

The State of CHP: Alabama



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

Installed CHP

CHP Technical Potential

CHP Economics

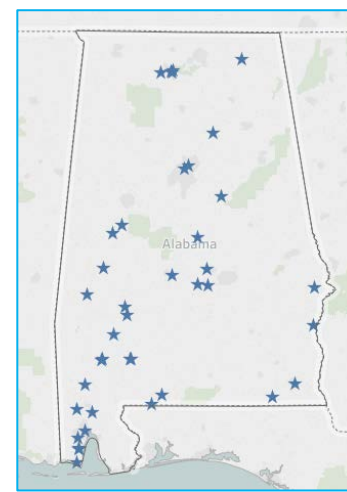
CHP Partners

Alabama Installed Base of CHP

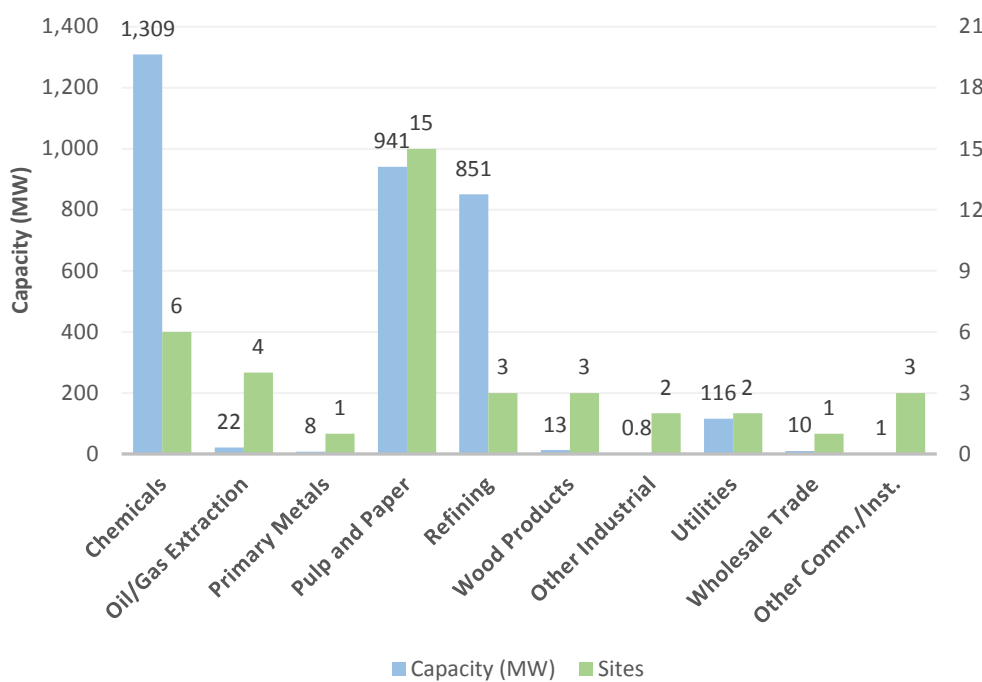
[U.S. DOE Combined Heat and Power Installation Database](#)

Sector	Installations	Capacity (MW)
Industrial	29	3,122
Commercial/Institutional	6	127
Other	5	22
Total	40	3,271

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

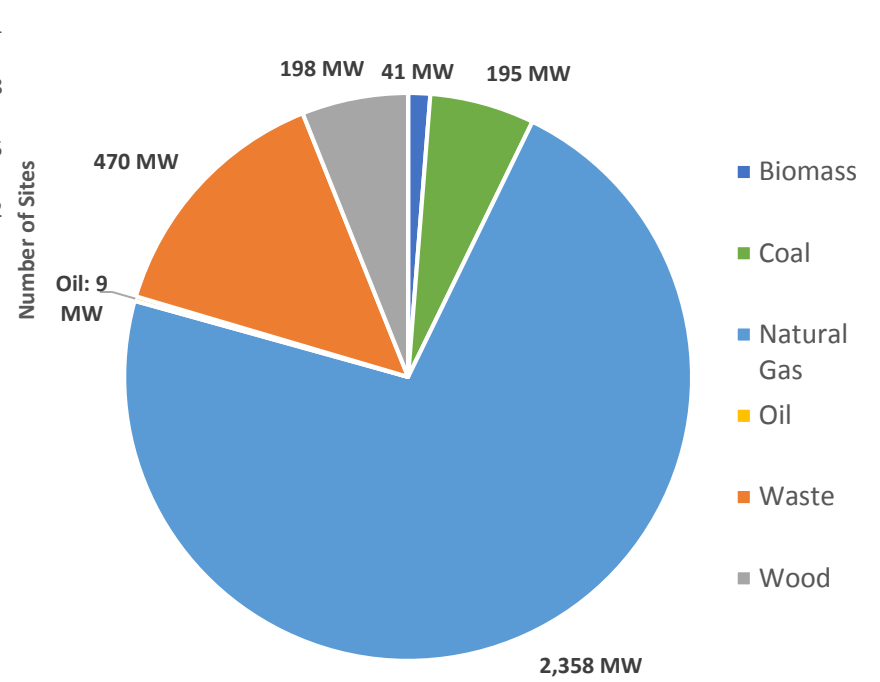


Alabama CHP by Application



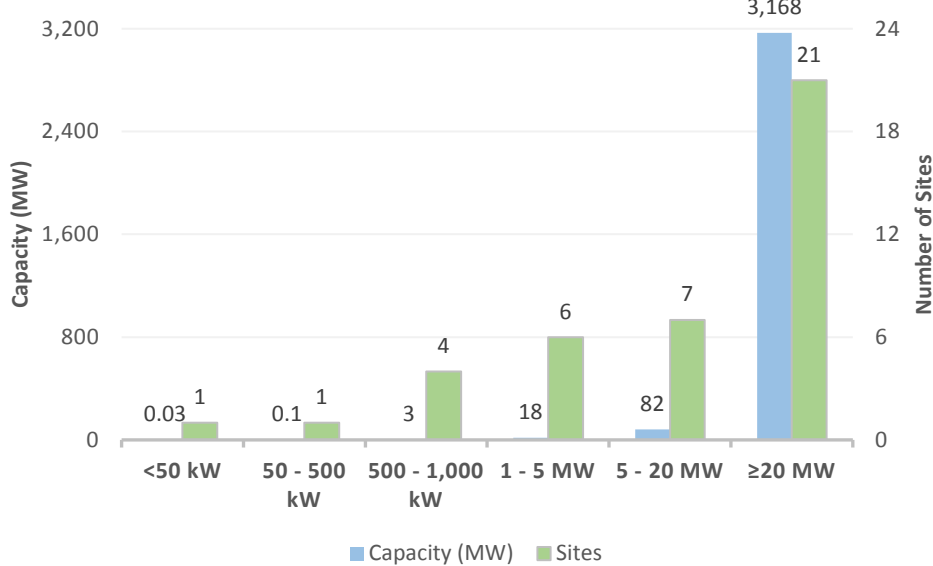
Source: DOE CHP Installation Database (U.S. installations as of Dec. 31, 2016)

Alabama CHP Capacity (MW) by Fuel Type



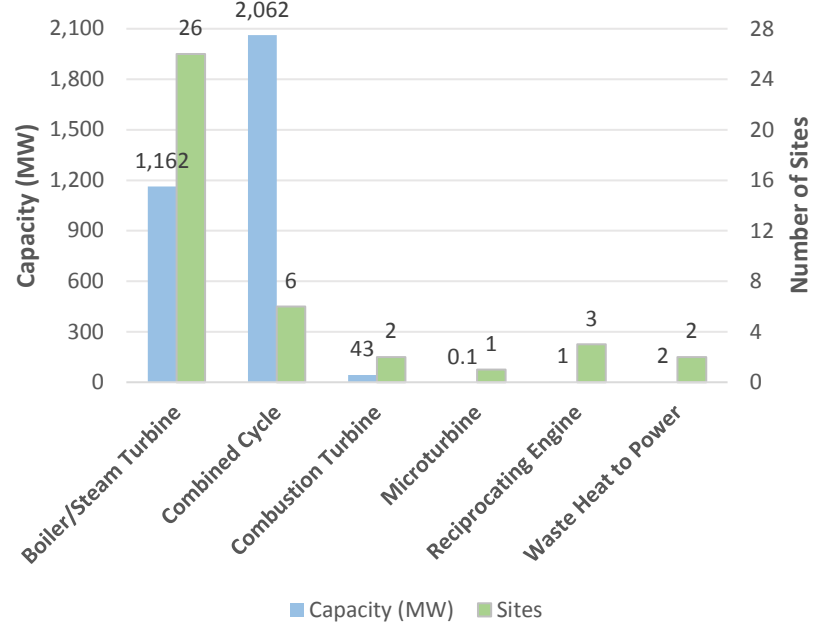
Source: DOE CHP Installation Database (U.S. installations as of Dec. 31, 2016)

Alabama CHP by Size Range



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

Alabama 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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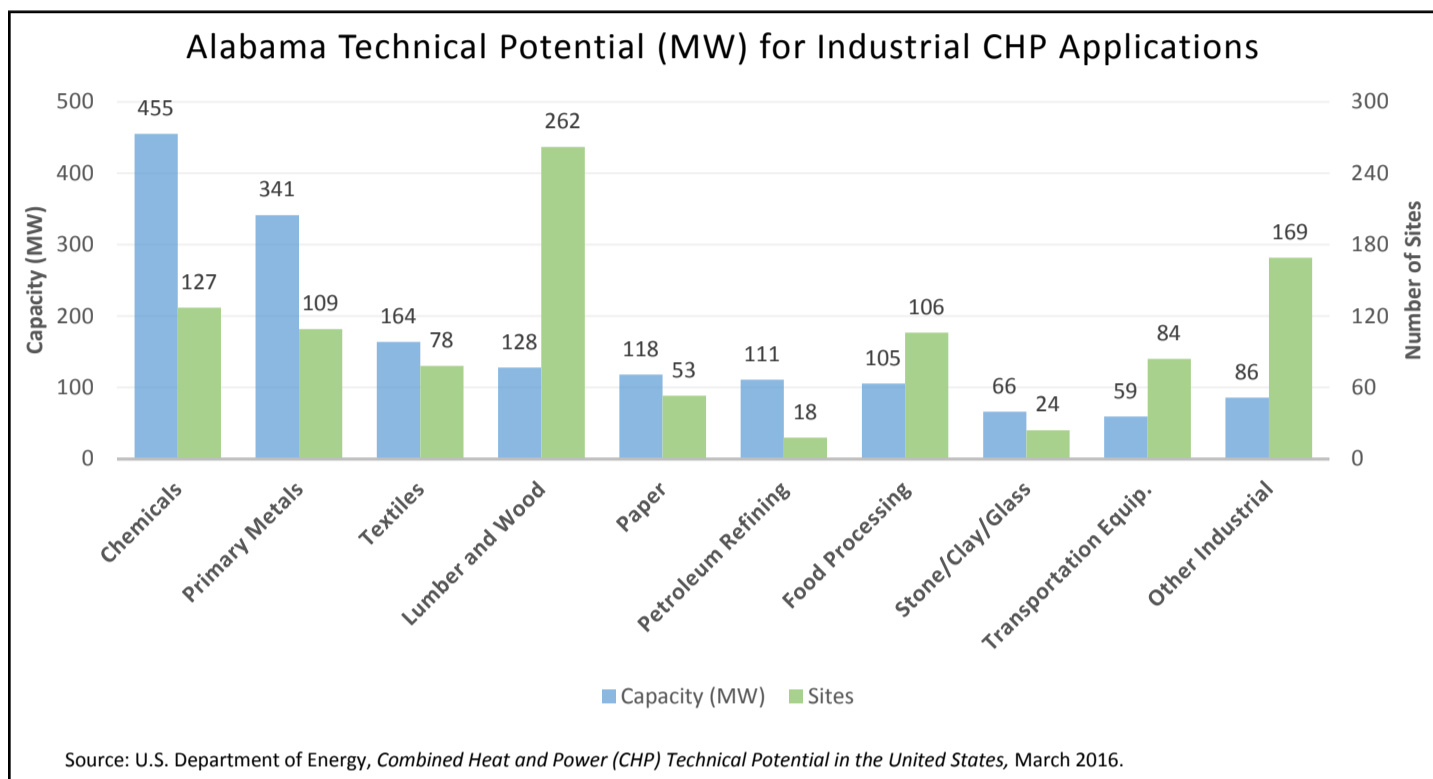
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Alabama Technical Potential for New CHP Installations

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

Sector	Potential Sites	Potential Capacity (MW)
Industrial	1,030	1,634
Commercial/Institutional	3,482	1,143
Total	4,512	2,777

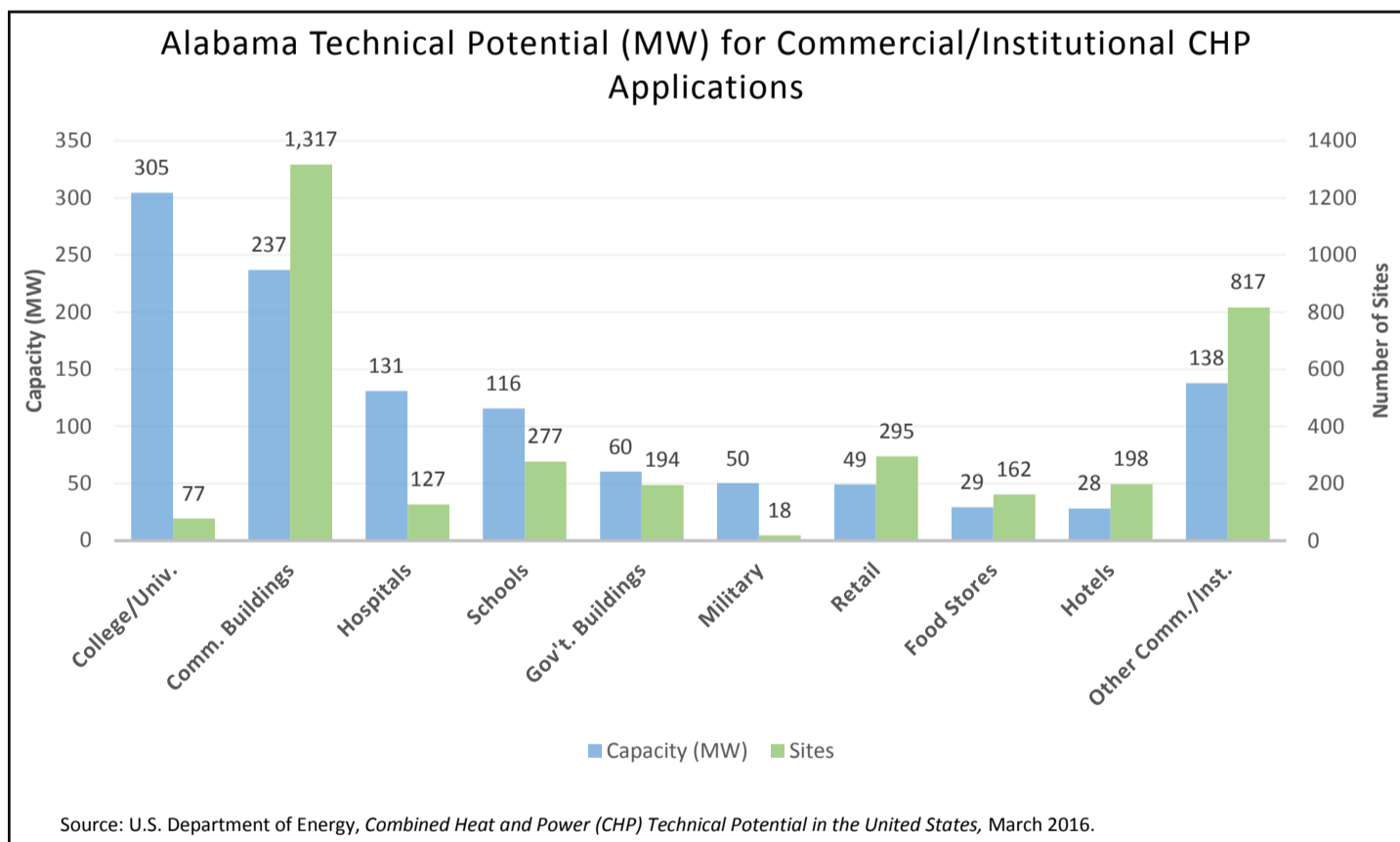


Source: U.S. Department of Energy, *Combined Heat and Power (CHP) Technical Potential in the United States*, March 2016.

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	56	10	18	13	35	74	13	113	5	245	127	455
Primary Metals	54	11	19	13	21	45	11	134	4	138	109	341
Textiles	34	6	12	10	25	50	5	45	2	53	78	164
Lumber and Wood	191	38	45	31	24	48	2	11	0	0	262	128
Paper	31	8	7	5	11	24	2	19	2	63	53	118
Other Industrial	274	47	51	35	61	142	13	125	2	78	401	428
Total	640	119	152	107	177	384	46	448	15	575	1,030	1,634

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.	33	8	8	5	21	48	10	93	5	151	77	305
Commercial Buildings	878	44	351	140	88	53	0	0	0	0	1,317	237
Hospitals	58	16	28	19	38	76	3	19	0	0	127	131
Schools	226	80	47	31	4	4	0	0	0	0	277	116
Government Buildings	176	23	6	4	9	13	3	20	0	0	194	60
Other Comm./Inst.	1,411	176	55	32	18	27	6	60	0	0	1,490	294
Total	2,782	347	495	231	178	221	22	192	5	151	3,482	1,143

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

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Alabama 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.

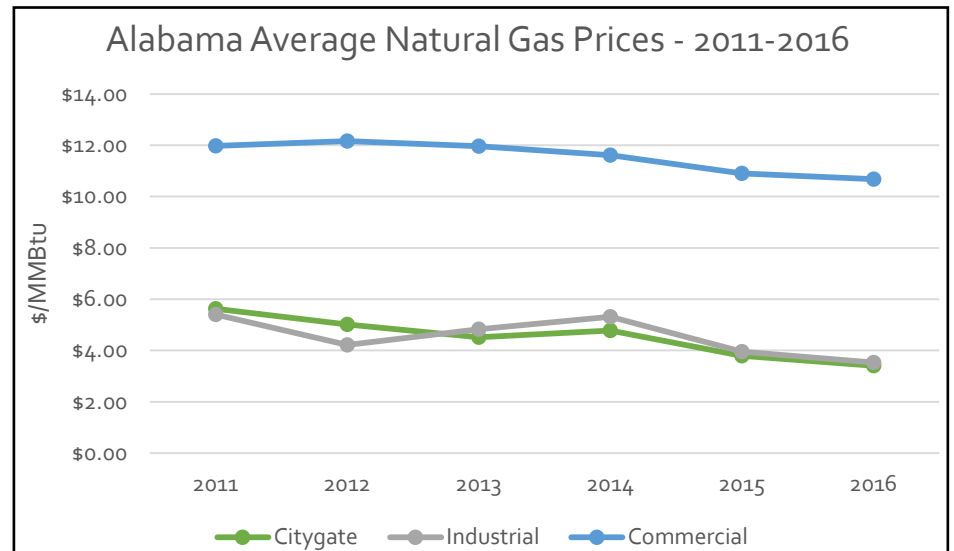
Alabama Natural Gas Prices

Alabama Average Gas Prices - 2016

Sector	AL Price (\$/MMBtu)	U.S. Price (\$/MMBtu)
Citygate*	3.40	3.75
Industrial	3.53	3.39
Commercial	10.68	7.22

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



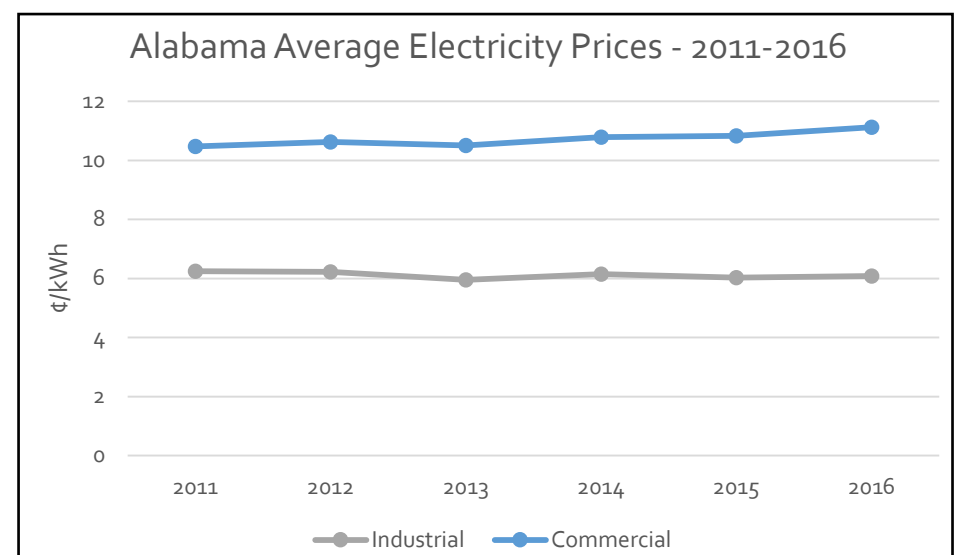
Alabama Electricity Prices

Alabama Average Electricity Prices - 2016

Sector	AL Price (¢/kWh)	U.S. Price (¢/kWh)
Industrial	6.08	6.75
Commercial	11.12	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.



Alabama Average Delivered Electricity Prices by Utility

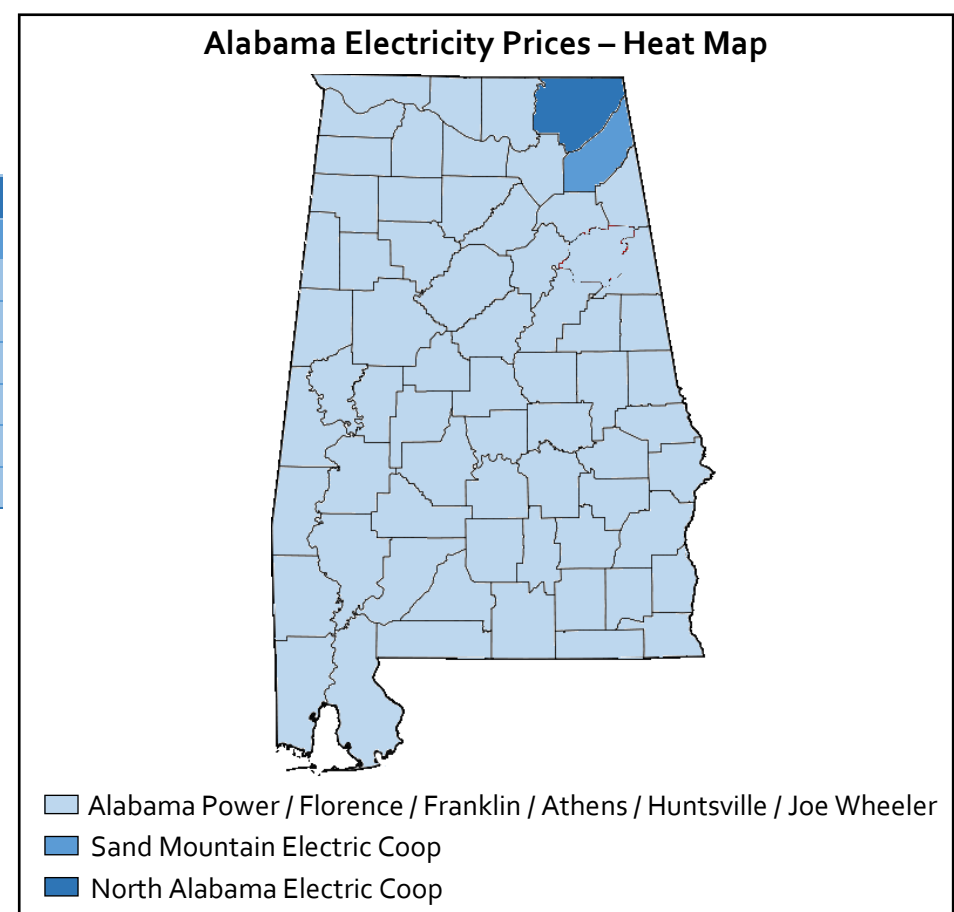
Utility	Industrial Price (¢/kWh)	Commercial Price (¢/kWh)	Average Price** (¢/kWh)
North Alabama Elec Coop	8.84	11.92	10.38
Sand Mountain Elec Coop	7.46	11.79	9.62
City of Florence	7.31	10.48	8.89
Joe Wheeler Elec Corp	5.76	11.83	8.80
Franklin Elec Coop	7.06	10.51	8.78
Alabama Power Co	6.14	11.13	8.64
City of Athens	6.86	10.37	8.61
City of Huntsville	6.83	9.37	8.10

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.

Alabama Electricity Prices – Heat Map



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CHP Technical
Potential

CHP Economics

CHP Partners

Department of Energy CHP Partnerships

Southeast CHP Technical Assistance Partnership



U.S. DEPARTMENT OF ENERGY
CHP Technical Assistance Partnerships
SOUTHEAST

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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](#).

- Currently, there are no CHP for Resiliency Accelerator partners in Alabama.

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U.S. DEPARTMENT OF ENERGY
CHP Technical Assistance Partnerships