



# Wisconsin Combined Heat and Power Fact Sheet

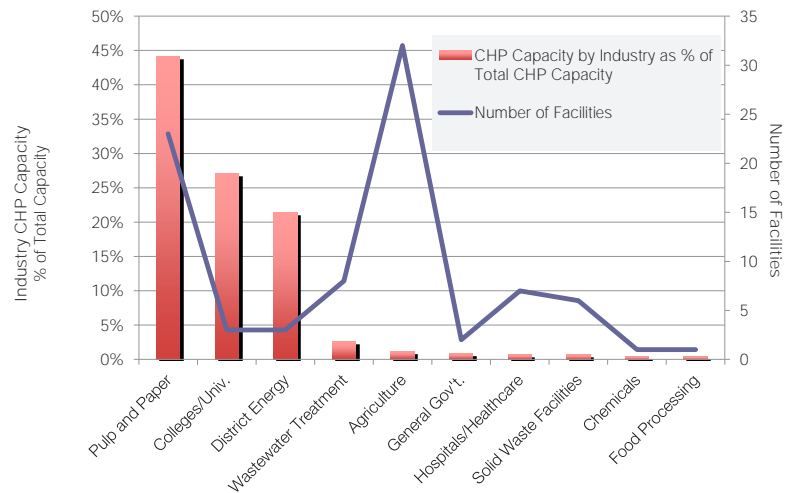
## State Energy Profile

Energy consumption per capita: **313 mmBtu (2011)**  
 Electric industry: **Regulated**  
 Total electric generation capacity: **17,836 MW (2011)**  
 Average retail electricity price:  
 All sectors: **10.54 cents/kWh**  
 Residential: **13.43 cents/kWh**  
 Commercial: **10.67 cents/kWh**  
 Industrial: **7.57 cents/kWh**  
 Average retail natural gas price:  
 Residential: **9.23 \$/MCF**  
 Commercial: **7.32 \$/MCF**  
 Industrial: **5.80 \$/MCF**  
 Population: **5,686,986 people (2010)**  
 State Real GDP: **\$225 billion**

(Statistics for the year 2012 unless otherwise noted)

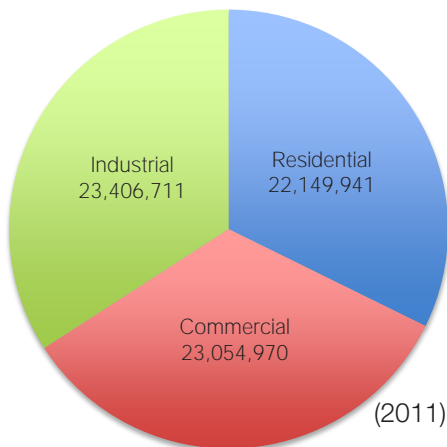
## CHP Snapshot

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



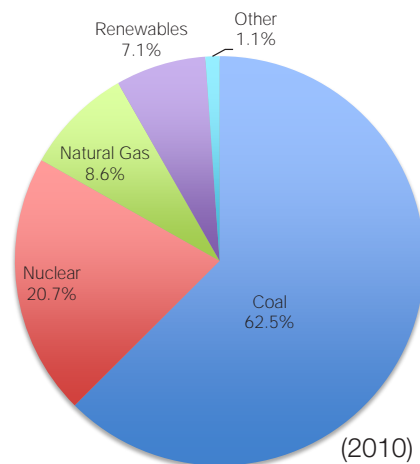
There are 94 CHP sites in Wisconsin, representing a total installed capacity of 1,570 MW. The largest CHP site in the state is Wisconsin Electric Power Co in Milwaukee (267 MW), and the smallest site is Burleigh Elementary School in Elm Grove (30 kw). As the graph above illustrates, the number of CHP 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.

### Electricity Sales MWh



Source: EIA

### Electricity Production



Source: EIA

Electricity sales are spread evenly between the three sectors and together they represent 68,611,622 MWh in total sales. Electricity generation from coal and nuclear account for around 85 percent of the state's electricity production while natural gas, renewables, and other energy sources make up the remaining 15 percent of generation.

## State CHP Policies

Standby Rate Design	Interconnection Standards	Decoupling Utility Revenues
<p><b>Wisconsin Electric Power Company General Primary Service Optional Standby</b> Contractual standby service for a specific amount of demand. Billing based on the negotiated contract, small portion depends on a demand charge. No ratchet.</p> <p><b>Wisconsin Public Service Corporation Small Commercial &amp; Industrial Service Time of Use Rate</b> Includes higher demand charge than is typical. 12-month ratchet.</p> <p><b>Impact on CHP Development</b> Wisconsin Public Service Corporation is less favorable to CHP. (Note: there may be additional electricity providers that this table does not include).</p>	<ul style="list-style-type: none"> <li>15 MW system capacity limit.</li> <li>Applicable to all public utilities.</li> <li>Rules categorize CHP systems by capacity and provide for 4 levels review.</li> <li>2 sets of standard forms for interconnection: 1 for systems &lt;20 kW and the other for systems &lt;15 MW.</li> <li>Application and study fees vary by category (no fees for systems &lt;20 kW).</li> <li>Minimum liability insurance of at least \$300,000 per occurrence required for systems &lt;20 kW with higher amounts for larger systems.</li> <li>No well-defined process for settling disputes.</li> </ul>	<p>Wisconsin Public Service Corporation (WPSC) approved for decoupling in 2008 and allowed to implement 4-year pilot program. WPSC required to provide additional contributions to Focus on Energy and must implement 3 community-based pilots. Annual true-ups and over-or under-collection capped at \$14 million for electricity and \$8 million for gas. Pilot programs complete in December 2012; programs with additional funding will be complete by end of 2013. Final decision regarding the continuation of decoupling expected by late 2013.</p>
Output-Based Emissions Regulations	Portfolio Standards	Financial Incentives
<p><b>Wisconsin Administrative Code Chapter NR 432</b> As a part of the US EPA's Clean Air Interstate Rule, Wisconsin is required to reduce SO<sub>2</sub> and NO<sub>x</sub> emissions. CHP systems &gt; 25MW eligible to participate in voluntary emission trading scheme. 3 markets: annual SO<sub>2</sub> emissions, annual NO<sub>x</sub> emissions, and ozone-season NO<sub>x</sub> emissions.</p> <p>Note: The EPA is developing new cross-state air pollution rules, and states will likely have to implement new plans that will replace the CAIR requirements outlined above.</p>	<p><b>EERS</b> CHP is not specifically identified as an eligible resource, but deployment of CHP that is fueled by renewable fuels or waste heat is supported by grants from the Focus on Energy program. 2011-2014 net annual electric energy savings goal equals 1,816,320,000 kWh and the net annual natural gas savings goal is 73,040,000 therms. Utilities are required to spend 1.2% of annual operating revenues to fund both EE and renewable energy programs.</p> <p><b>RPS</b> CHP explicitly mentioned as eligible; WHR not mentioned. Requires municipal and IOUs and rural electric cooperatives to steadily increase their renewable energy percentages annually to meet an overall statewide renewable energy goal of 10% by 2015.</p>	<p><b>Rebates</b></p> <ul style="list-style-type: none"> <li>Focus on Energy - Renewable Energy Competitive Incentive Program and, for waste heat fueled CHP</li> <li>Business Incentive Program and Large Energy User Program.</li> </ul> <p><b>Loans</b></p> <ul style="list-style-type: none"> <li>Alliant Energy Shared Savings Program (waste heat fueled CHP)</li> </ul> <p><b>Net Metering</b></p> <p>All DG technologies are eligible. Commercial, industrial, and residential sectors eligible. 20-100 kW capacity limit. No aggregate capacity limit. Net excess generation varies by utility (e.g. Xcel credit is carried over monthly and reconciled annually at the avoided cost rate).</p>

## State CHP Technical Potential (MW)

Facility Size	50-1000 kW	1-5 MW	5-20 MW	>20 MW	Total
Industrial	375	519	642	817	2,353
Commercial	857	575	103	0	1,535
Total	1,232	1,094	745	817	3,888

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	81
Coal Units	43
Biomass Units	16
Gas Units	148
Heavy Oil Units	7
Light Oil Units	8
Total Capacity (mmBtu/hr)	21,331

Source: ICF

Application	Units	Facilities	Capacity (mmBTU/hr)
Paper Manufacturing	85	30	14,306
Primary Metal Manufacturing	19	2	218
Petroleum and Coal Products Manufacturing	18	2	664
Utilities	15	4	3,019
Educational Services	15	10	1,055
Miscellaneous Manufacturing	14	2	485
Printing and Related Support Activities	10	3	236
Chemical Manufacturing	8	2	285
Wood Product Manufacturing	8	8	190
Plastics and Rubber Products Manufacturing	7	1	82

For more information on data sources, see CHP Factsheet Appendix at [gpsid.net](http://gpsid.net)