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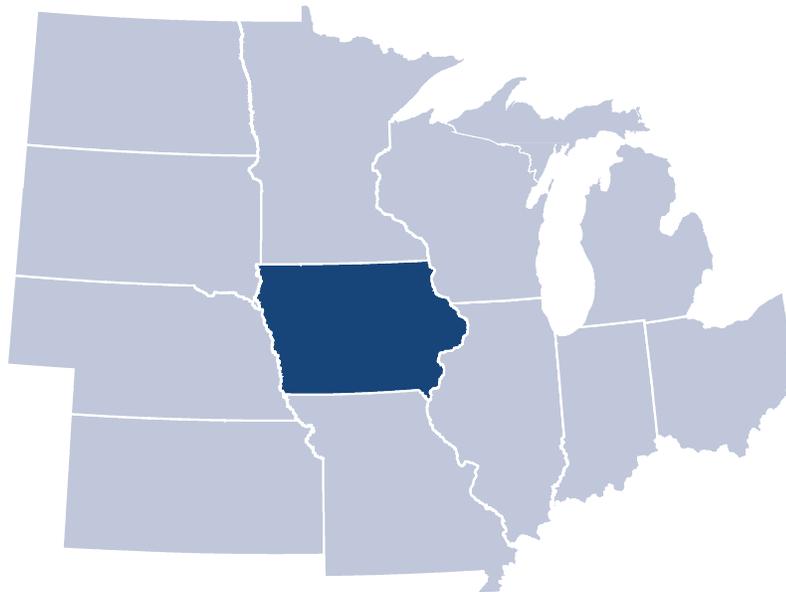
# MIDWEST MANUFACTURING SNAPSHOT: IOWA

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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).<sup>1</sup> 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>.

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

## IOWA



In 2009 Iowa consumed 1.4 Quads of energy. Industry plays a central role in Iowa energy use, economic activity, and employment. Figure IA-1 shows the breakdown of

statewide energy used for fuel and feedstock in 2006. Industry consumed almost half of total energy (including feedstocks) in Iowa—far more than any other end-use sector. Within industry, manufacturing accounted for 53% of Iowa industry energy use in the same year.

Food and fabricated metal product manufacturing accounted for the largest share of Iowa manufacturing energy use in 2006, followed by chemicals and primary metals.

Iowa has 585 MW of total installed CHP capacity<sup>IA-1</sup>, which is equivalent to 4% of total installed electricity generation capacity, versus the national average of 8%. Within total CHP, the remaining technical potential for industry CHP in Iowa is estimated to be more than twice as large as currently installed industrial capacity (Hedman, 2010).

IA-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).

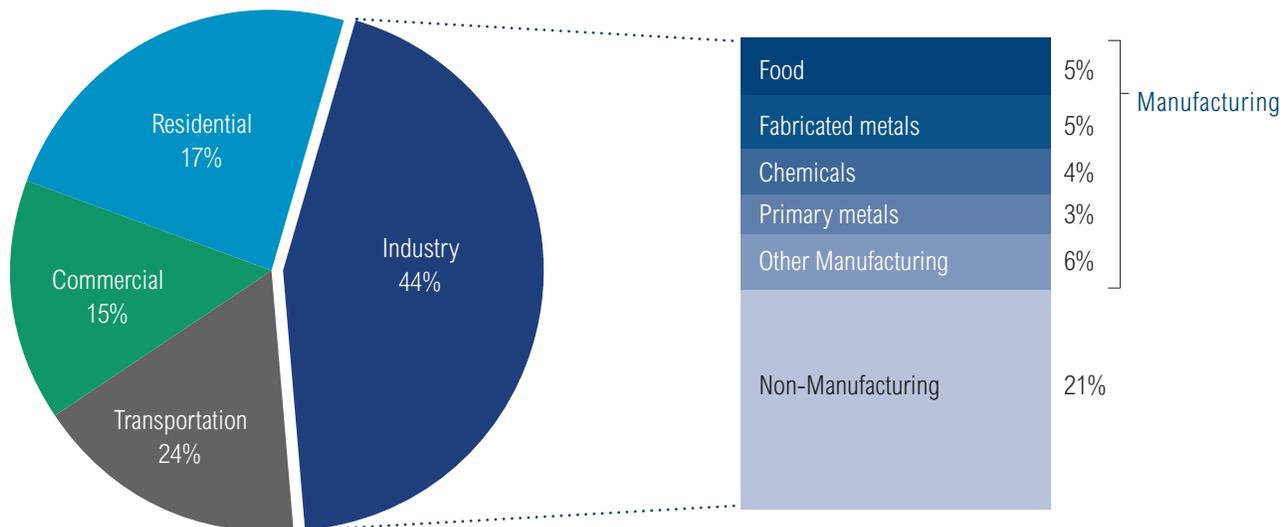
Iowa manufacturing energy expenditures (shown by “cost of fuels & electricity” in Figure IA-2) followed the national trend of peaking in 2008. Between 2000 and 2010, the index of manufacturing energy costs rose more quickly than the value of shipments index (Figure IA-2). The average difference between these two series over the period is 20%. By 2010 Iowa manufacturing energy expenditures had increased by 76%, while the total value of shipments rose by 40%, relative to year 2000 levels. Over the same 10-year period, Iowa manufacturing employment dropped

Table IA-1 | **Iowa Industry Delivered Energy Annual Average Prices (2010)**

	ELECTRICITY (cents/kWh)	NATURAL GAS (\$/1,000 ft <sup>3</sup> )	COAL (\$/short ton)
Iowa	5.36	6.10	49.76
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.

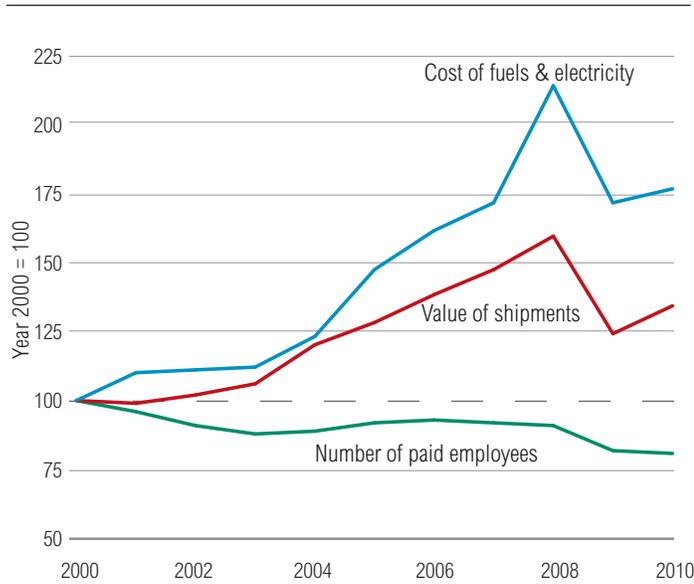
Figure IA-1 | **Iowa Total Energy Use by Subsector, 2006**



Total Energy Use: 1.3 Quads

SOURCES: MECS; ASM; SEDS.

Figure IA-2 | **Index of Iowa 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.

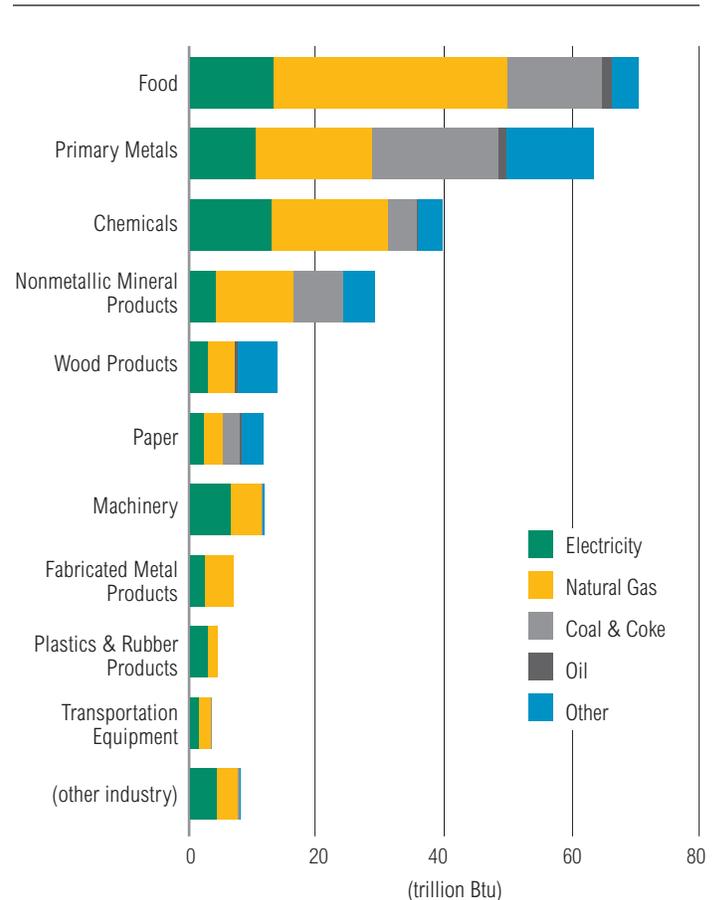
by 19%—from 256,000 to 208,000, compared to the national manufacturing employment decline of 37% over the same period (Figure 1).

Energy prices (Table IA-1) influence demand and end-use efficiency. Although reported Iowa natural gas prices were 11% higher than the national average, delivered electricity and coal were 21% and 16% cheaper than the national average. Prices vary by end user and time of use, but this snapshot of 2010 prices suggests that Iowa industry faces a mixed picture among different fuels.

In 2006 Iowa manufacturing consumed 260 trillion Btu<sup>IA-2</sup> of energy for fuel use. Figure IA-3 shows the breakdown of Iowa manufacturing fuel use by subsector (not including energy used as feedstocks). Food and primary metals manufacturing accounted for 51% of Iowa manufacturing fuel use in 2006.

In 2008 Iowa enacted S.B. 2386, which directed the Iowa Utilities Board to establish energy efficiency resource standards for the state’s investor-owned utilities and require efficiency programs and filings from cooperative

Figure IA-3 | **Iowa Manufacturing Fuel Use by Sector, 2006**



SOURCES: MECS; ASM.

and municipal utilities. Utilities administer their own energy efficiency programs, which offer energy efficiency rebates and incentives to their customers. A few utilities offer incentives available for industrial applications, but few policies or incentives specifically address combined heat and power.

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

Table IA-2 | **Iowa Key Energy and Environmental Policies**

<b>IOWA</b>	
<b>REGULATORY ENVIRONMENT</b>	
Renewable energy standard	The Iowa Alternative Energy Law does not allow energy efficiency technologies to qualify for compliance (DSIRE).
Energy efficiency resource standard	Under authority from S.B. 2386, the Iowa Utility Board ordered investor-owned utilities to reduce retail sales by 1.5%. Cooperative and municipal utilities were required to establish their own efficiency goals. Annual savings goals during the period from 2009 to 13 vary by utility, ranging from 1 to 1.5% for electricity and 0.74 to 1.2% for natural gas (ACEEE; DSIRE).
Environmental protection programs	Iowa does not have output-based emission standards (ACEEE).
Alternative business models	The Iowa Utilities Board does not require decoupling but allows natural gas utilities to apply to the board for rate design changes on a case by case basis (ACEEE).
Grid access	In 2010, the Iowa Utilities Board established interconnection standards for the state's three rate-regulated utilities. The standards apply to generators up to 10MW and include PURPA qualifying facilities. The rules adopt IEEE 1547-2003 as technical standards (ACEEE; DSIRE).
<b>FINANCIAL AND TECHNICAL ASSISTANCE</b>	
Grants, loans, or tax incentives	Iowa's Corporate Renewable Energy Production Tax Credit applies to systems up to 5MW that are powered by renewable fuels. As of October 2011, this program is oversubscribed and new applications remain in queue (ACEEE; DSIRE).
Technical assistance	The Iowa Energy Center at Iowa State University conducts energy efficiency and renewable energy research, demonstration and education projects. The Center offers industrial total assessment audits and participates in the Compressed Air Challenge, and the DOE Steam Challenge. <sup>a</sup> Iowa State University also houses an Industrial Assessment Center, which provides qualified manufacturers with free assessments and recommendations to improve energy efficiency. <sup>b</sup>
<b>UTILITY PROGRAMS</b>	
Customer EE programs, with cost-recovery	Iowa's investor-owned utilities must provide energy efficiency programs for all customer types. Efficiency program costs are recovered through customer bills and there are no opt-out or self-direct programs for large industrials (ACEEE, DSIRE).
EE as a resource	Iowa's investor owned utilities are required to develop and execute energy efficiency plans that meet cost-effectiveness tests, offer programs for all customer types, contain an efficiency potential study, and include energy and capacity saving performance standards. Cooperatives and municipal utilities develop and file their own energy efficiency plans. These are not reviewed or approved by the IUB but are used for state energy planning (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 The Steam and Air Compressor "Challenges" are voluntary programs to help manufacturers increase their energy productivity; <http://www.energy.iastate.edu/Efficiency/Industrial/>. (February, 2012).

b <http://www.me.iastate.edu/iac/>. (February, 2012).