



Iowa Combined Heat and Power Fact Sheet

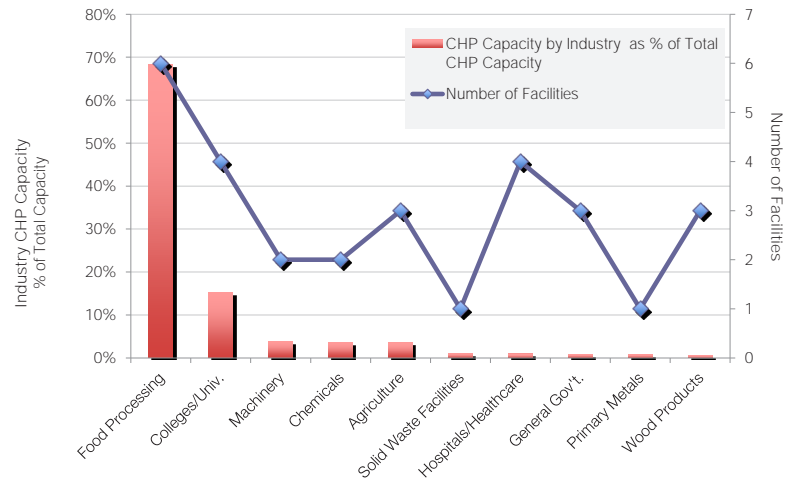
State Energy Profile

Energy consumption per capita: **494 mmBtu (2011)**
 Electric industry: **Regulated**
 Total electric generation capacity: **16,470 MW (2011)**
 Average retail electricity price:
 All sectors: **7.30 cents/kWh**
 Residential: **10.31 cents/kWh**
 Commercial: **7.52 cents/kWh**
 Industrial: **5.05 cents/kWh**
 Average retail natural gas price:
 Residential: **9.54 \$/MCF (2011)**
 Commercial: **7.13 \$/MCF**
 Industrial: **4.71 \$/MCF**
 Population: **3,046,355 people (2010)**
 State Real GDP: **\$129 billion**

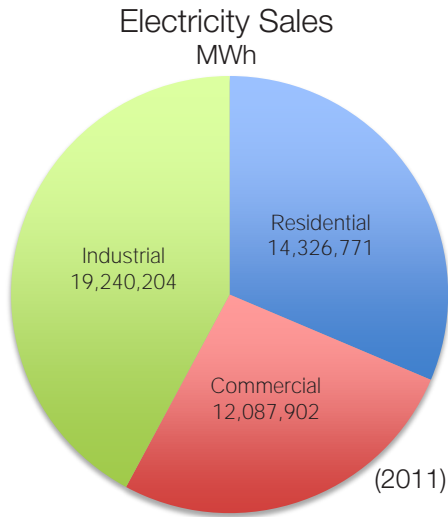
(Statistics for the year 2012 unless otherwise noted)

CHP Snapshot

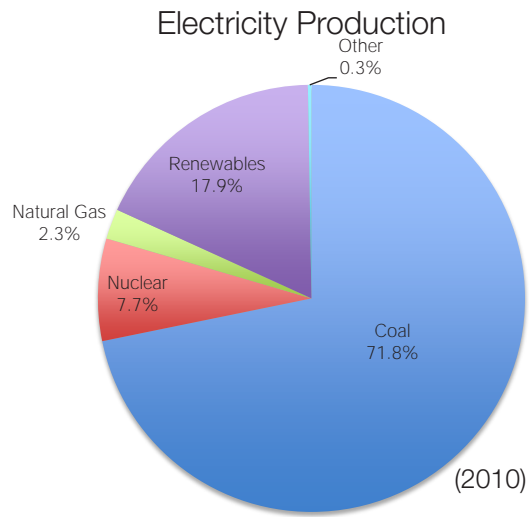
Number of CHP facilities and capacity by industry as a percentage of total state CHP capacity



There are 34 CHP sites in Iowa, representing a total installed capacity of 590 MW. The largest CHP site in the state is the Archer Daniels Midland Company in Clinton (187 MW), and the smallest site is Kendrick Forest Products in Edgewood (50 kW). As the graph above illustrates, the number of CHP facilities by industry is not necessarily correlated to an industry's share of total CHP capacity. Nationally, according to ICF International, 87 percent of current installed CHP generation capacity is found at industrial facilities with high electric and steam demands such as chemical, paper, refining, food processing and metal manufacturing. Natural gas has been the preferred fuel for CHP systems in the U.S., accounting for around 70 percent of existing CHP capacity.



Source: EIA



Source: EIA

The industrial sector represents around 40 percent of electricity sales in Iowa, out of 45,654,877 MWh in total electricity sales across the residential, commercial and industrial sectors. Electricity generation from coal and renewables account for 90 percent of the state's electricity production while nuclear, natural gas, and other energy sources make up the remaining 10 percent.

State CHP Policies

Standby Rate Design	Interconnection Standards	Financial Incentives
<p>Alliant Energy Standby service for pre-scheduled, contracted amounts with demand-based rate (variable energy charges). High penalty for exceeding contract demand. Billing demand based on maximum demand of the month. 12-month ratchet.</p> <p>MidAmerican Energy Co. Rider No. 8 Standby service provided to customers if they contract for specific amount of standby capacity. Energy use charged under customer's regular rate, if not self-generating power. Billing demand based on maximum monthly demand or 75% of maximum established during previous June-September time period, whichever is greater.</p> <p>Impact on CHP Development Unfavorable. However, MidAmerican Energy has proposed a new standby rate that (if adopted) would replace Rider 8 and include significant changes that are more favorable to CHP development (Iowa Utilities Board docket RPU-2013-0004)</p>	<ul style="list-style-type: none"> • 10 MW system capacity limit • Standard interconnection rules only directly apply to the state's two rate-regulated utilities • Very limited guidelines for non rate-regulated utilities • 4 levels of review for interconnection based on capacity • Fees vary depending upon capacity: \$50-1000 initial cost plus \$1-2/kwh depending on tier. Facilities >1 MW, general liability insurance requirements for facilities >1 MW vary between \$2-4 million • IEEE 1547 and UL 1741 adopted as certification standards • Standardized interconnection applications and agreements • Rules define time limits and technical screens for each level of evaluation • Rules specify procedure for dispute resolution 	<p>Loans</p> <ul style="list-style-type: none"> • Alternate Energy Revolving Loan Program • IADG Energy Bank Revolving Loan Program <p>Taxes</p> <ul style="list-style-type: none"> • Energy Replacement Generation Tax Exemption • Renewable Energy Production Tax Credit <p>Portfolio Standards</p> <p>EERS CHP not explicitly included. WHP has been filed under EERS plans (portfolios to be finalized Dec. 2013). Goals differ by utility, 1.4% average annual electricity savings and 1.2% savings for natural gas by 2013.</p> <p>RPS CHP and WHR not explicitly included.</p>
Decoupling Utility Revenues		Net Metering
Decoupling is not required for Iowa gas and electric utilities. Utilities may propose automatic adjustment mechanisms or other rate design changes that decouple their profits from sales revenues.	Long-term revenue sharing arrangement was approved for MidAmerican Energy Company's regulated electric retail service (referenced as the "Iowa model") and could be a promising alternative business model for advancing clean energy policies.	CHP not listed as eligible technology
		Output-Based Emissions Regulations
		None

State CHP Technical Potential (MW)

Facility Size	50-1000 kW	1-5 MW	5-20 MW	>20 MW	Total
Industrial	171	287	227	252	937
Commercial	444	279	0	15	738
Total	615	566	227	267	1,675

Source: ICF

Technical potential is defined as the CHP electrical capacity that could be installed at existing industrial and commercial sites based on their electric and thermal needs (under the assumption that the facilities would utilize thermally loaded CHP systems sized to meet their electric demand).

Boiler MACT Affected Boilers

Facilities	71
Coal Units	41
Biomass Units	5
Gas Units	208
Heavy Oil Units	2
Light Oil Units	6
Total Capacity (mmBtu/hr)	35,935

Application	Units	Facilities	Capacity (mmBTU/hr)
Food Manufacturing	98	20	15,521
Fabricated Metal Product Manufacturing	39	3	1,083
Educational Services	30	4	3,089
Utilities	22	11	7,578
Chemical Manufacturing	18	5	2,970
Pipeline Transportation	13	5	286
Machinery Manufacturing	13	8	4,438
Wood Product Manufacturing	8	3	216
Plastics and Rubber Products Manufacturing	5	3	117
Electrical Equipment, Appliance, and Component Manufacturing	4	2	23

For more information on data sources, see CHP Factsheet Appendix at gpsid.net