

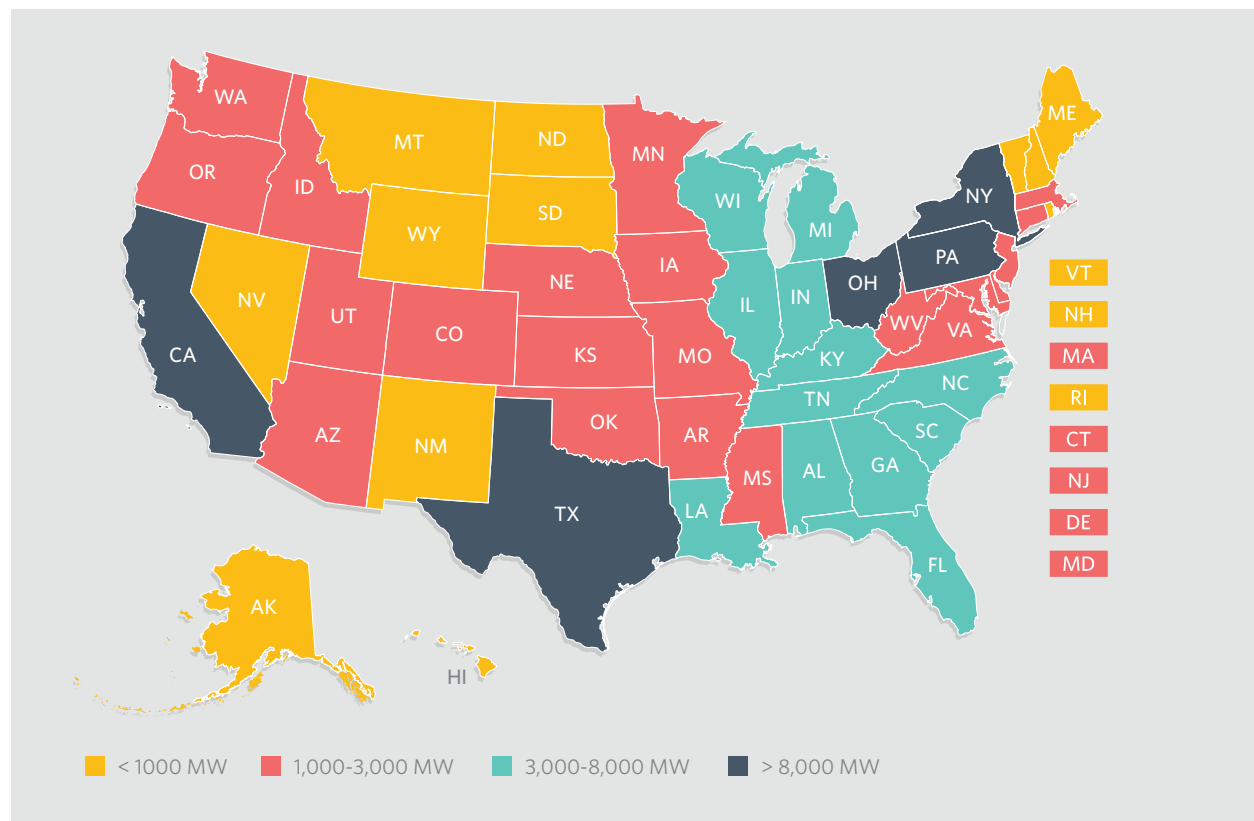


# Industrial Energy Efficiency in Utah

## Overview

Combined heat and power, or CHP, technologies provide reliable electricity, mechanical power, or thermal energy by capturing heat that is wasted during electricity generation. District energy takes heat from a CHP system to heat or cool entire complexes such as a university campus, office park, or downtown area. Waste heat to power, or WHP, has been used to capture heat released during industrial processes and turn it into electricity. These on-site technologies allow businesses to achieve energy efficiencies of up to 80 percent. Technologies such as CHP and WHP represent tremendous potential to reduce energy consumption in Utah's industrial sector, saving manufacturers money and creating energy businesses and jobs.

## CHP Technical Potential



Source: U.S. Department of Energy

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## State and regional statistics

Utah currently has 19 CHP sites across the state with a total generating capacity of 226 megawatts (MW).

Source: U.S. Department of Energy

Manufacturing accounts for almost 15 percent—\$20.98 billion in 2013—of the total gross state product and employs 9 percent of the workforce.

Source: National Association of Manufacturers

Utah's industrial sector consumed 29 percent, or 242 trillion British thermal units, of the total energy used statewide in 2013.

Source: U.S. Energy Information Administration

## State policies support industrial energy efficiency

Utah's renewable portfolio goal, though voluntary, includes electric generation facilities that produce electricity from CHP and WHP projects. The goal requires investor-owned, municipal, and cooperative utilities to use eligible resources to account for 20 percent of their 2025 adjusted retail electric sales.

Sources: American Council for an Energy-Efficient Economy and U.S. Environmental Protection Agency

In 2010, the Utah Public Service Commission adopted rules for interconnection. These standards contain provisions for interconnection of systems up to 20 MW. The law explicitly includes facilities that utilize waste heat capture or recovery. Utah's net metering law requires the state's one investor-owned utility and most electric cooperatives to offer net metering to customers who generate power using clean energy, including via CHP systems that are renewably fueled.

Sources: American Council for an Energy-Efficient Economy and U.S. Environmental Protection Agency

The state's 2014 alternative energy development incentive provides up to a 75 percent state tax credit for alternative energy projects located in a designated alternative energy development zone. CHP is a qualifying technology.

Sources: American Council for an Energy-Efficient Economy and Database of State Incentives for Renewables & Efficiency

## Benefits for industry

CHP and WHP installations are delivering efficiency and cost savings to industries such as agriculture, oil and gas, and mineral extraction across the country. The Kennecott Utah Copper refinery in Salt Lake County is one facility taking advantage of the benefits of WHP. Based on forecasts of rising energy costs and the high level of energy intensity required for copper production, the company invested in a WHP installation to generate power from heat that would otherwise be vented. Running 24 hours a day, the unit produces more than 20 MW of energy, which is 60 percent of the site's total power needs.

Sources: U.S. Department of Energy's CHP Technical Assistance Partnerships: Southwest

## CHP improves energy security

Reducing strain on the electrical grid with energy-efficient technologies increases power reliability during electrical outages due to extreme weather and other causes.

Utah experienced 1,994 minutes—more than 33 hours—of power outages in 2014. Almost 127,000 residents were affected by the 46 blackouts.

Source: Eaton Corp.

## Examples of CHP Facilities in Utah

City	Facility	Application	Year operational	Capacity (kW)	Fuel type
Magna	Kennecott Utah Copper refinery	Primary metals	2010	6,000	Natural gas/propane
Magna	Kennecott Utah Copper smelter	Primary metals	1995	32,000	Waste heat recovery
Panguitch	Ashley Valley Engineering	Wood products	1990	4,520	Wood/wood waste
Salt Lake City	Tesoro Petroleum Corp.	Refining	2004	22,000	Natural gas/propane

Source: U.S. Department of Energy

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### For further information, please visit:

[pewtrusts.org/industrialefficiency](http://pewtrusts.org/industrialefficiency)

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