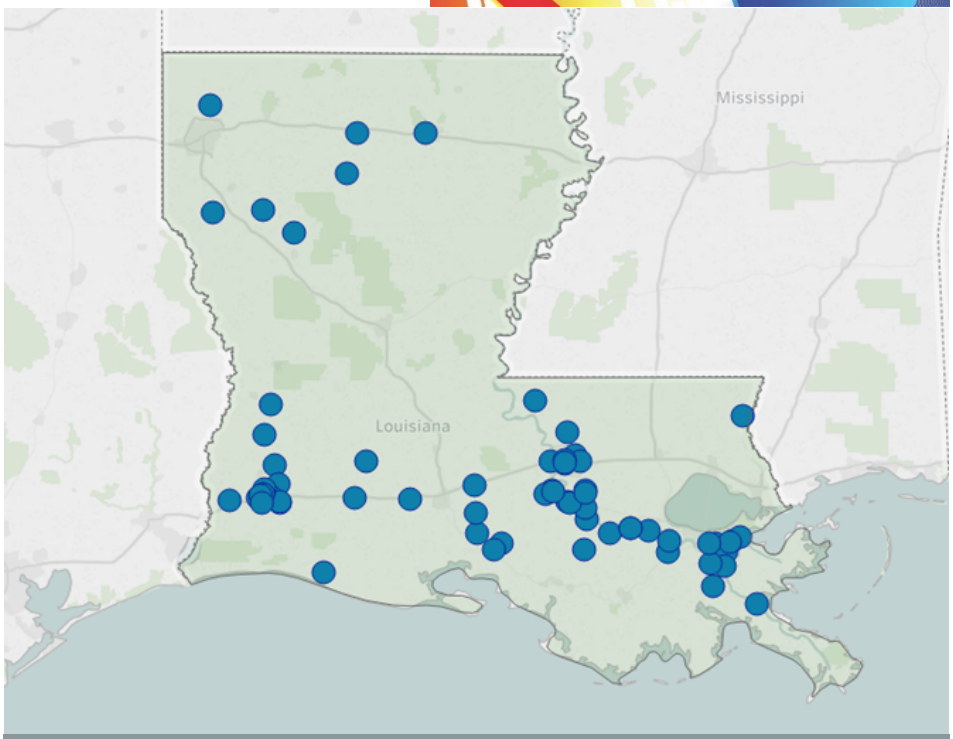
U.S. DEPARTMENT OF ENERGY

Office of ENERGY EFFICIENCY & RENEWABLE ENERGY

The State of CHP: Louisiana



Map of current CHP installations in Louisiana. *Illustration from ICF.*

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 Louisiana, with data on current installations, technical potential, and economics for CHP.

Louisiana: 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 Louisiana, and can be accessed by visiting https://doe.icfwebservices.com/chp.

CHP Project Profiles

The Southcentral CHP TAP has compiled information on certain illustrative CHP projects in Louisiana. You can access these by visiting the Department of Energy's CHP Project Profiles Database at https://betterbuildingssolutioncenter.energy.gov/chp/chp-project-profiles-database.

Southcentral CHP Technical Assistance Partnership

For assistance with questions about specific CHP opportunities in Louisiana, please consult with the Southcentral CHP TAP by visiting scchptap.org or contacting the CHP TAP director.

Louisiana Existing CHP

Sector	Sites	Capacity (MW)
Industrial	59	6,813
Commercial/Institutional	6	45
Other	1	2
Total	66	6,859

Southcentral CHP TAP Director

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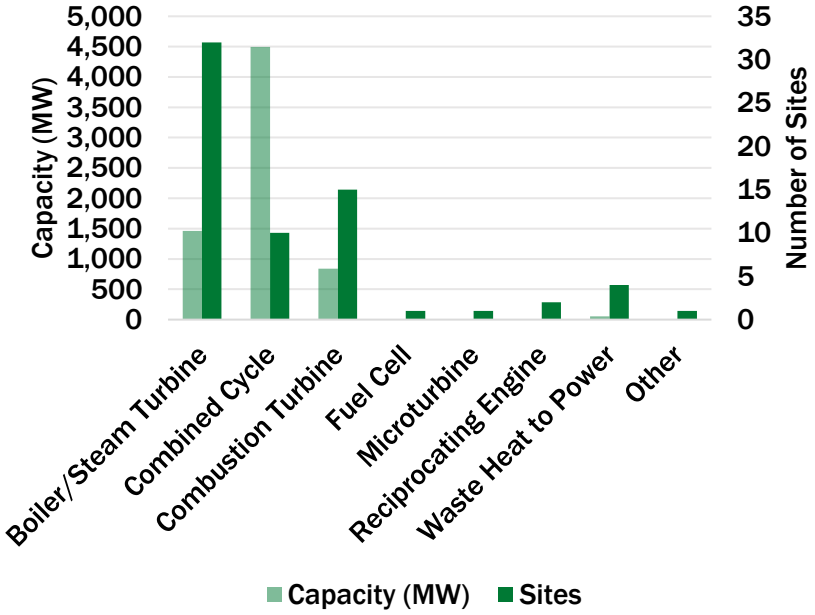
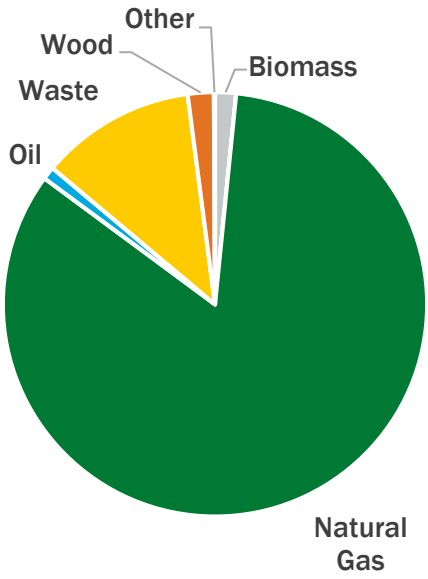
SOUTHCENTRAL CHP Technical Assistance Partnerships

DOE CHP Installation Database (U.S. installations as of Dec. 31, 2017)

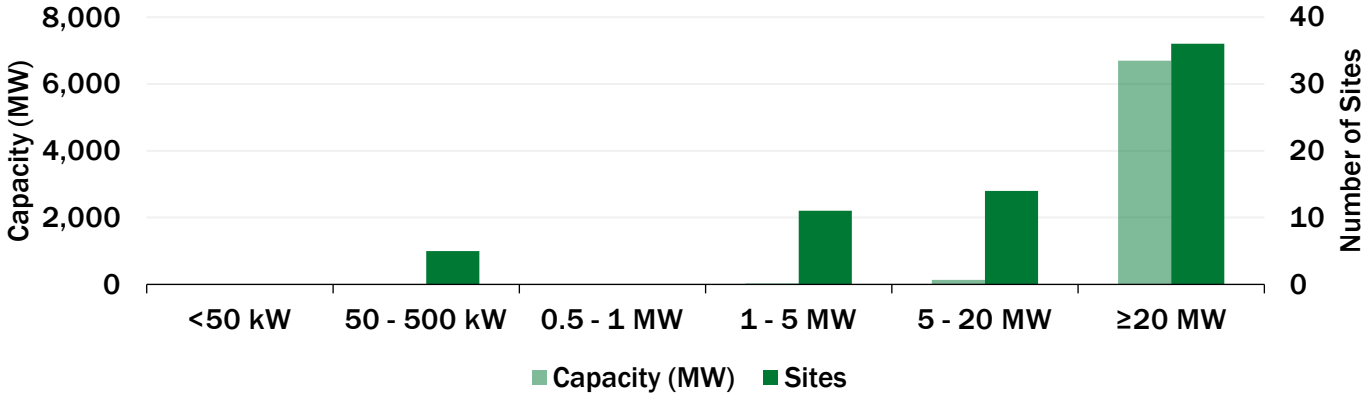
Louisiana CHP by Technology



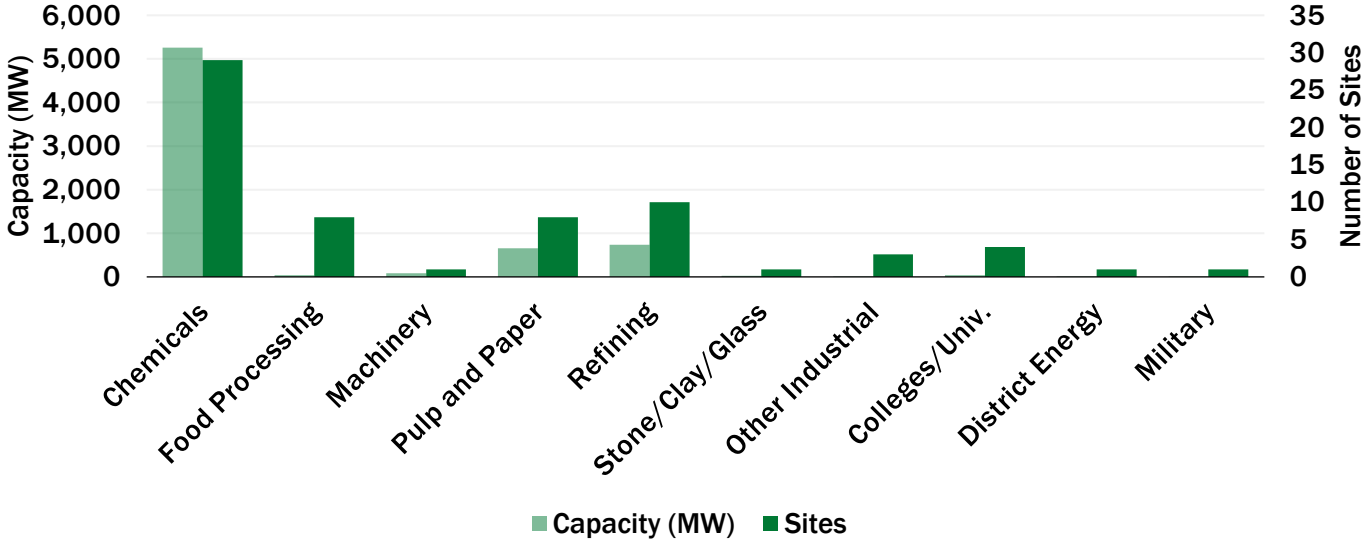
Louisiana CHP Capacity (MW) by Fuel



Louisiana CHP by Size Range



Louisiana CHP by Application

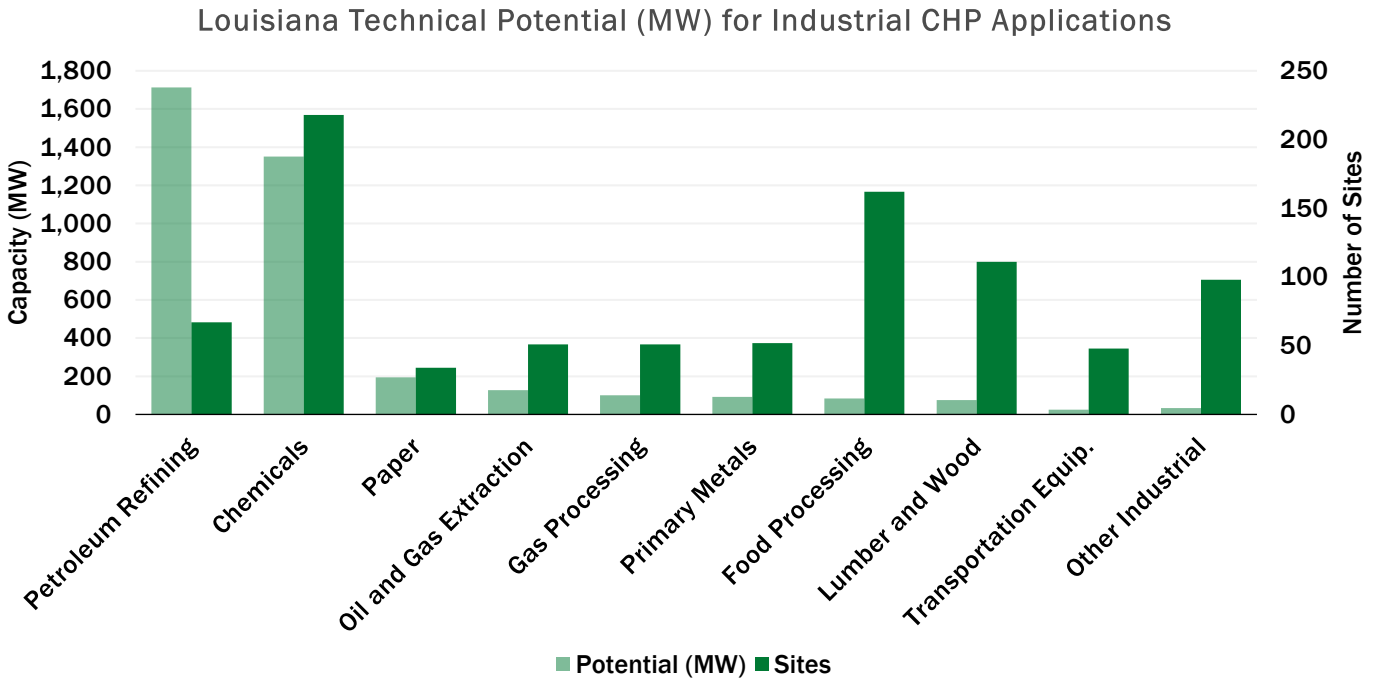


Louisiana: Technical Potential for New CHP Installations

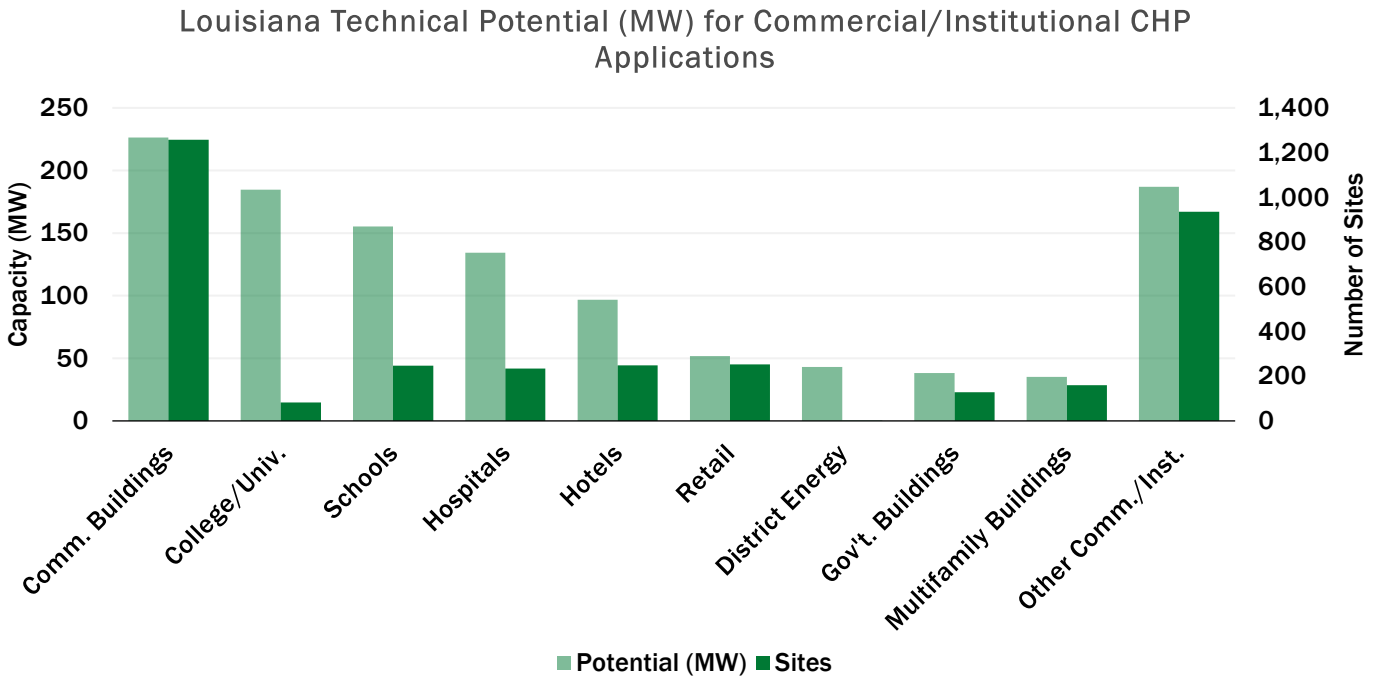
The "Combined Heat and Power (CHP) Technical Potential in the United States" market analysis report provides data on the technical potential in industrial facilities and commercial buildings for "topping cycle" CHP, waste heat to power (WHP) CHP, and district energy CHP in the U.S. Read the report **here**.

Louisiana CHP Technical Potential

Sector	Potential Sites	Potential MW
Industrial	892	3,793
Commercial/Institutional	3,545	1,152
Total	4,437	4,946



	50-500 kW		0.5 - 1 MW		1 - 5 MW		5 - 20 MW		>20 MW		Total	
Application	Sites	MW	Sites	MW	Sites	MW	Sites	MW	Sites	MW	Total Sites	Total MW
Petroleum Refining	1	0	11	8	25	78	10	90	20	1,538	67	1,713
Chemicals	84	17	25	17	60	142	33	351	16	824	218	1,351
Paper	18	5	5	3	8	21	1	19	2	147	34	194
Oil and Gas Extraction	15	4	9	6	21	63	6	55	0	0	51	128
Gas Processing	20	5	5	3	21	52	5	39	0	0	51	100
Other Industrial	359	63	33	23	70	131	9	90	0	0	471	307
Total	497	94	88	61	205	486	64	644	38	2,509	892	3,793



	50-500 kW		0.5 - 1 MW		1 - 5 MW		5 - 20 MW		>20 MW		Total	
Application	Sites	MW	Sites	MW	Sites	MW	Sites	MW	Sites	MW	Total Sites	Total MW
Commercial Buildings	838	42	335	134	84	50	0	0	0	0	1,257	226
College/Univ.	43	7	6	5	20	48	13	125	0	0	82	185
Schools	102	47	120	79	25	29	0	0	0	0	247	155
Hospitals	171	33	24	17	36	66	3	19	0	0	234	134
Hotels	224	28	10	6	7	11	7	52	0	0	248	97
Other Comm./Inst.	1,353	166	81	47	38	59	3	19	2	64	1,477	355
Total	2,731	323	576	288	210	263	26	215	2	64	3,545	1,152

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

Louisiana: 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.

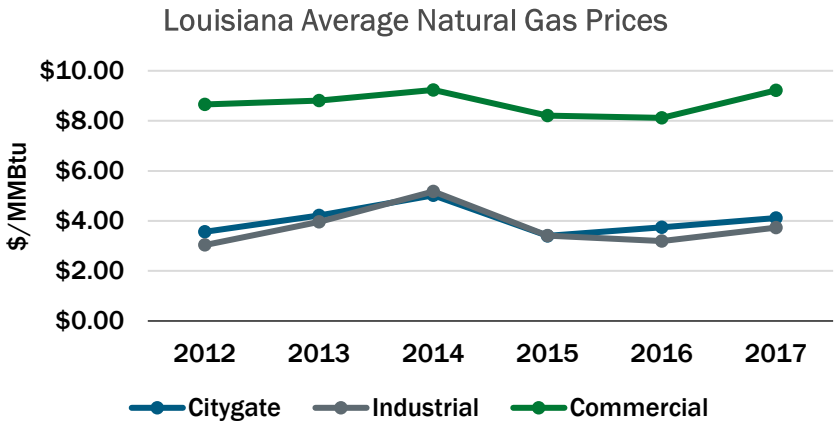
Louisiana Natural Gas Prices

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.

Louisiana Average Gas Prices ($/MMBtu) - 2017

Sector	LA Price	U.S. Price
Citygate*	4.12	4.26
Industrial	3.73	4.20
Commercial	9.21	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.

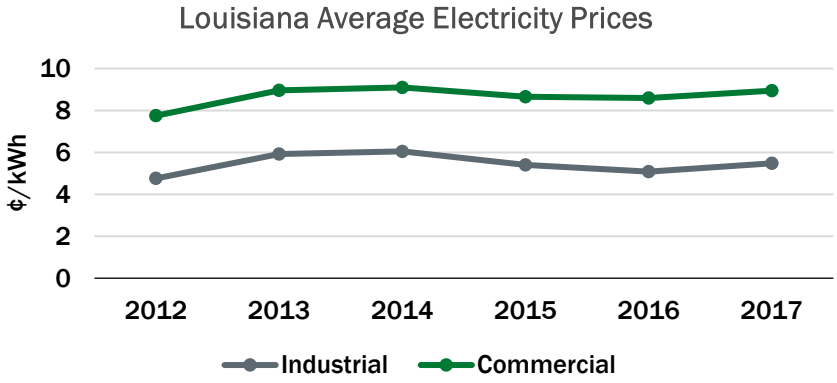


Louisiana Electricity Prices

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

Louisiana Average Electricity Prices (¢/kWh) - 2017

Sector	LA Price	U.S. Price
Industrial	5.48	6.88
Commercial	8.95	10.66



Louisiana Average Delivered Electricity Prices by Utility

Utility	Industrial Price (¢/kWh)	Commercial Price (¢/kWh)	Average Price (¢/kWh)
Cleco Power	7.59	10.76	9.17
Entergy New Orleans	8.17	9.82	9.00
SWEPCO	6.19	7.64	6.91
Entergy Louisiana	5.13	8.38	6.76