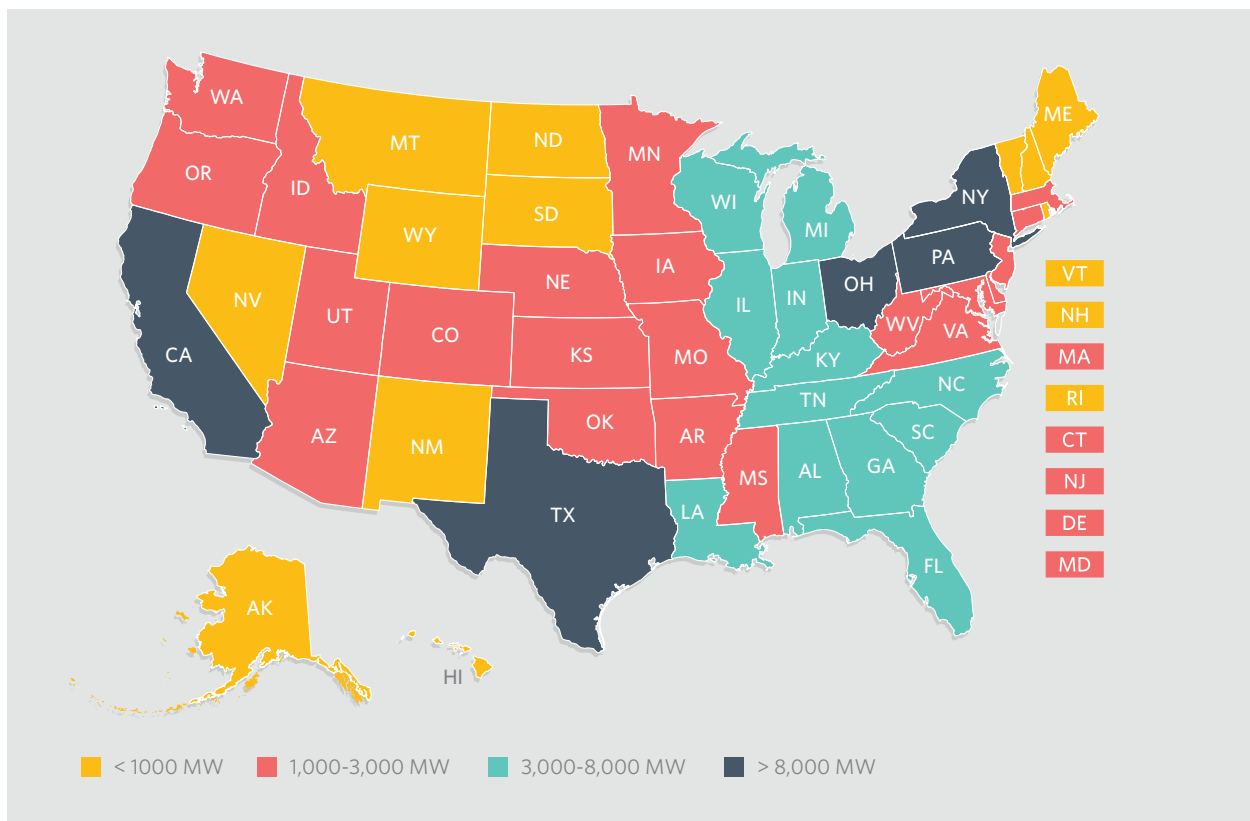


Industrial Energy Efficiency in Ohio

Overview

Combined heat and power, or CHP, technologies provide reliable electricity, mechanical power, or thermal energy by capturing heat left over from electricity generation. District energy takes heat from a CHP system to heat or cool entire complexes, such as a university campus, office park, or downtown area. More recently, a process called waste heat to power, or WHP, has been used to capture heat released during industrial processes that convert raw materials into products. These on-site technologies allow businesses to achieve energy efficiencies of up to 80 percent. Technologies such as CHP and WHP represent tremendous potential to reduce energy consumption in Ohio's industrial sector, saving manufacturers money and creating energy businesses and jobs.

CHP Technical Potential



Source: U.S. Department of Energy

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State and regional statistics

Ohio is a leader in manufacturing. It has a strong and growing manufacturing sector. Manufacturing total output was \$99.83 billion in 2013, 17.66 percent of the state’s total gross production and employs 12.8 percent of the workforce.

Source: National Association of Manufacturers

Ohio’s industrial energy use ranks sixth nationwide and is responsible for 33.4 percent of Ohio’s total energy consumption.

Sources: U.S. Energy Information Administration State Energy Data System Rankings and U.S. Energy Information Administration Ohio Profile

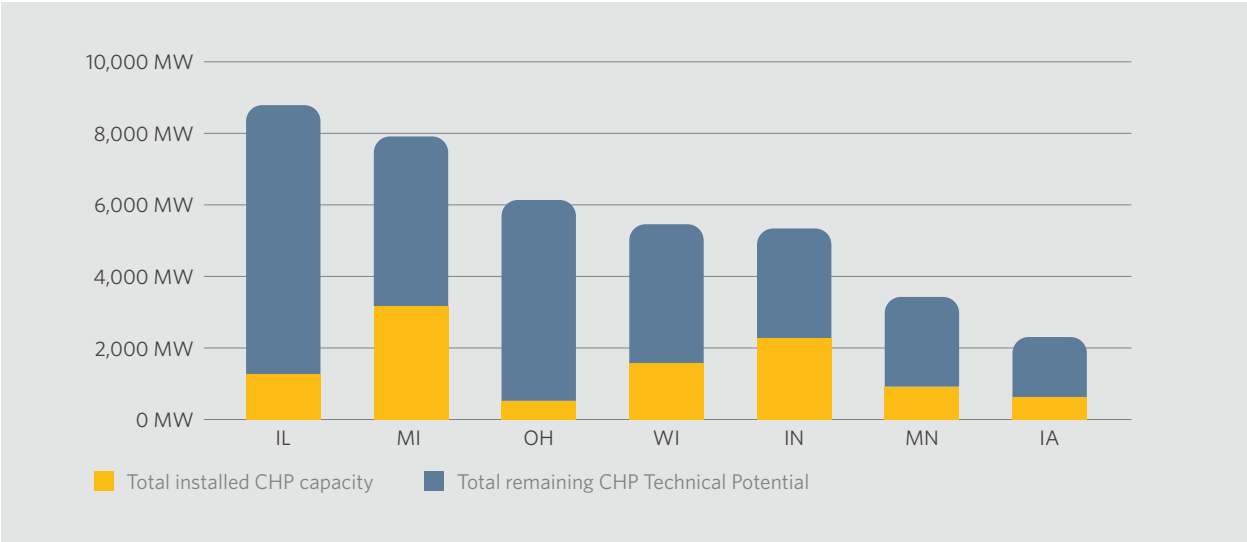
Ohio is failing to take full advantage of this potential. From 2005 to 2010, the state ranked 14th in the addition of CHP sites and seventh in the total capacity of these new CHP installations, adding only four new CHP sites over those five years totaling 94.6 megawatts in capacity.

Source: American Council for an Energy-Efficient Economy

Of all regions of the United States, manufacturers in the Midwest generate the lowest percentage of their total electricity demand from on-site CHP generation (6 percent).

Source: U.S. Energy Information Administration, Manufacturing Energy Consumption Survey, 2010

Midwestern Installed CHP and Technical Potential CHP per State, 2010



Source: U.S. Department of Energy

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State policies support industrial energy efficiency

Ohio is a leading state in the region for technical CHP potential, but its installed CHP capacity still represents less than a third of the state’s full potential (more than 6 gigawatts).

Source: Midwestern Governors Association, 2012

The Midwestern Governors Association set a goal in 2009 of doubling the installed CHP capacity in the Midwest by 2030 through a group it convened called the Energy Efficiency Advisory Group. The Midwestern Governors Association embraced this recommendation because of its economic importance, stating that industrial energy efficiency would “make Midwestern manufacturing increasingly efficient and competitive.”

Sources: Midwest Governors Association, 2009 and Midwestern Governors Association, 2011

The Midwest needs financial assistance. As noted by a leading industry trade publication, “CHP developers in the Midwest say the region has been hard hit by the economic recession, and businesses are therefore hesitating to invest in new capital projects.”

Source: *Cogeneration and On-site Power Production*, Guide to U.S. CHP Companies

CHP improves energy security

Reducing strain on the electrical grid with energy-efficient technologies increases power reliability during electrical outages resulting from extreme weather and other causes.

From 2010 to 2014, Ohio ranked in the top 10 of states with the highest number of reported power outages. In 2014, it had 143 blackouts, affecting 410,118 residents and lasting almost six days.

Source: Blackout Tracker

Examples of CHP Facilities in Ohio

City	Organization	Application	Year operational	Capacity (kW)	Fuel type
Cleveland	GEM Energy	Office buildings	2013	1,000	Natural gas
Middletown	SunCoke Energy	Refining	2011	49,000	Waste
Wooster	Quasar Energy Group	Agriculture	2010	400	Biomass
Ashtabula	Duke Energy Generation Services	Colleges/universities	2001	28,000	Natural gas

Source: U.S. Department of Energy

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For further information, please visit:

pewtrusts.org/industrialefficiency

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