

The State of CHP: SC



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

Installed CHP

CHP Technical Potential

CHP Economics

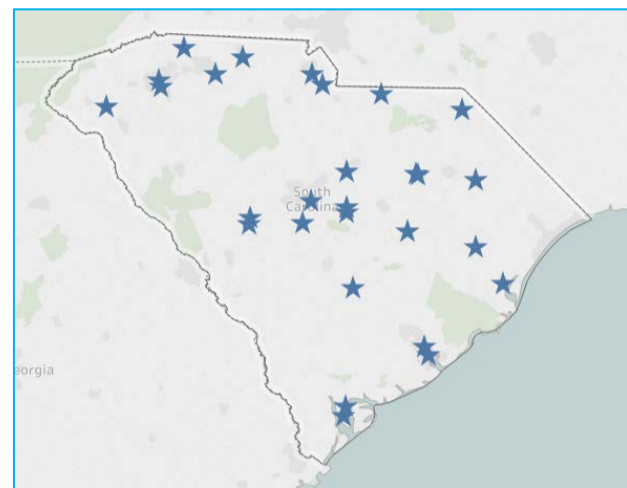
CHP Partners

South Carolina Installed Base of CHP

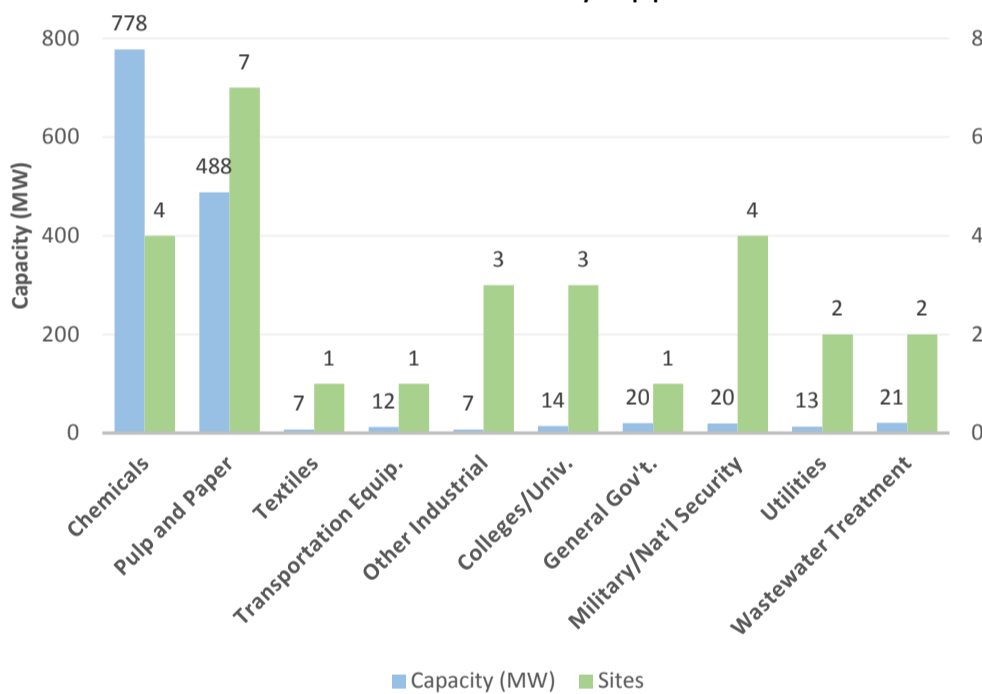
[U.S. DOE Combined Heat and Power Installation Database](#)

Sector	Installations	Capacity (MW)
Industrial	14	1,292
Commercial/Institutional	12	88
Other	2	2
Total	28	1,381

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

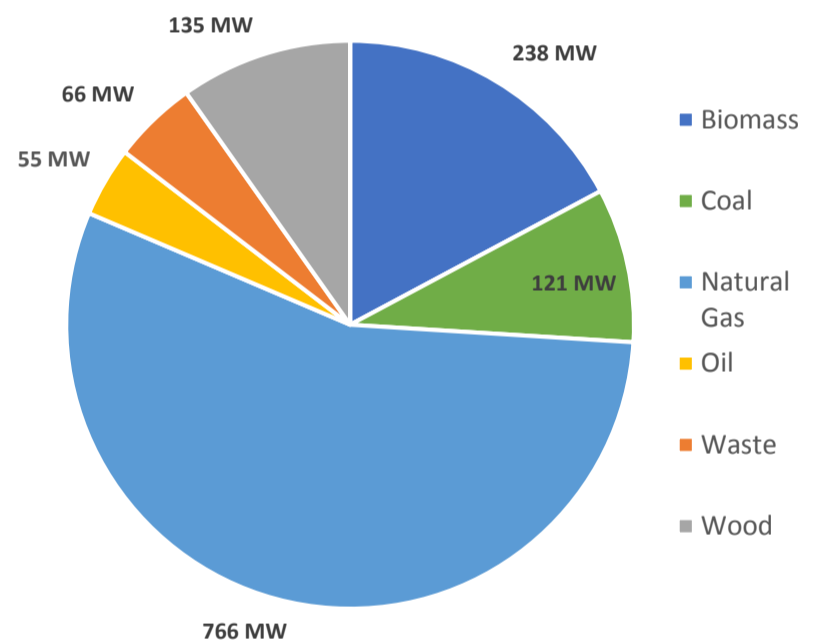


South Carolina CHP by Application



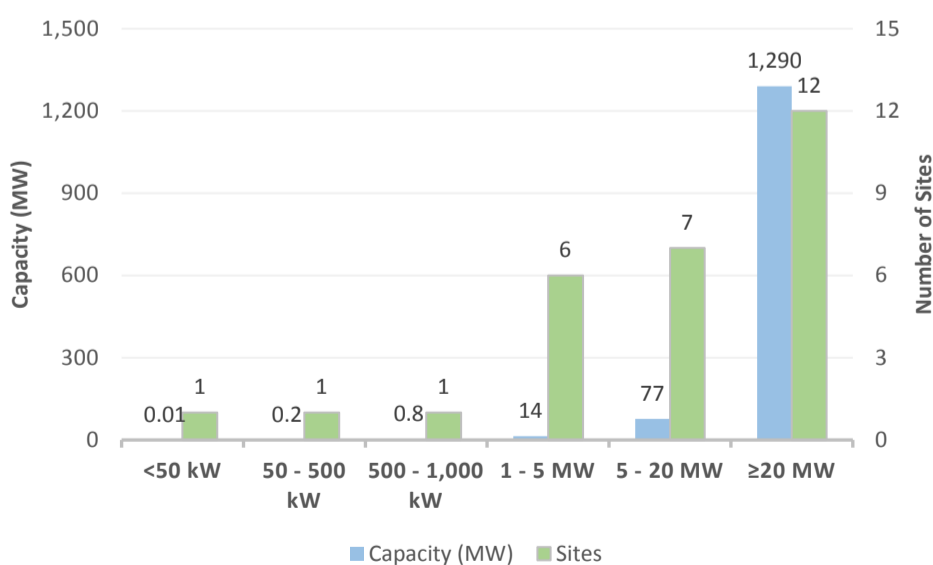
Source: DOE CHP Installation Database (U.S. installations as of Dec. 31, 2016)

South Carolina CHP Capacity (MW) by Fuel Type



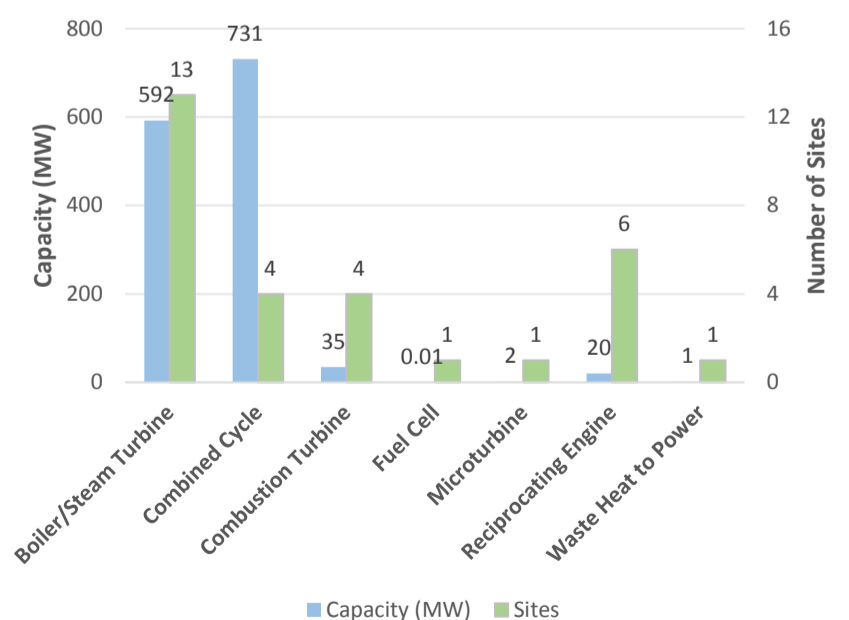
Source: DOE CHP Installation Database (U.S. installations as of Dec. 31, 2016)

South Carolina CHP by Size Range



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

South Carolina 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.





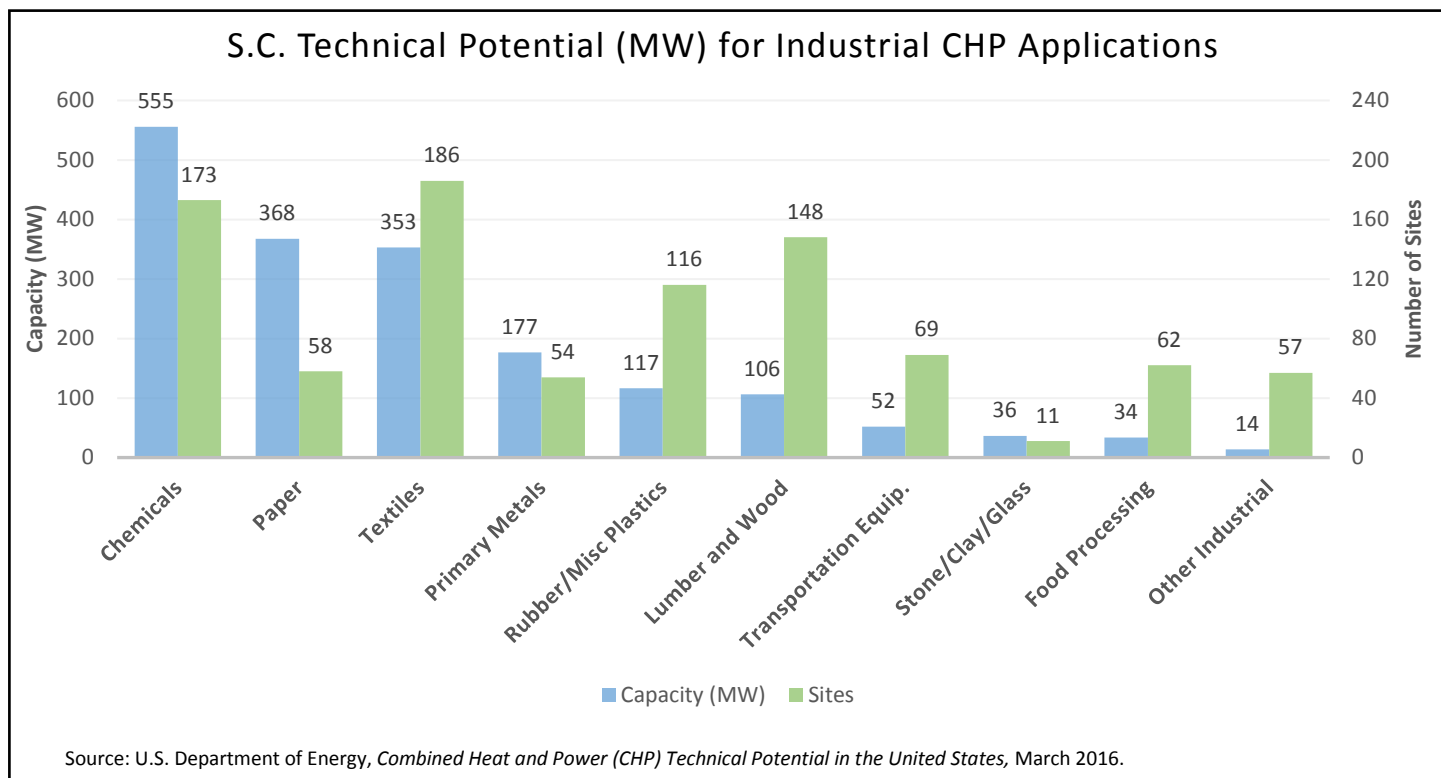
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South Carolina Technical Potential for New CHP Installations

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

Sector	Potential Sites	Potential Capacity (MW)
Industrial	934	1,812
Commercial/Institutional	3,339	1,251
Total	4,273	3,063

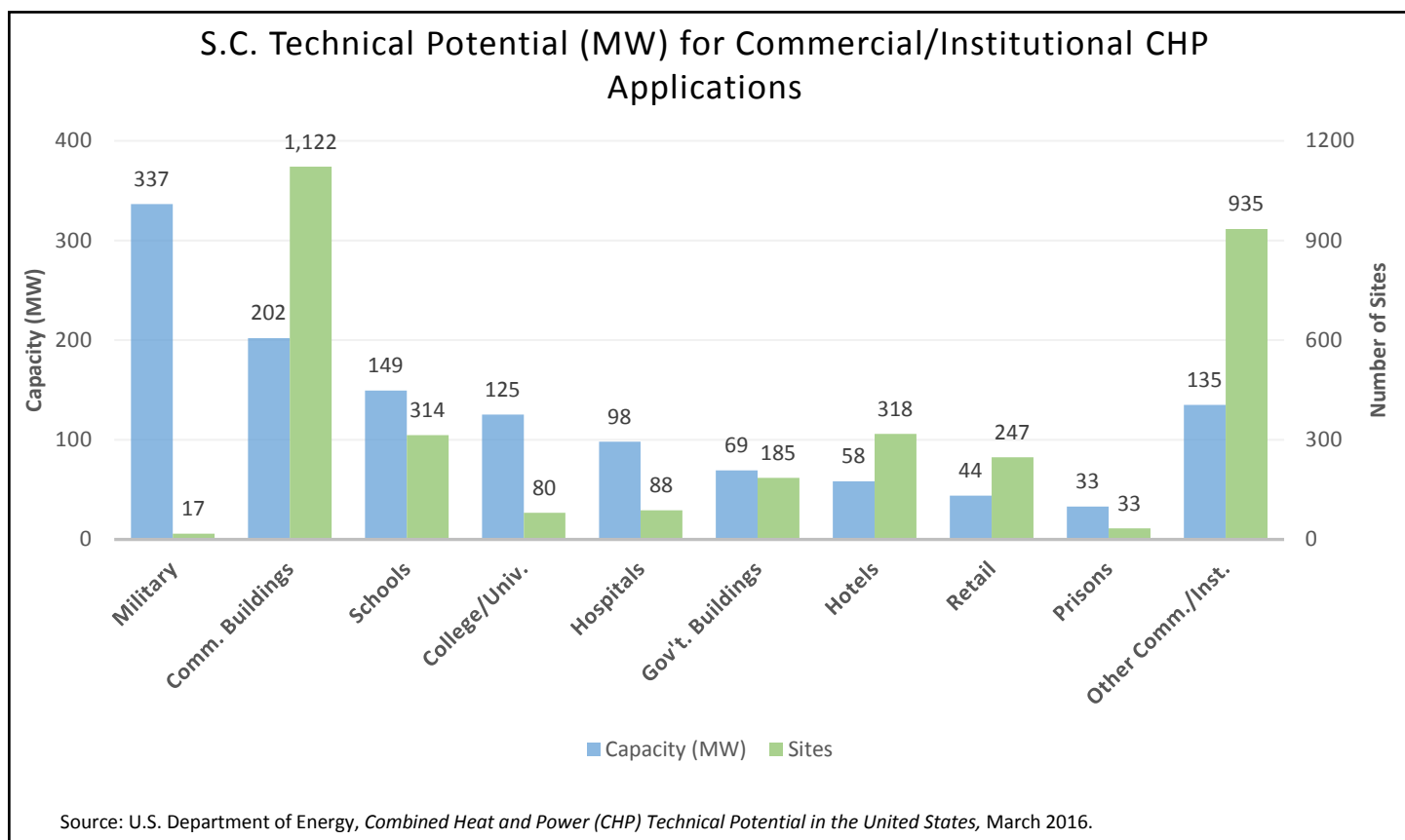


Source: U.S. Department of Energy, *Combined Heat and Power (CHP) Technical Potential in the United States*, March 2016.

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	76	17	25	19	49	105	14	104	9	310	173	555
Paper	30	7	8	5	10	29	6	66	4	260	58	368
Textiles	71	17	23	19	73	158	19	160	0	0	186	353
Primary Metals	26	6	13	9	11	33	2	30	2	99	54	177
Rubber/Misc Plastics	94	20	10	7	7	18	5	71	0	0	116	117
Other Industrial	297	67	79	59	150	343	46	430	15	669	587	1,570
Total	542	108	120	89	206	455	50	458	16	702	934	1,812

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
Military	7	2	2	1	2	6	5	36	1	291	17	337
Commercial Buildings	748	37	299	120	75	45	0	0	0	0	1,122	202
Schools	229	85	73	50	12	14	0	0	0	0	314	149
College/Univ.	39	8	6	5	30	80	5	33	0	0	80	125
Government Buildings	158	21	12	9	14	26	1	14	0	0	185	69
Other Comm./Inst.	1,595	194	70	42	52	89	1	14	0	0	1,718	340
Total	2,654	335	472	235	199	297	13	94	1	291	3,339	1,251

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

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South Carolina 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.

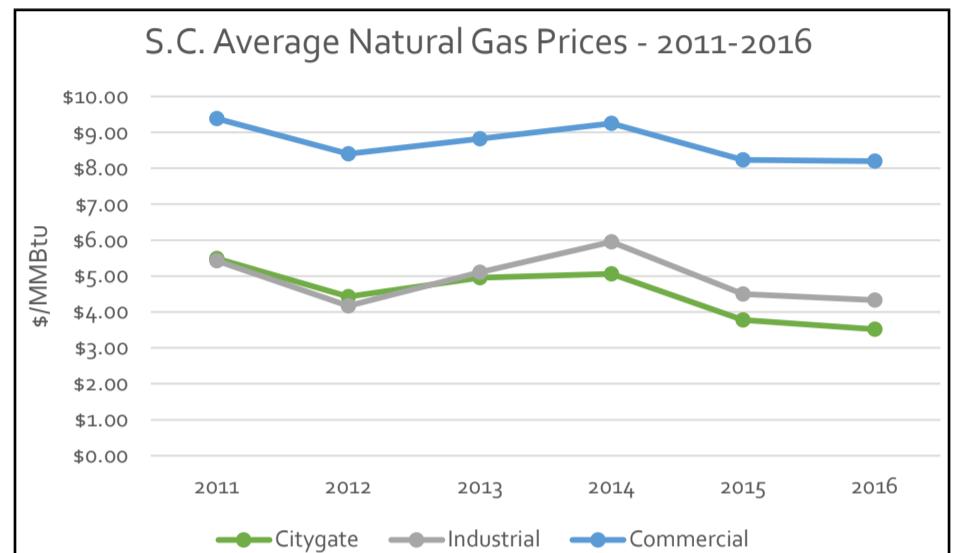
South Carolina Natural Gas Prices

South Carolina Average Gas Prices - 2016

Sector	SC Price (\$/MMBtu)	U.S. Price (\$/MMBtu)
Citygate*	3.52	3.75
Industrial	4.33	3.39
Commercial	8.20	7.22

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



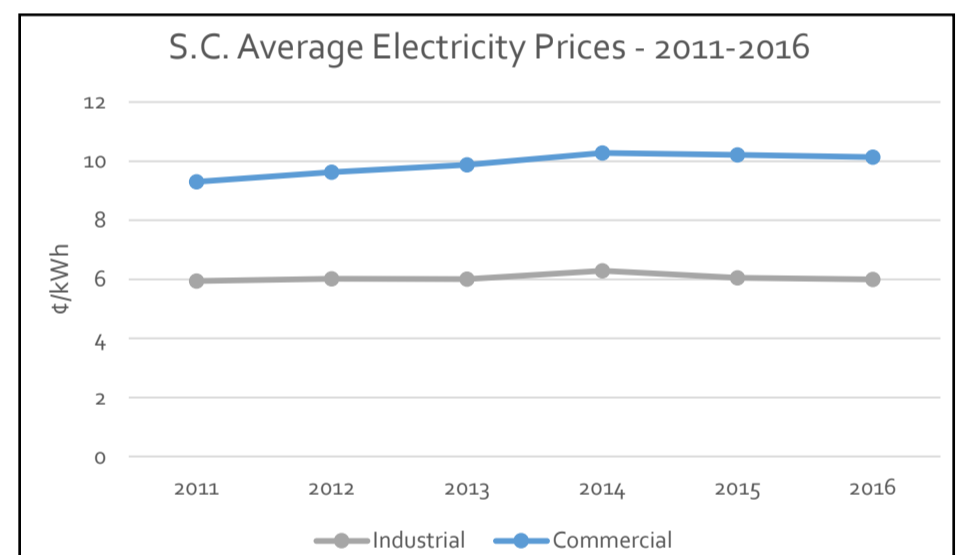
South Carolina Electricity Prices

South Carolina Average Electricity Prices - 2016

Sector	SC Price (¢/kWh)	U.S. Price (¢/kWh)
Industrial	6.00	6.75
Commercial	10.14	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.



South Carolina Average Delivered Electricity Prices by Utility

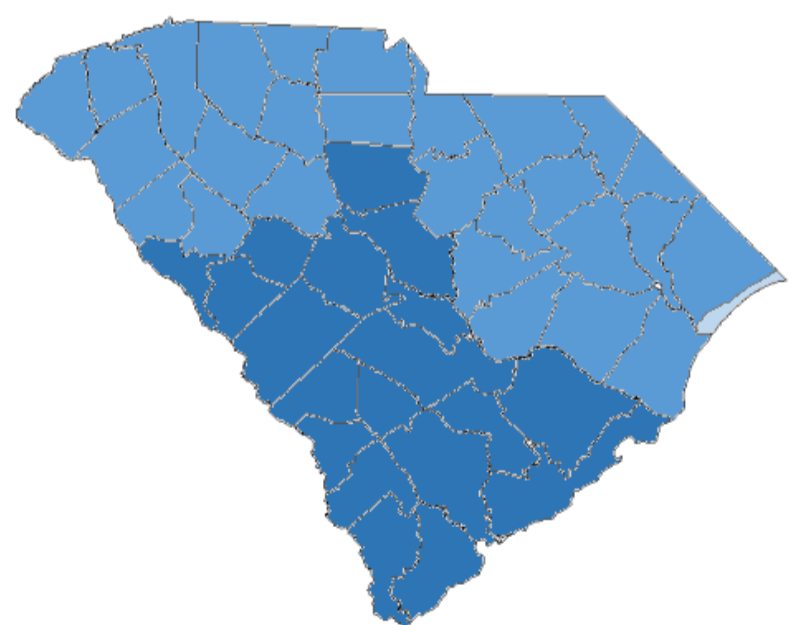
Utility	Industrial Price (¢/kWh)	Commercial Price (¢/kWh)	Average Price** (¢/kWh)
South Carolina Elec & Gas	6.96	11.21	9.09
Duke Energy Progress	6.67	8.88	7.77
Duke Energy Carolinas	6.15	8.62	7.39
SC Public Service Auth.	4.83	8.99	6.91

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.

South Carolina Electricity Prices – Heat Map



■ South Carolina Public Service Authority
■ Duke Energy Progress / Duke Energy Carolinas
■ South Carolina Electric & Gas Co

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CHP Technical
Potential

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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 South Carolina.

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U.S. DEPARTMENT OF ENERGY
CHP Technical Assistance Partnerships