from reduced emissions are typically not considered. Our analysis of data from the University of Dayton Industrial Assessment Center found that only about half of efficiency recommendations were implemented. The total savings from over 6,000 recommendations made, if implemented, would have been \$105.6 million annually while the one-time cost would have been \$104.9 million. The average cost per manufacturer, around \$120,000, would have been recouped within slightly less than one year. More than 1,100 of the recommendations had no cost.

Nearly 70 percent of energy generated from fossil fuels at electric plants is lost during generation or transmission on our outdated grid. This inefficiency translates into unnecessary toxic and carbon emissions, and a waste of scarce resources. Every kilowatt-hour of electricity we use means 3.3 kilowatt-hours worth of polluting fossil fuels must be burned at a power plant. By capturing heat typically wasted during electricity production, we can slash the billions we spend on polluting fossil fuels. Heat generated during electricity production is discarded and cooled using water or cooling towers. At the same time this heat is being discarded by our electric industry, manufacturers are purchasing fuel for use on site to create heat for heating and cooling needs. If we could transfer heat lost from the electric power sector to our manufacturers, we could dramatically reduce waste and energy costs. However, transporting heat becomes impractical beyond three miles. Our centralized electrical power system means existing power plants are too remote to transfer heat to industrial centers.

By decentralizing electricity production through adoption of combined heat and power technology (CHP), we can reduce energy use and emissions nationally by 20 percent. If we got 20 percent of generation from CHP in Ohio, it would mean a \$10.5 billion capital investment that would produce \$2.9 billion in energy savings annually, create over 40,000 jobs, and reduce emissions by 36 million metric tons (the equivalent of taking 6.6 million cars off the road). Because of our industrial infrastructure Ohio could be

*Read the full report and learn more about an economy that works for all:
www.policymattersohio.org*

POLICY MATTERS OHIO

3631 PERKINS AVENUE SUITE 4C-EAST, CLEVELAND, OH 44114 • 216/361-9801 • FAX: 216/361-9810
1372 GRANDVIEW AVENUE SUITE 242, COLUMBUS, OH 43212 • 614/486-4601 • FAX: 614/486-4603

POLICY MATTERS OHIO

3631 PERKINS AVENUE SUITE 4C-EAST, CLEVELAND, OH 44114 • 216/361-9801 • FAX: 216/361-9810
1372 GRANDVIEW AVENUE SUITE 242, COLUMBUS, OH 43212 • 614/486-4601 • FAX: 614/486-4603

a leader in producing gas turbines, steam turbines, high-pressure steam lines, valves, railroad engines, cooling towers, and the other essential parts of CHP systems. Ohio is already home to firms that do this kind of production, like Steam Power LLC, based in Milford and reXorce Thermionics, based in Akron.

Recognizing the value of targeting the industrial sector in its carbon reduction strategy, the state of Ohio instituted a number of measures to encourage industrial efficiency. Ohio passed both an advanced energy standard and an energy efficiency standard that requires utilities, by 2025, to increase advanced energy use to 25% and reduce total energy consumed by 22%. Investments in industrial efficiency and combined heat and power qualify towards meeting goals set forth in the law. Ohio also removed barriers to combined heat and power technology by passing new interconnection standards. Finally, Ohio's Energy Office made industrial efficiency a priority as part of its state energy program for federal stimulus dollars.

Ohio ranks in the top five states for potential energy production through CHP technology, but we rank 43rd in adoption of this technology. Further policy change could help encourage adoption of combined heat and power technology and the implementation of other efficiency measures. We recommend the state of Ohio:

1. Support climate change legislation. The climate bills currently under consideration provide tools, capital, and the technical assistance necessary to make efficiency spending worthwhile for companies and the community. The Initiative for Manufacturing Productivity in Advanced Competitive Technologies (IMPACT) proposal of Senator Sherrod Brown, and the industrial efficiency legislation introduced by Senator Jeff Bingaman reshape existing industrial efficiency programs and provide additional resources for the transition to clean energy. Additional provisions ensure funds for workforce training in lean manufacturing techniques.
2. Extend and expand Ohio's Advanced Energy Fund, which is currently set to expire and is wholly inadequate in size. Use some of the proceeds to facilitate investments in efficiency and CHP. Support HB 301, expanding and extending the fund.
3. Provide free industrial energy assessments, efficiency training, and implementation assistance to manufacturers to encourage private investment. Provide resources to do the assessments and ensure availability of capital for this purpose, by ensuring access to low-interest loans from revolving loan funds. Companies receiving state or federal public funds for retooling should be required to undergo energy assessments and implement recommendations to make them greener.
4. Investigate the potential for municipal power authorities to build combined heat and power plants on brownfields in order to provide manufacturers affordable and stable energy prices through long-term power purchase agreements (green incentives).

It is a good time to invest in manufacturing efficiency. The resulting energy savings can solidify Ohio's manufacturing stronghold in the new global clean energy economy, and make Ohio a more sustainable and vibrant state with a vital role in the nation's future.

Policy Matters Ohio is a nonprofit, nonpartisan research institute dedicated to researching an economy that will work better for all in Ohio. Learn more about Policy Matters Ohio at www.policymattersohio.org.