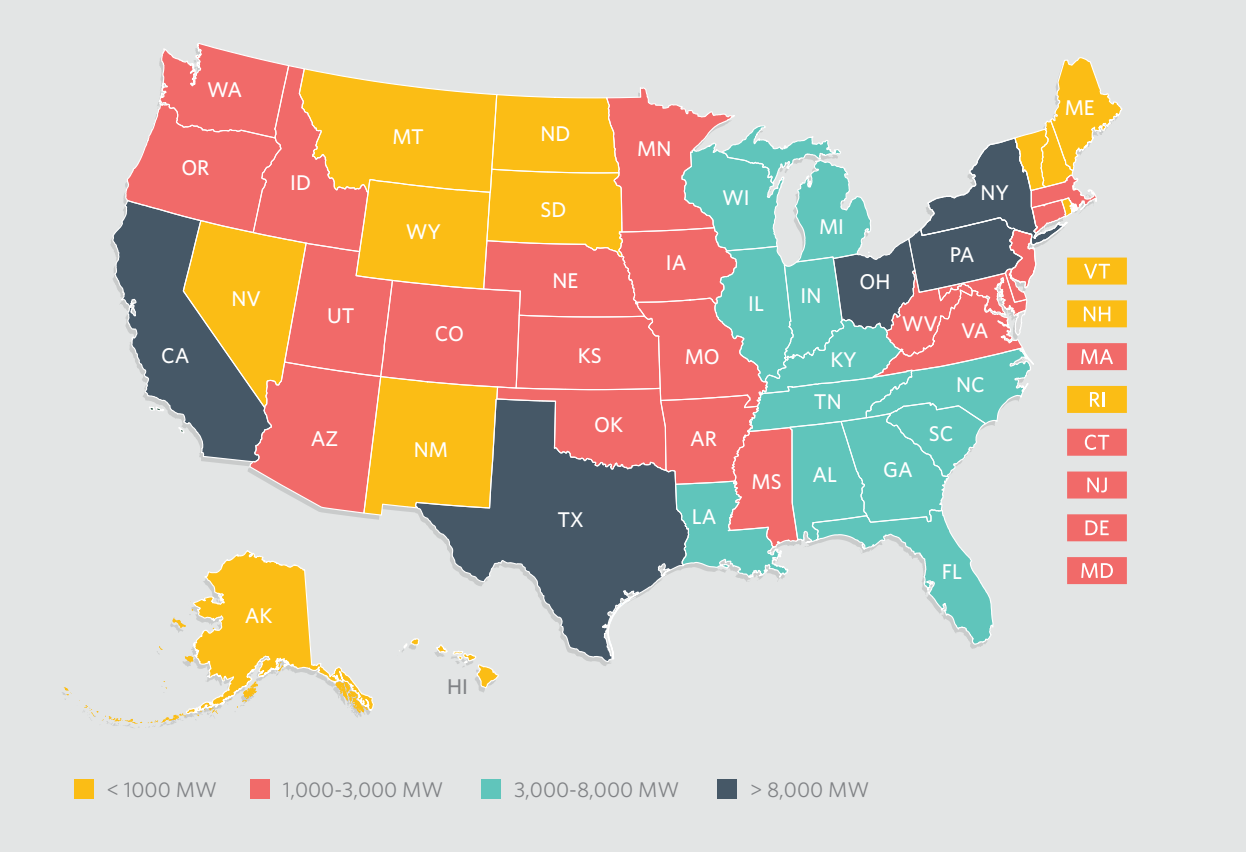
Industrial Energy Efficiency in **Wisconsin**

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 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 onsite technologies enable businesses to achieve energy efficiencies of up to 80 percent. Technologies such as CHP and WHP represent tremendous potential to reduce energy consumption in Wisconsin's industrial sector, saving manufacturers money, and creating new energy businesses and jobs.

CHP Technical Potential



Source: U.S. Department of Energy

State and regional statistics

Wisconsin is a leader in manufacturing. Its strong and growing manufacturing sector accounts for 18.9 percent of the state's total gross product and employs 16.36 percent of the workforce. The total output from manufacturing in the state was $53.38 billion in 2013.

Source: National Association of Manufacturers

Wisconsin's industrial energy use ranks 17th nationwide. Industrial energy use is responsible for over 33 percent of total energy consumption in the state.

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

Wisconsin has the potential to increase its CHP capacity. From 2005 to 2010, the state ranked sixth in new additions of CHP sites and eighth in total CHP capacity, adding 20 new CHP sites during those five years totaling 83.0 megawatts in capacity.

Source: American Council for an Energy-Efficient Economy

Wisconsin's installed CHP capacity represents less than half of the state's technical potential, estimated at more than 5 gigawatts.

Source: U.S. Department of Energy

Midwestern states support industrial energy efficiency

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. A 2011 work plan noted that Industrial energy efficiency would "make Midwestern manufacturing increasingly efficient and competitive."

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

Financial assistance is needed in the Midwest. As a leading trade publication noted, "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

Technical improvements to the investment tax credit for industrial energy efficiency could help businesses invest in these money-saving technologies, growing new industries and jobs in Wisconsin.

CHP improves energy security

CHP is the cornerstone of a resilient energy infrastructure. It enables critical infrastructure such as hospitals, fire stations, police stations, and similar facilities to continue operating when the electric grid goes down during a disaster.

Source: U.S. Department of Energy

From 2010 to 2011, Wisconsin had the 10th highest number reported power outages in the nation. The following year, it had more than 26 hours without power. In 2013, the state had more than 57 hours without power. In 2013, the state had more than 57 hours without power and in 2014, almost 50 hours. The 2014 blackouts affected 355,073 residents.

Source: Blackout Tracker

CHP can help keep Wisconsin's critical infrastructure running during a storm and its aftermath.

Examples of CHP Facilities in Wisconsin

City	Facility	Application	Year operational	Capacity (GW)	Fuel type
Casco	WTE Dairyland	Agriculture	2012	1.2	Biomass
Manitowoc	Manitowoc Municipal Utility	District energy	2005	67.9	Waste
Combined Locks	Appleton Coated Paper Mill	Pulp and paper	2002	50	Natural gas
Madison	University of Wisconsin-Madison	Colleges/universities	1998	175	Coal

Source: U.S. Department of Energy

For further information, please visit:
pewtrusts.org/industrialefficiency

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