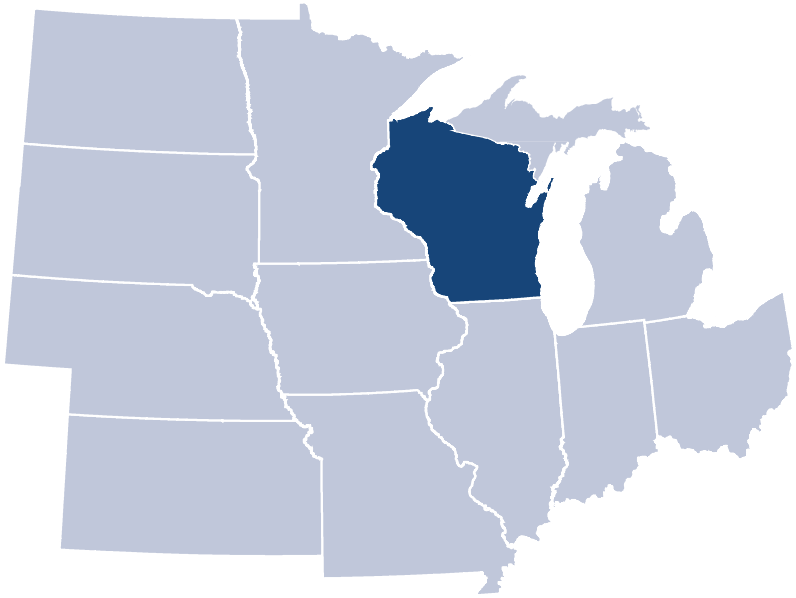
WORLD RESOURCES INSTITUTE

MIDWEST MANUFACTURING SNAPSHOT: WISCONSIN

JAMES BRADBURY AND NATE ADEN | WITH CONTRIBUTIONS BY AMIR NADAV AND JOHN CUTTICA

CONTACT
James Bradbury
Senior Associate
jbradbury@wri.org
(202) 729-7849



This state handout is an excerpt from the WRI working paper entitled "Midwest Manufacturing Snapshot: Energy Use and Efficiency Policies". The working paper presents comprehensive manufacturing energy-use and economic-activity data along with state-by-state policy summaries for the 10 member states of the Midwestern Governors Association (MGA).[1] For more information on Midwest region manufacturing, the methods used to derive the data, and policy background, please see the full working paper at: http://www.wri.org/publication/midwest-manufacturing-snapshot.

PRODUCED IN ASSOCIATION WITH:

GREAT PLAINS INSTITUTE

MGA Midwestern Governors Association

UIC UNIVERSITY OF ILLINOIS AT CHICAGO Energy Resources Center COLLEGE OF ENGINEERING

1. Member states of the MGA are Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Ohio, South Dakota, and Wisconsin.

WISCONSIN

Figure WI-1 shows the breakdown of statewide energy used for fuel and feedstock. Industry consumed approximately one-third of Wisconsin energy in 2006, far more than any other major sector. Manufacturing accounted for two-thirds of Wisconsin's total industry energy use in the same year.

Paper, primary metals and transportation equipment accounted for the largest share of Wisconsin manufacturing energy use in 2006, followed by nonmetallic mineral products.

Wisconsin has 1.5 GW of total installed CHP capacity[WI-1], which is equivalent to 9% of total installed electricity generation capacity, versus the national average of 8%. Within total CHP, the remaining technical potential for industry CHP in Wisconsin is estimated to be more than three times currently installed industrial capacity (Hedman, 2010).

WI-1 This number is higher than the installed CHP capacity number in Figure 9 because it includes all CHP installations (i.e., industrial, commercial, and institutional).

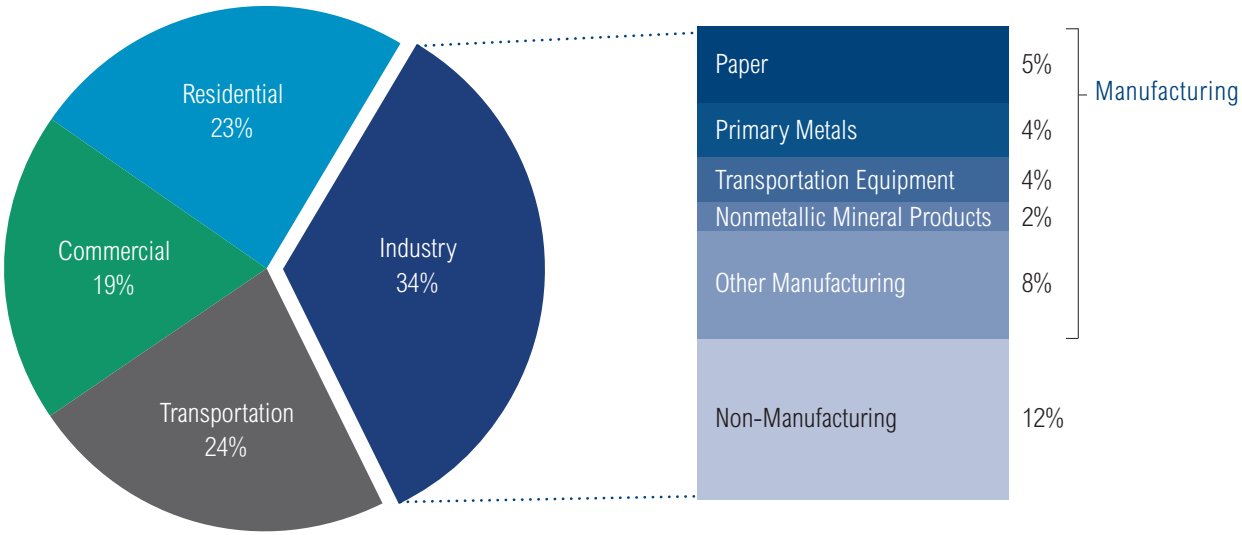
Manufacturing energy expenditures (shown by "cost of fuels & electricity" in Figure WI-2) in Wisconsin followed a national trend of peaking in 2008. Between 2000 and 2010, the index of manufacturing energy costs rose more quickly than the value of shipments index (Figure WI-2). The average difference between these two series over the period is 19%. By 2010 Wisconsin manufacturing energy expenditures had increased by 35%, while the total value of shipments rose by 14%, relative to year 2000 levels. Over the same 10-year period, Wisconsin manufacturing

Table WI-1 | **Wisconsin Industry Delivered Energy Annual Average Prices (2010)**

	ELECTRICITY (cents/kWh)	NATURAL GAS ($/1,000 ft³)	COAL ($/short ton)
Wisconsin	6.85	7.56	79.79
Midwest average	6.19	6.66	50.68
U.S. average	6.77	5.49	59.28

SOURCE: U.S. Energy Information Administration; for details see Appendix.

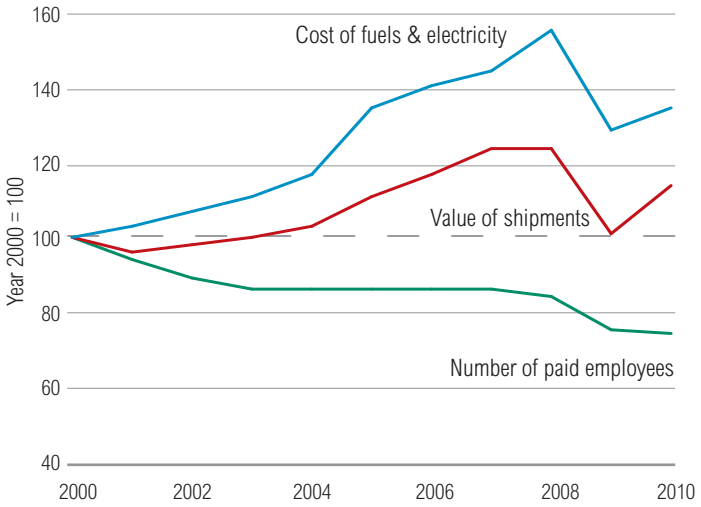
Figure WI-1 | **Wisconsin Total Energy Use, 2006**



Total Energy Use: 1.8 Quads

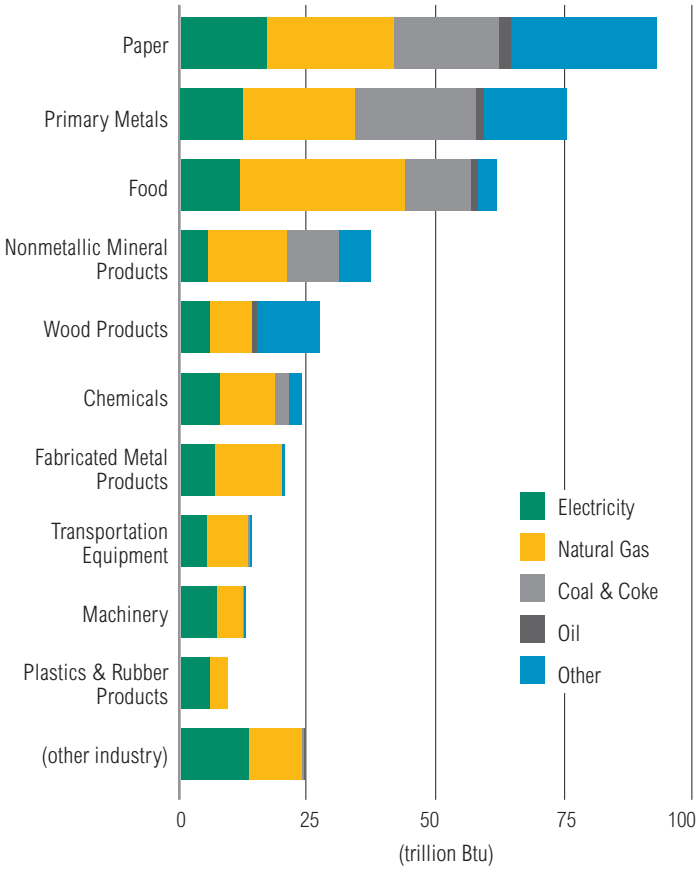
SOURCES: MECS; ASM; SEDS.

Figure WI-2 | **Index of Wisconsin Manufacturing Energy Cost, Value of Shipments, and Employment (2000-2010)**



SOURCE: ASM; BEA (employment)
NOTE: 2002 ASM values were linearly interpolated due to a gap in the published data.

Figure WI-3 | **Wisconsin Manufacturing Fuel Use by Sector, 2006**



SOURCES: MECS; ASM.

employment dropped by 26%—from 604,000 to 448,000, compared to the national manufacturing employment decline of 37% over the same period (Figure 1).

Energy prices (Table WI-1) influence demand and end-use efficiency. Energy is relatively expensive in Wisconsin—delivered natural gas and coal prices were 38% and 35% higher than the national average, and electricity was slightly more expensive than the national and regional average. Prices vary by end user and time of use, but this snapshot suggests that Wisconsin industry is subject to higher energy prices than the rest of the Midwest and the U.S.

In 2006 Wisconsin manufacturing consumed 410 trillion Btu[WI-2] of fuel. Figure SD-3 shows the breakdown of Wisconsin manufacturing fuel use by subsector. Natural gas was the most-consumed fuel for manufacturing. Paper and primary metals manufacturing sectors accounted for 42% of Wisconsin manufacturing fuel use in 2006.

In 2005, the Wisconsin Act 141 set up renewable and efficiency portfolio goals while establishing the state's energy efficiency program, Focus on Energy, which provides incentives for industrial energy efficiency. The Wisconsin Economic Development Corporation also funds a sustainability technical assistance program through the Wisconsin Manufacturing Extension Partnership.

WI-2 For energy unit conversion, 1,000 trillion Btu is equivalent to 1 Quad of energy.

Table WI-2 | Wisconsin Key Energy and Environmental Policies

WISCONSIN	
REGULATORY ENVIRONMENT	
Renewable energy standard	The Wisconsin Renewable Portfolio Standard does not allow energy efficiency technologies to qualify for compliance (DSIRE).
Energy efficiency resource standard	Wisconsin's Energy Efficiency Resource standard sets annual efficiency goals ramping up to 1.5% of peak load in 2014, for electric utilities, and 1% of peak load in 2013, for natural gas utilities. Focus on Energy implements programs to achieve these EE goals (ACEEE).
Emissions control programs	Under CAIR, Wisconsin permitted CHP systems under 25 MW to participate in a voluntary emissions-trading scheme (ACEEE).[a] These rules are to be phased out in 2012.[b]
Alternative business models	In 2008, the Wisconsin Public Service Corporation (PSC) received approval for a 4-year pilot decoupling program. In June 2011, the Wisconsin Electric Power Company received approval for a gas cost recovery mechanism (ACEEE).
Grid access	In 2004, the Wisconsin PSC established interconnection standards for investor-owned and municipal utilities. The standards apply to generators, including CHP systems, up to 15 MW (ACEEE; DSIRE).
FINANCIAL AND TECHNICAL ASSISTANCE	
Grants, loans, or tax incentives	The Wisconsin Green to Gold Fund, established in 2010, provides loans for manufacturers to improve the energy efficiency of their facilities (ACEEE).
Technical assistance	The Wisconsin Manufacturing Extension Partnership manages the Profitable Sustainability Initiative, which help small and midsized companies develop sustainable practices.[c] The University of Wisconsin-Milwaukee houses an Industrial Assessment Center, which provides qualified manufacturers with free assessments and recommendations to improve energy efficiency.[d]
UTILITY PROGRAMS	
Customer EE programs, with cost-recovery	Focus on Energy develops and administers customer energy efficiency programs, including industrial sector programs. A self-direct option exists for large customers. They must submit a plan for PSC approval, adhere to measurement and verification standards, and submit quarterly reports.[e]
EE as a resource	The PSC conducts "Strategic Energy Assessments" every 2 years for planning purposes (ACEEE).

SOURCE: "ACEEE" refers to the American Council for an Energy Efficient Economy website: http://www.aceee.org/sector/state-policy (February, 2012); "DSIRE" refers to the Database of State Incentives for Renewables and Energy Efficiency website: http://www.dsireusa.org. (February, 2012).

a http://www.epa.gov/chp/state-policy/obr_factsheet.html (February, 2012).

b The first compliance phase for CAIR's replacement, the Cross-State Air Pollution Rule (CSAPR), had been scheduled to go into effect in January 2012. In December 2011, the United States Court of Appeals for the D.C. Circuit stayed CSAPR and is scheduled to hear the case in April 2012. Meanwhile, EPA is facilitating a transition back to CAIR. http://epa.gov/airtransport/

c http://www.wmep.org/next-generation-manufacturing/sustainable-products-process-development (February, 2012).

d http://iac.uwm.edu/

e See more details on pages 48-49 of the following report: http://www.aceee.org/research-report/ie112. (February, 2012).