

The State of CHP: Utah



The information in this document provides a general overview of the state of CHP in Utah, with data on current installations, technical potential, and economics for CHP. For help with questions about specific CHP opportunities in Utah, please consult with the [Southwest CHP Technical Assistance Partnership](#).

Installed CHP

CHP Technical Potential

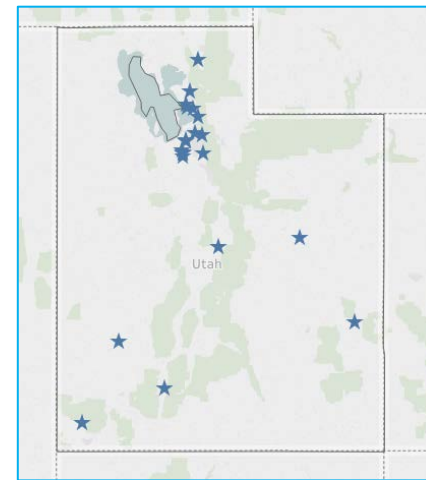
CHP Economics

CHP Partners

Utah Installed Base of CHP

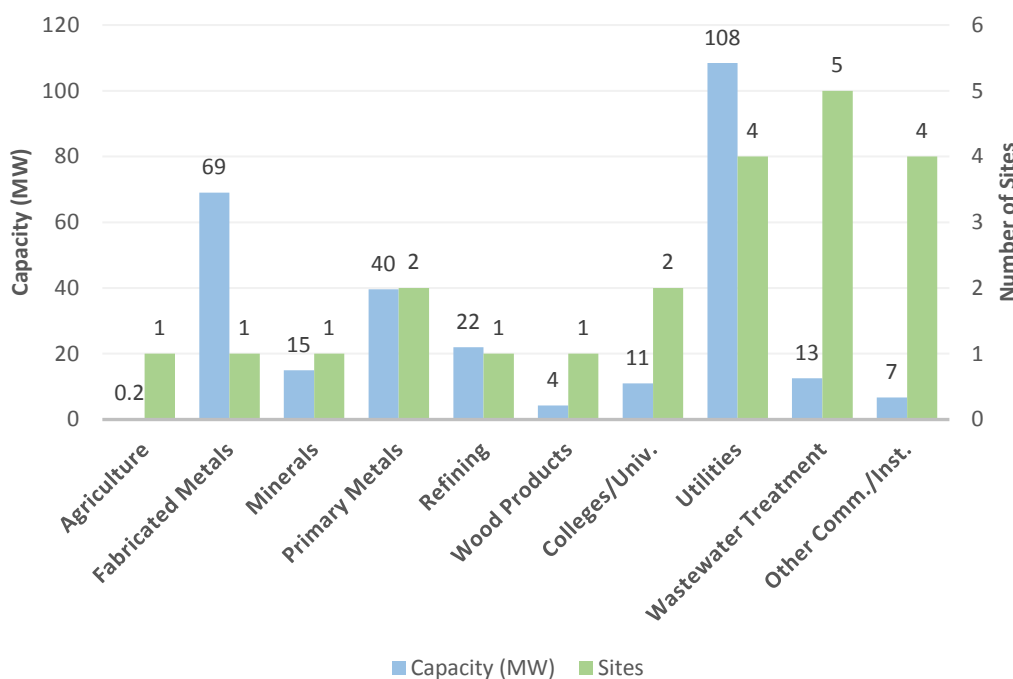
[U.S. DOE Combined Heat and Power Installation Database](#)

Sector	Installations	Capacity (MW)
Industrial	5	135
Commercial/Institutional	15	139
Other	2	15
Total	22	289



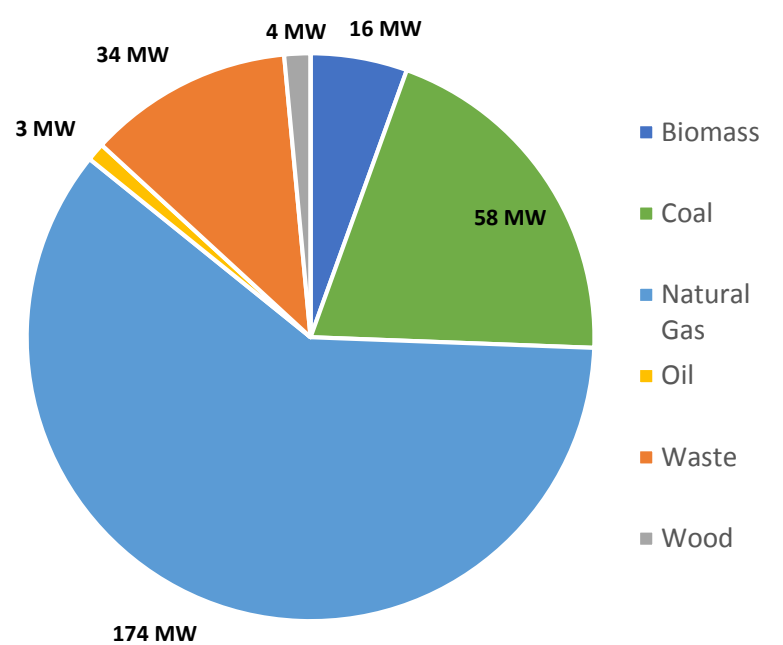
The Southwest CHP Technical Assistance Partnership has compiled information on certain illustrative CHP projects in Utah. You can access these by visiting the Department of Energy's [CHP Project Profiles Database](#).

Utah CHP by Application



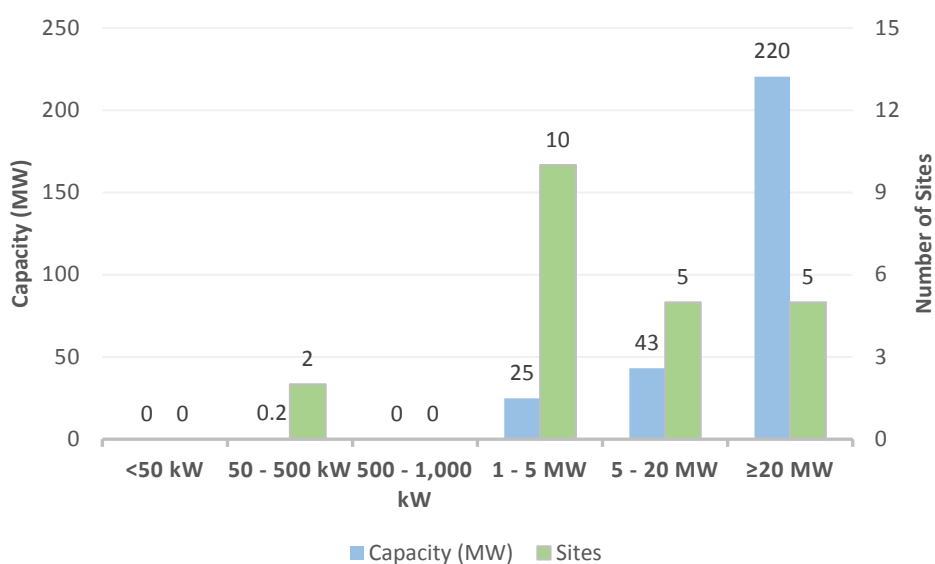
Source: DOE CHP Installation Database (U.S. installations as of Dec. 31, 2016)

Utah CHP Capacity (MW) by Fuel Type



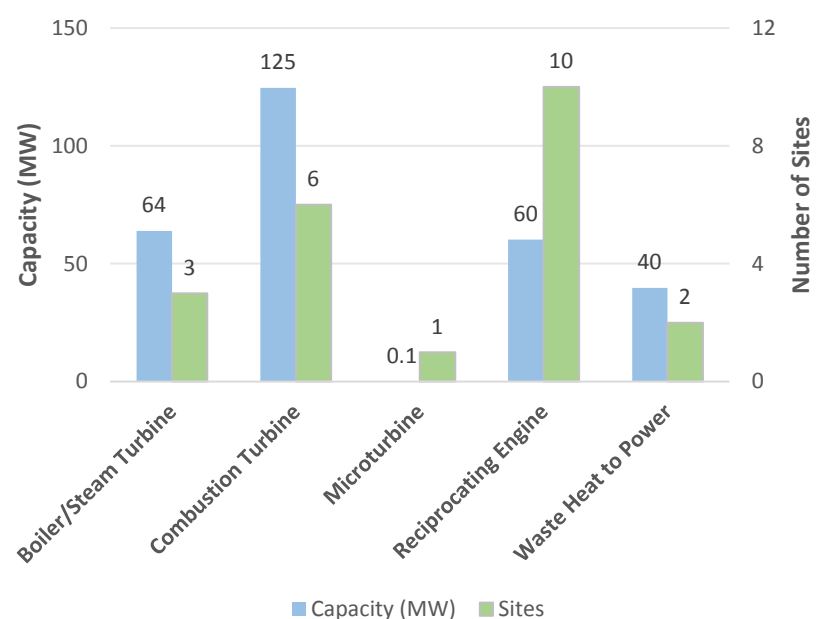
Source: DOE CHP Installation Database (U.S. installations as of Dec. 31, 2016)

Utah CHP by Size Range



Source: DOE CHP Installation Database (U.S. installations as of Dec. 31, 2016)

Utah CHP by Technology



Source: DOE CHP Installation Database (U.S. installations as of Dec. 31, 2016)

Combined Heat and Power (CHP) – sometimes referred to as cogeneration – is an efficient and clean approach to generating on-site electric power and useful thermal energy from a single fuel source.



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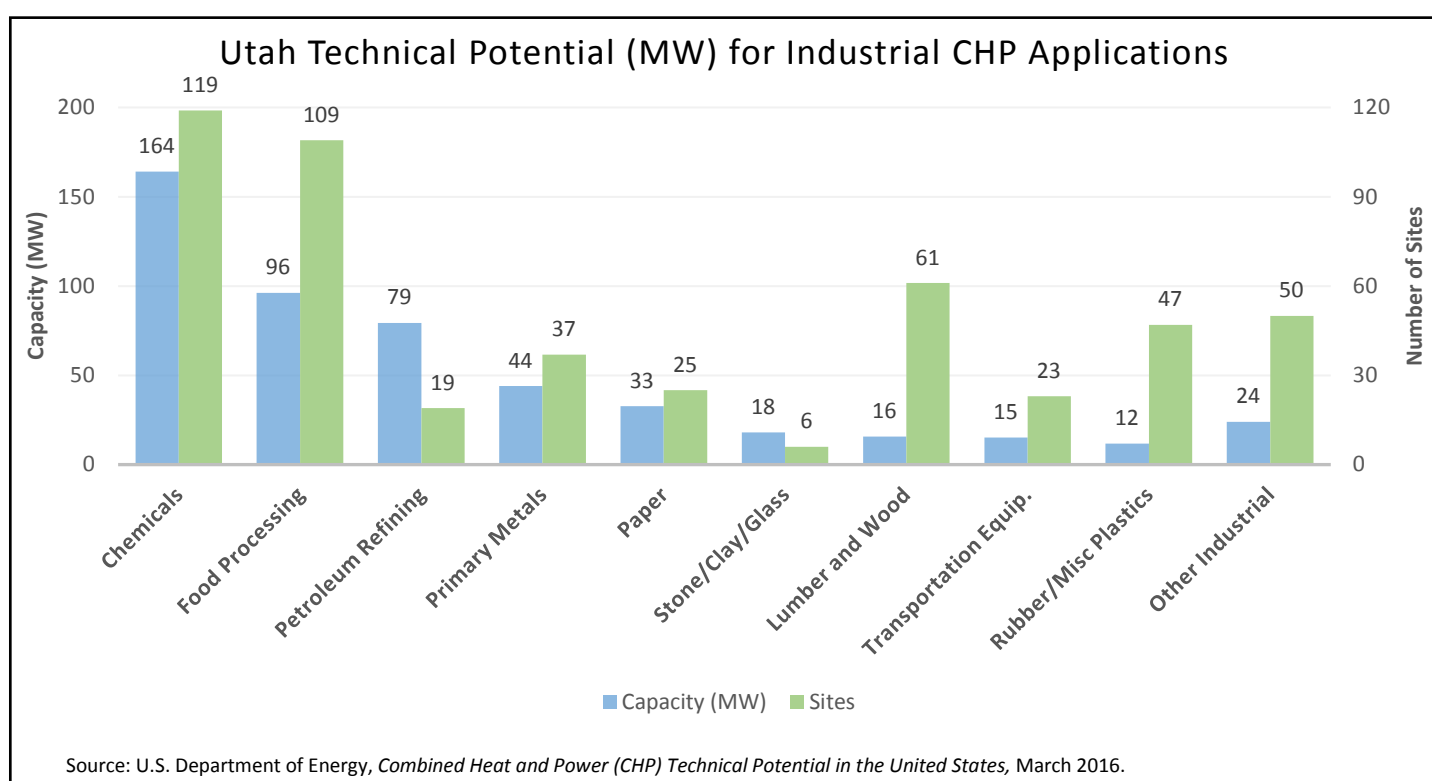
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Utah Technical Potential for New CHP Installations

U.S. DOE Analysis: Combined Heat and Power (CHP) Technical Potential in the United States

Sector	Potential Sites	Potential Capacity (MW)
Industrial	496	501
Commercial/Institutional	2,180	618
Total	2,676	1,119

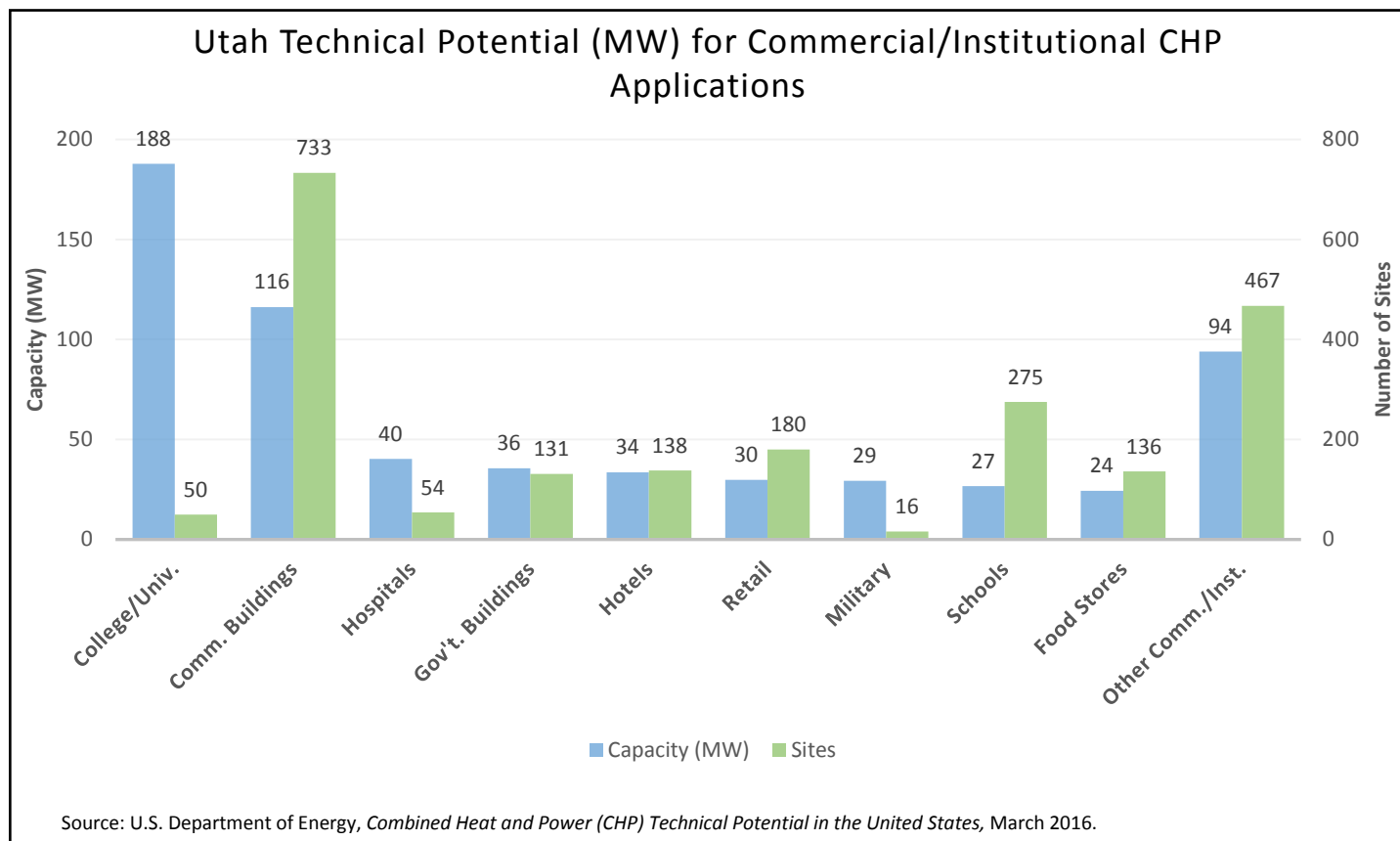


Source: U.S. Department of Energy, Combined Heat and Power (CHP) Technical Potential in the United States, March 2016.

Technical Potential by CHP Size Range for Top Five Industrial Sectors

Application	50-500 kW		0.5 - 1 MW		1 - 5 MW		5 - 20 MW		>20 MW		Total	
	Sites	MW	Sites	MW	Sites	MW	Sites	MW	Sites	MW	Total Sites	Total MW
Chemicals	68	12	14	11	30	68	6	50	1	24	119	164
Food Processing	73	16	13	10	18	40	5	30	0	0	109	96
Petroleum Refining	2	1	4	3	8	20	5	56	0	0	19	79
Primary Metals	24	5	7	5	5	9	0	0	1	25	37	44
Paper	15	4	6	5	2	3	2	21	0	0	25	33
Other Industrial	152	23	20	14	13	33	2	14	0	0	187	84
Total	334	61	64	47	76	174	20	170	2	48	496	501

Source: U.S. Department of Energy, Combined Heat and Power (CHP) Technical Potential in the United States, March 2016.



Source: U.S. Department of Energy, Combined Heat and Power (CHP) Technical Potential in the United States, March 2016.

Technical Potential by CHP Size Range for Top Five Commercial/Institutional Sectors

Application	50-500 kW		0.5 - 1 MW		1 - 5 MW		5 - 20 MW		>20 MW		Total	
	Sites	MW	Sites	MW	Sites	MW	Sites	MW	Sites	MW	Total Sites	Total MW
College/Univ.	32	5	3	2	7	17	5	49	3	116	50	188
Commercial Buildings	529	26	163	65	41	25	0	0	0	0	733	116
Hospitals	29	6	13	10	12	25	0	0	0	0	54	40
Government Buildings	116	17	7	4	8	15	0	0	0	0	131	36
Hotels	125	15	3	2	10	17	0	0	0	0	138	34
Other Comm./Inst.	1,018	121	40	23	10	17	4	43	0	0	1,072	204
Total	1,851	189	229	105	88	116	9	92	3	116	2,180	618

Source: U.S. Department of Energy, Combined Heat and Power (CHP) Technical Potential in the United States, March 2016.

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Utah CHP Economics

The most important indicators for CHP economics are electricity and gas prices. For most potential CHP installations, natural gas and electricity rates for host facilities will fall within the range of average commercial and industrial prices. Lower energy prices may be possible for large CHP applications.

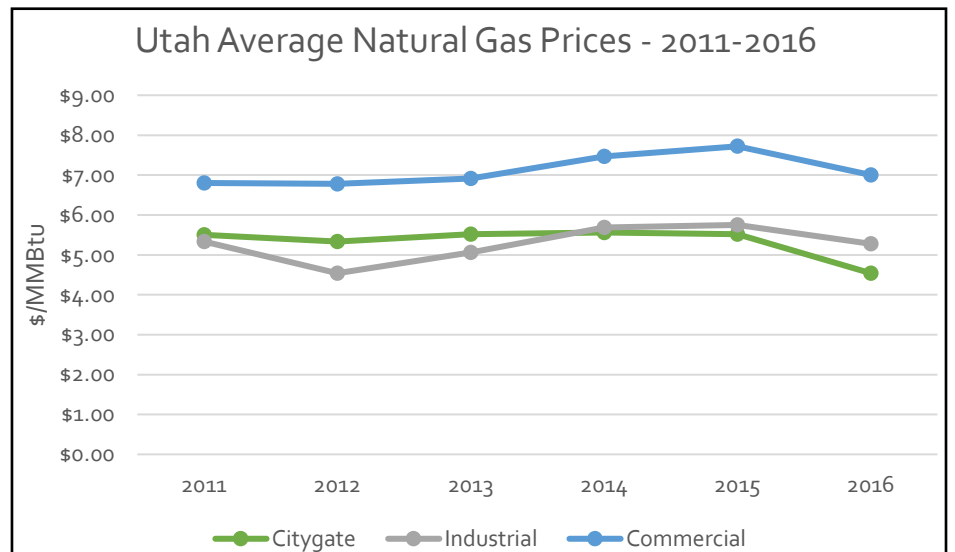
Utah Natural Gas Prices

Utah Average Gas Prices - 2016

Sector	UT Price (\$/MMBtu)	U.S. Price (\$/MMBtu)
Citygate*	4.54	3.75
Industrial	5.28	3.39
Commercial	7.00	7.22

Source: U.S. Energy Information Administration, "Natural Gas Prices", https://www.eia.gov/dnav/ng/ng_pri_sum_dcu_SUT_a.htm

The EIA industrial natural gas price is a full tariff rate, and most large consumers are purchasing gas commodities from marketers at a lower rate.



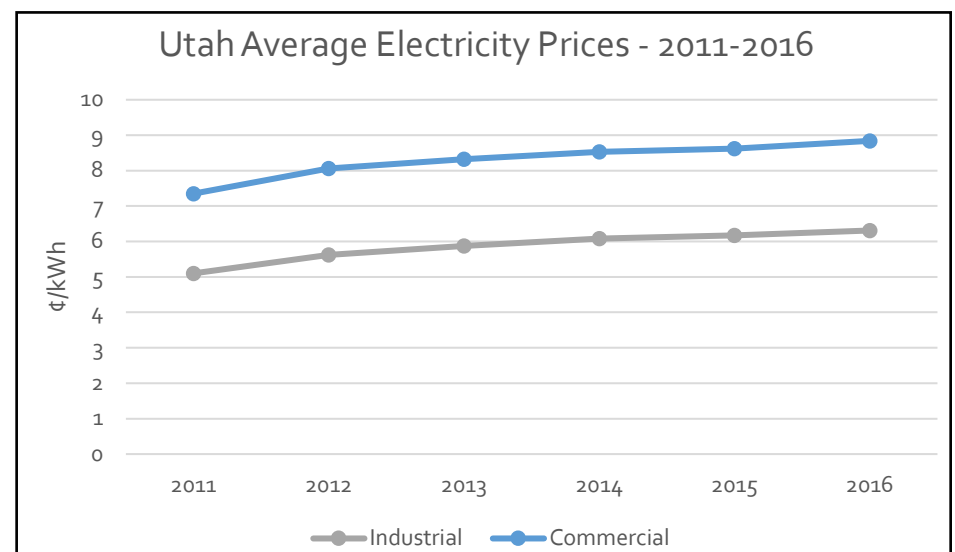
Utah Electricity Prices

Utah Average Electricity Prices - 2016

Sector	UT Price (¢/kWh)	U.S. Price (¢/kWh)
Industrial	6.31	6.75
Commercial	8.84	10.37

Source: U.S. Energy Information Administration, "Electricity Data Browser", <https://www.eia.gov/electricity/data.cfm>

Electricity rates can vary greatly by utility and facility size range. The rates below from EIA represent general averages; individual facility rates may vary.



Utah Average Delivered Electricity Prices by Utility

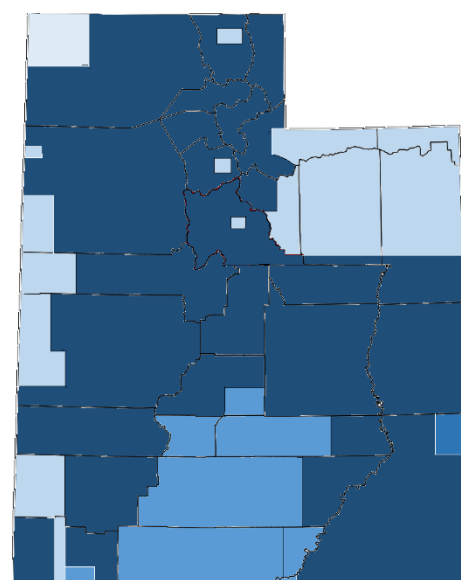
Utility	Industrial Price (¢/kWh)	Commercial Price (¢/kWh)	Average Price** (¢/kWh)
PacifiCorp	14.00	8.66	11.33
Empire Electric Assn	7.60	12.49	10.05
City of St George	-	9.18	9.18
Garkane Energy Coop	6.82	9.39	8.10
City of Logan	6.78	8.54	7.66
City of Murray	6.20	8.26	7.23
Provo City Corp	5.90	8.50	7.20
Dixie Escalante REA	8.88	5.50	7.19
Mt Wheeler Power	6.07	8.23	7.15
Moon Lake Electric Assn	6.52	7.62	7.07
Raft Rural Elec Coop	5.19	6.56	5.88

Source: U.S. Energy Information Administration, "Annual retail price of electricity by utility", <https://www.eia.gov/electricity/data.cfm>

*Citygate is a point or measuring station at which a distributing gas utility receives gas from a NG pipeline company or transmission system.

**Average of commercial and industrial electricity prices as reported by EIA.

Utah Electricity Prices – Heat Map



- Raft Rural Elec Coop
- Logan / Murray / Provo City / Dixie Escalante / Mt Wheeler / Moon Lake
- City of St George / Garkane Energy Coop
- Empire Electric Assn
- PacifiCorp

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CHP Technical
Potential

CHP Economics

CHP Partners

Department of Energy CHP Partnerships

Southwest CHP Technical Assistance Partnership



U.S. DEPARTMENT OF ENERGY

CHP Technical Assistance Partnerships

SOUTHWEST

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CHP for Resiliency Accelerator

The U.S. DOE is collaborating with a group of cities, states, and utilities who are actively pursuing CHP as a consideration in resiliency planning for critical infrastructure in their jurisdictions. This has included defining resiliency, identifying critical infrastructure, and assessing CHP opportunities. This process is being documented in a Resiliency Planning Tool. For more information: [CHP for Resiliency Accelerator Website](#).

- State of Utah

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U.S. DEPARTMENT OF ENERGY

CHP Technical Assistance Partnerships