

CHP in Minnesota: Baseline and value proposition

Combined heat and power (CHP) systems in Minnesota today provide about 962 MW of generating capacity – more than 6% of Minnesota’s total electric generation (Fig. 1).

CHP systems in Minnesota are used in a variety of applications, from powering hospitals to mining taconite. The largest portion of Minnesota’s CHP capacity is found in energy-intensive industrial settings (Fig. 2).

The biggest CHP units in Minnesota are at chemical plants and paper mills. But commercial and institutional sites –

such as district energy systems, hospitals, and universities – are home to 30 percent of the state’s total CHP capacity.

Small CHP systems (<5 MW each) represent only 3% of Minnesota’s CHP capacity. However, recent trends show rapid growth in small CHP systems; since 2005, small systems accounted for 46% of new CHP capacity.

CHP systems are located across the state, with the majority (54%) located in Xcel Energy’s territory – which includes the Minneapolis/St. Paul metro area.

CHP Advantages

Key drivers for CHP in Minnesota:

- *High efficiency:* 35%+ fuel savings compared to utility power plants combined with onsite boilers.
- *Resilience and reliability:* Onsite energy systems can operate through utility outages.
- *Emissions reductions:* More efficient systems burn less fuel and pollute less.
- *Fuel flexibility:* CHP uses many fuels, from natural gas to agricultural waste.



Fig. 3: Minnesota organizations report favorable experience owning and operating CHP systems. (Source: *Minnesota CHP Stakeholder Perspectives Survey, August 2014, Microgrid Institute.*)

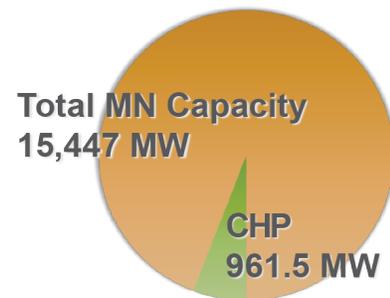


Fig. 1: CHP systems provide 6.2% of Minnesota’s electric generating capacity. (Sources: EIA, ICF)

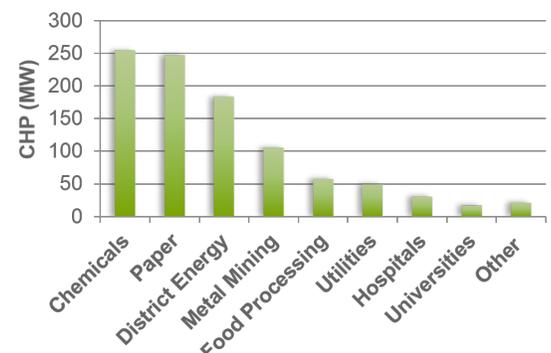


Fig. 2: Minnesota’s industrial and processing companies use most of the state’s CHP, with a substantial share serving district energy and other commercial facilities. (Source: ICF)



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