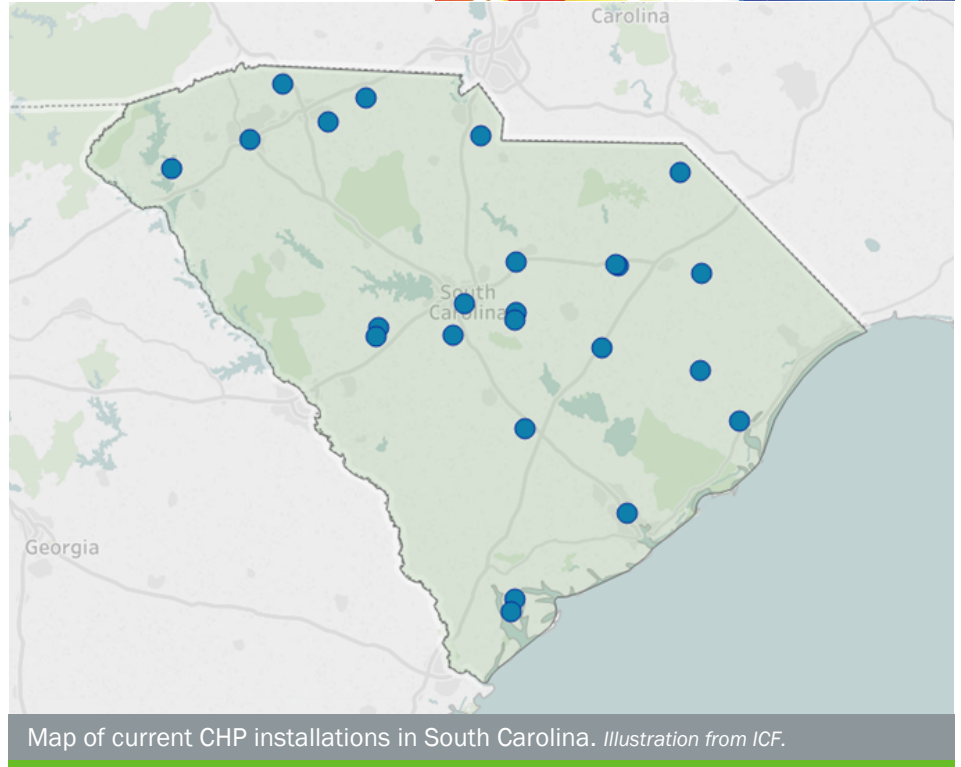


The State of CHP: South Carolina



Combined heat and power (CHP) – also 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. 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.



South Carolina: Installed CHP

U.S. DOE Combined Heat and Power Installation Database

The DOE CHP Installation Database is a data collection effort sponsored by the U.S. Department of Energy. The database contains a comprehensive listing of combined heat and power installations throughout the country, including those in South Carolina, and can be accessed by visiting <https://doe.icfwebservices.com/chp>.

CHP Project Profiles

The Southeast CHP TAP 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 at <https://betterbuildingsolutioncenter.energy.gov/chp/chp-project-profiles-database>.

Southeast CHP Technical Assistance Partnership

For assistance with questions about specific CHP opportunities in South Carolina, please consult with the Southeast CHP TAP by visiting sechptap.org or contacting the CHP TAP director.

South Carolina Existing CHP

Sector	Sites	Capacity (MW)
Industrial	12	1,303
Commercial/Institutional	10	70
Other	2	2
Total	24	1,375

Southeast CHP TAP Director

Isaac Panzarella, P.E.

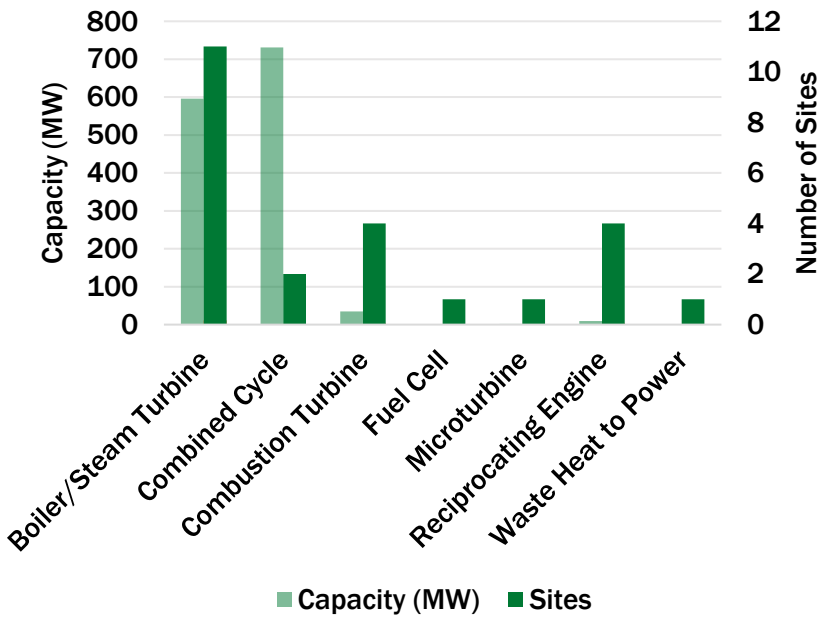
- North Carolina State University
- ipanzarella@ncsu.edu
- 919-515-0354

SOUTHEAST

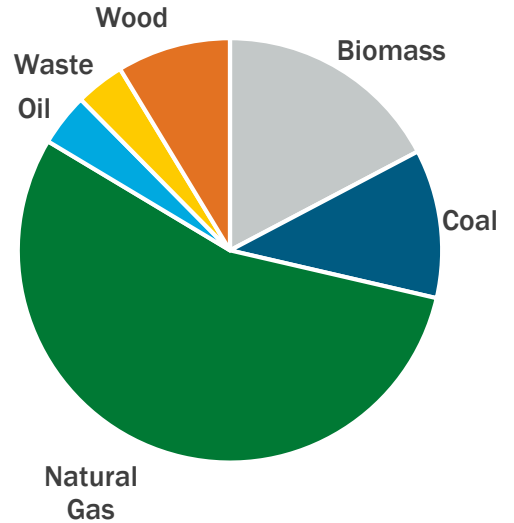


CHP
TECHNICAL ASSISTANCE
PARTNERSHIPS

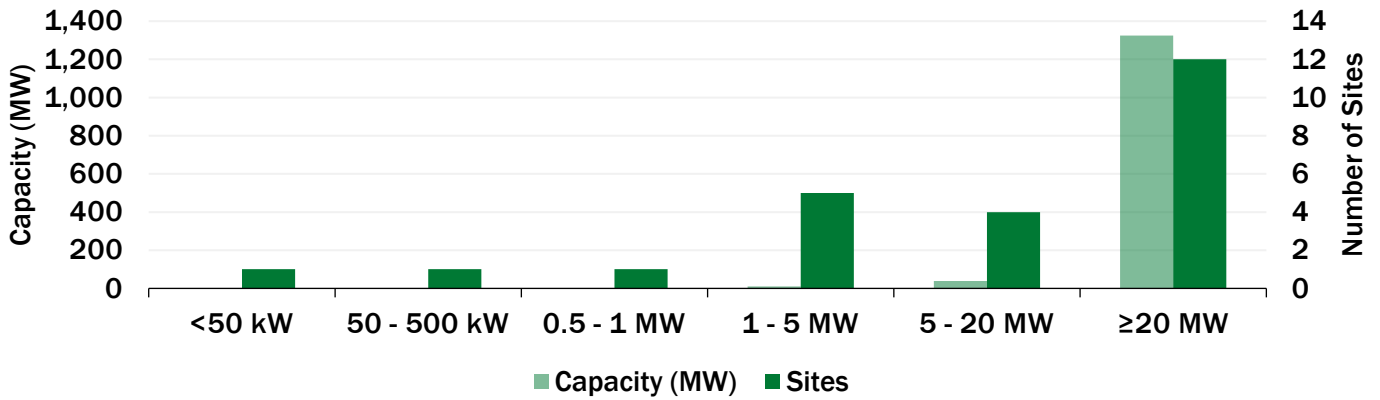
South Carolina CHP by Technology



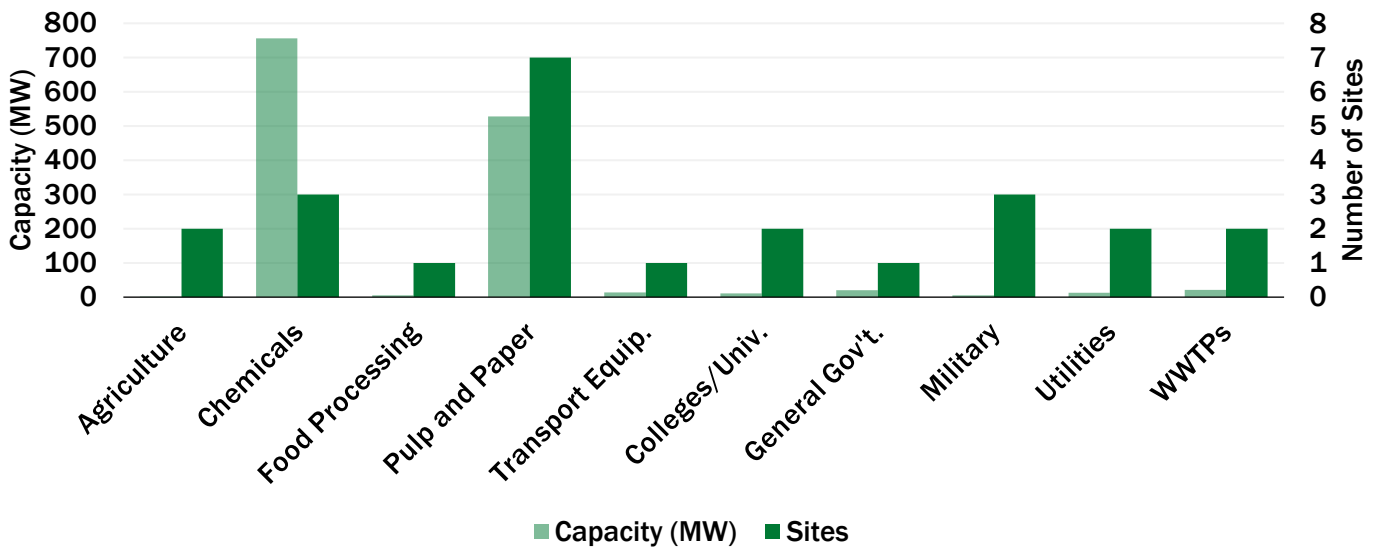
South Carolina CHP Capacity (MW) by Fuel



South Carolina CHP by Size Range



South Carolina CHP by Application



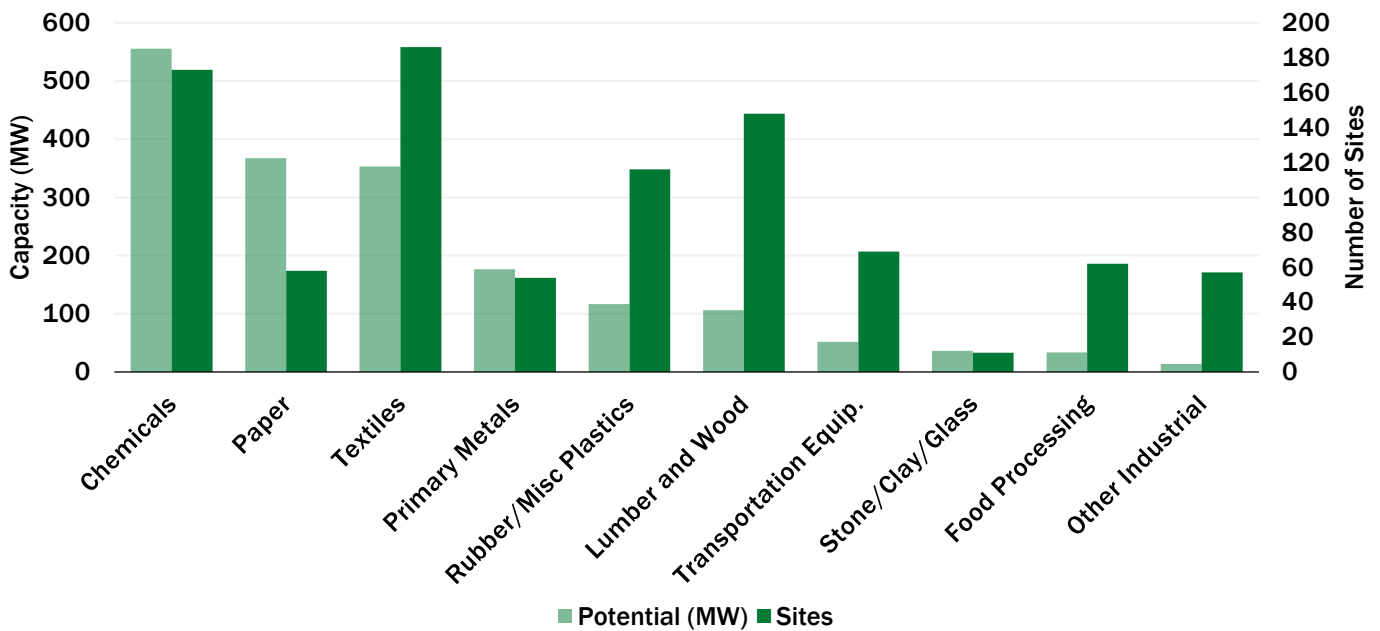
South Carolina: Technical Potential for New CHP Installations

The “Combined Heat and Power (CHP) Technical Potential in the United States” market analysis report provides data on the technical potential in industrial facilities and commercial buildings for “topping cycle” CHP, waste heat to power (WHP) CHP, and district energy CHP in the U.S. Read the report [here](#).

South Carolina CHP Technical Potential

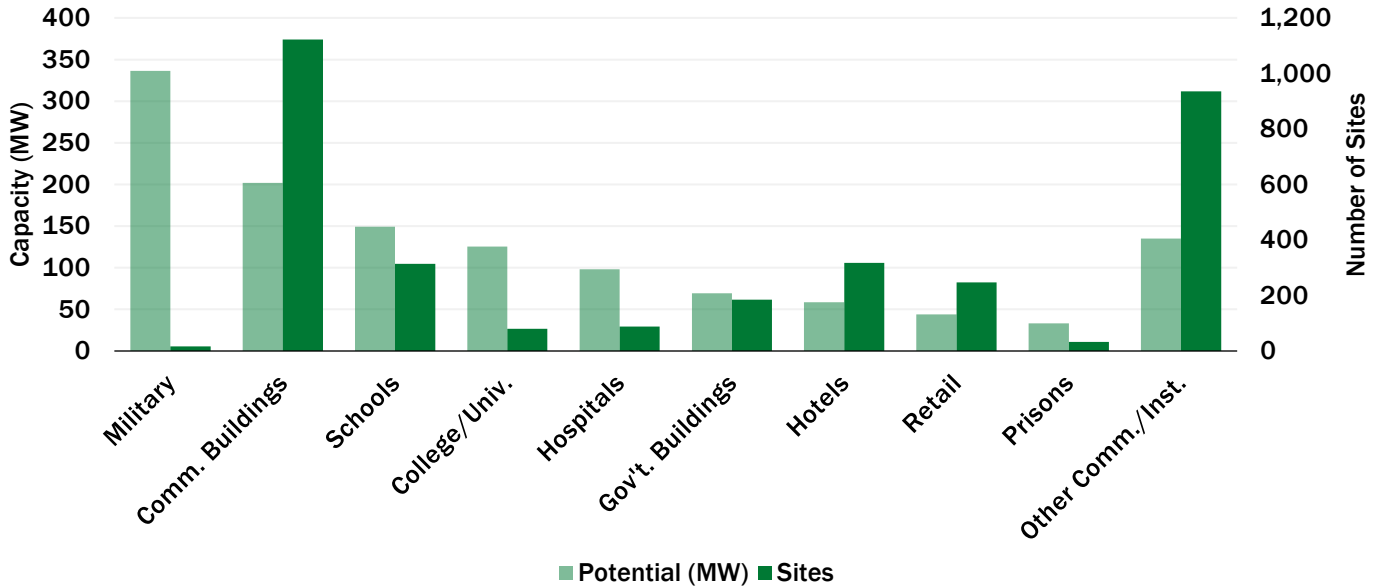
Sector	Potential Sites	Potential MW
Industrial	934	1,812
Commercial/Institutional	3,339	1,251
Total	4,273	3,063

South Carolina Technical Potential (MW) for Industrial CHP Applications



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

South Carolina Technical Potential (MW) for Commercial/Institutional CHP Applications



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

Department of Energy CHP Accelerators

Packaged CHP Accelerator

Standardized packaged CHP systems can reduce risk for both CHP users and suppliers by reducing design errors, limiting uncertainty about performance, shortening project development time, and reducing overall costs. Accelerator partners will validate the installation, performance, and economic and resiliency benefits of packaged CHP systems, evaluate the integration of new technologies and packaged CHP, and identify R&D challenges. For more information, visit <https://betterbuildingssolutioncenter.energy.gov/accelerators/packaged-chp>

CHP for Resiliency Accelerator

The U.S. DOE collaborated with cities, states, utilities, and other stakeholders who are actively pursuing CHP as a consideration in resiliency planning for critical infrastructure in their jurisdictions. This included defining resiliency, identifying critical infrastructure, and assessing CHP opportunities. This process was documented in the DG for Resilience Planning Guide and the CHP for Resilience Screening Tool. For more information, visit <https://betterbuildingssolutioncenter.energy.gov/accelerators/combined-heat-and-power-resiliency>

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

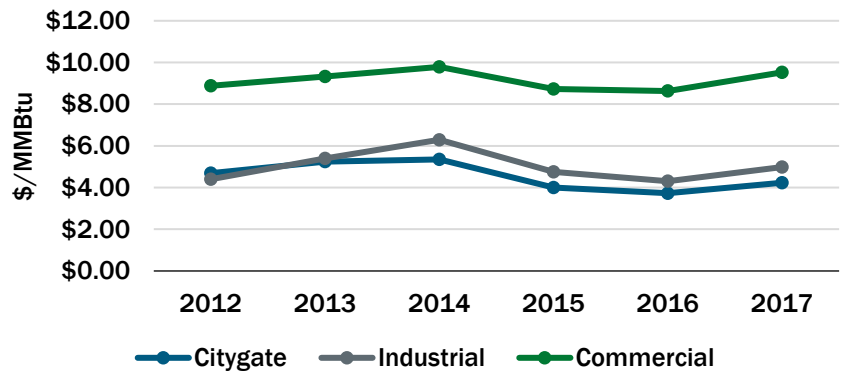
The EIA industrial natural gas price is a full tariff rate, and most large consumers are purchasing gas commodities from marketers at a lower rate.

South Carolina Average Gas Prices (\$/MMBtu) - 2017

Sector	SC Price	U.S. Price
Citygate*	4.23	4.26
Industrial	4.98	4.20
Commercial	9.53	8.08

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

South Carolina Average Natural Gas Prices

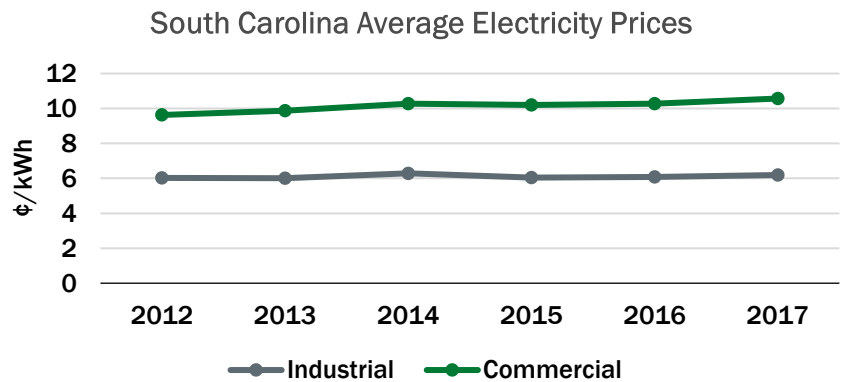


South Carolina Electricity Prices

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

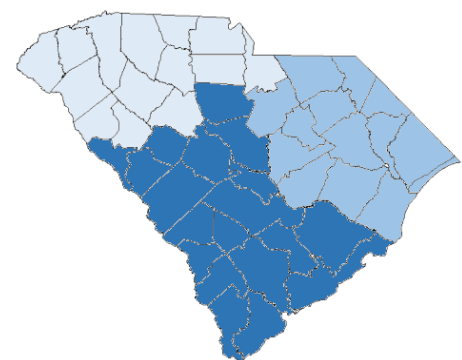
South Carolina Average Electricity Prices (¢/kWh) - 2017

Sector	SC Price	U.S. Price
Industrial	6.19	6.88
Commercial	10.57	10.66



South Carolina Average Delivered Electricity Prices by Utility

Utility	Industrial Price (¢/kWh)	Commercial Price (¢/kWh)	Average Price (¢/kWh)
South Carolina Electric & Gas	7.47	11.76	9.61
Santee Cooper	5.32	9.85	7.58
Duke Energy Progress	6.05	8.15	7.10
Duke Energy Carolinas	5.92	7.71	6.81



- Duke Energy Carolinas
- Duke Energy Progress / Santee Cooper
- South Carolina Electric & Gas