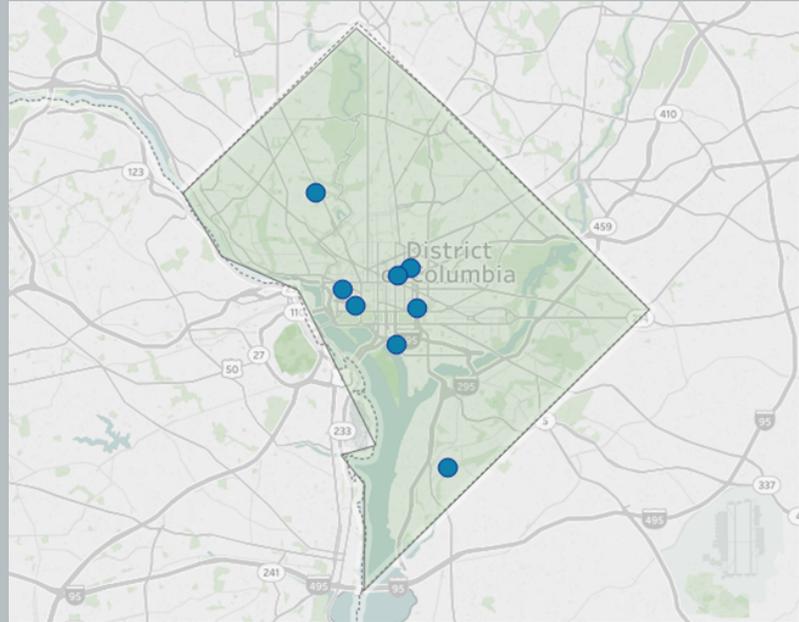




Combined heat and power (CHP) – also referred to as cogeneration – is an efficient and clean approach to generating on-site electric power and useful thermal energy from a single fuel source. The information in this document provides a general overview of the state of CHP in the District of Columbia, with data on current installations, technical potential, and economics for CHP.



Map of current CHP installations in Washington, DC. Illustration from ICF.

District of Columbia: 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 Washington, DC, and can be accessed by visiting energy.gov/chp-installs.

CHP Project Profiles

The Mid-Atlantic CHP TAP has compiled information on certain illustrative CHP projects in Washington, DC. You can access these by visiting the Department of Energy’s CHP Project Profiles Database at energy.gov/chp-projects.

Mid-Atlantic CHP Technology Assistance Partnership

For assistance with questions about specific CHP opportunities in Washington, DC, please consult with the Mid-Atlantic CHP TAP by visiting machptap.org or contacting the TAP director.

D.C. Existing CHP

Sector	Sites	Capacity (MW)
Industrial	0	0.0
Commercial/Institutional	8	24
Other	0	0.0
Total	8	24

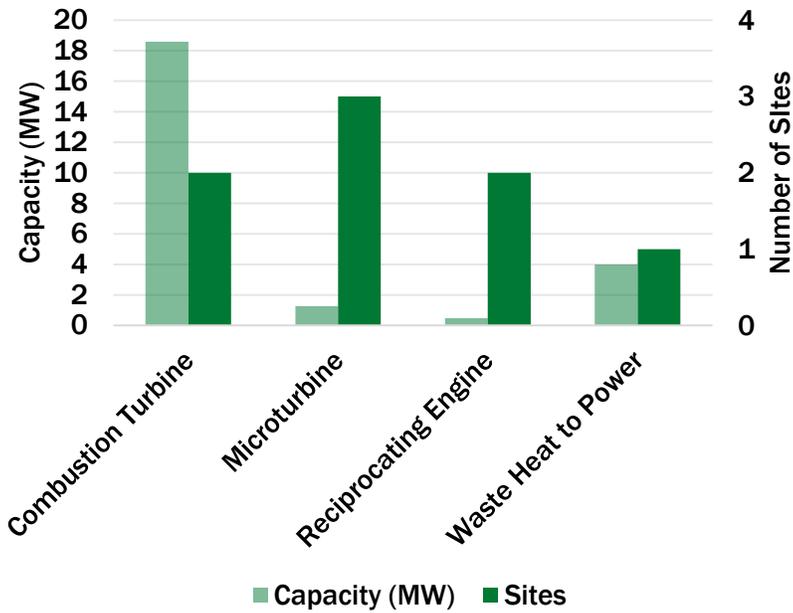
Mid-Atlantic CHP TAP Director

Jim Freihaut, Ph.D.

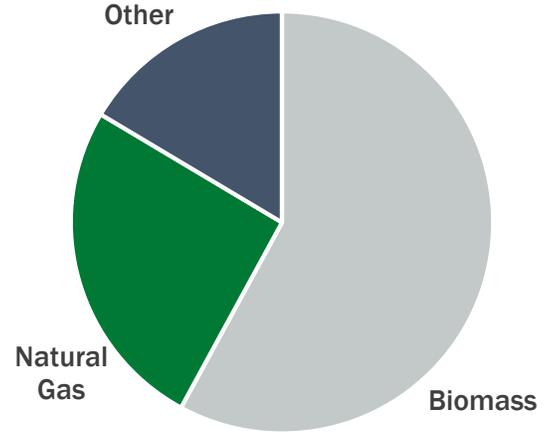
- Pennsylvania State University
- jdf11@psu.edu
- 814-863-0083



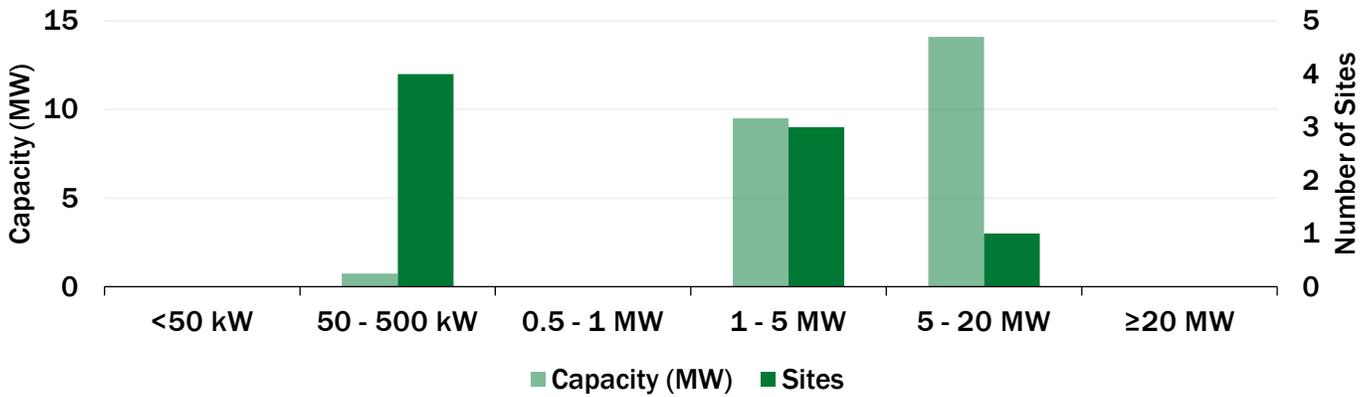
D.C. CHP by Technology



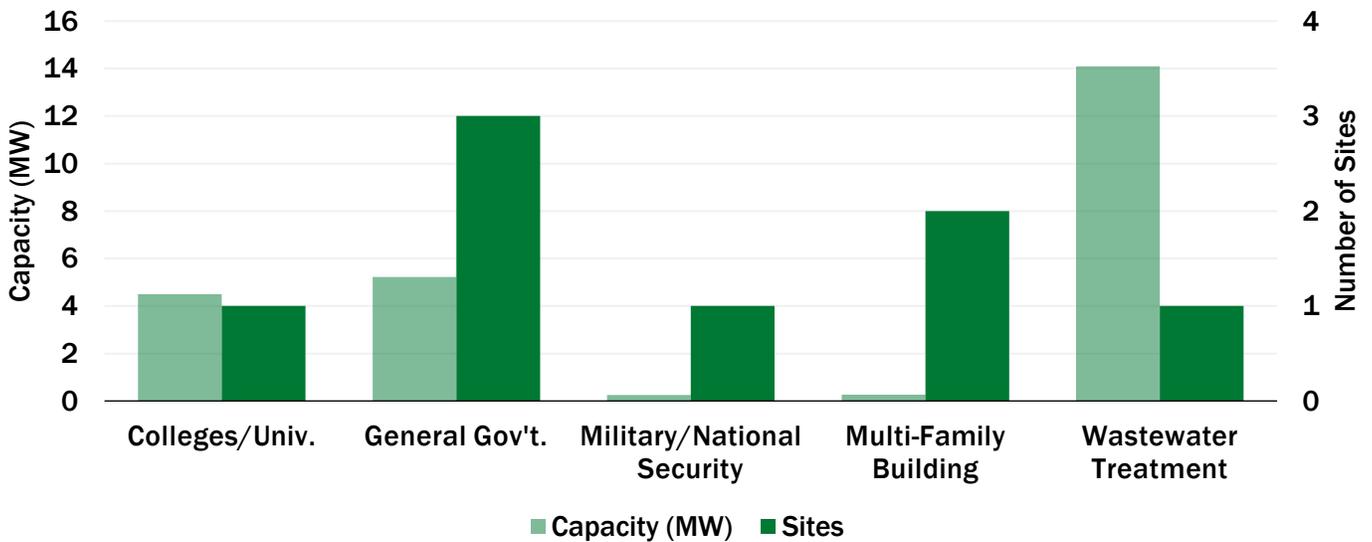
D.C. CHP Capacity (MW) by Fuel



D.C. CHP by Size Range



D.C. CHP by Application



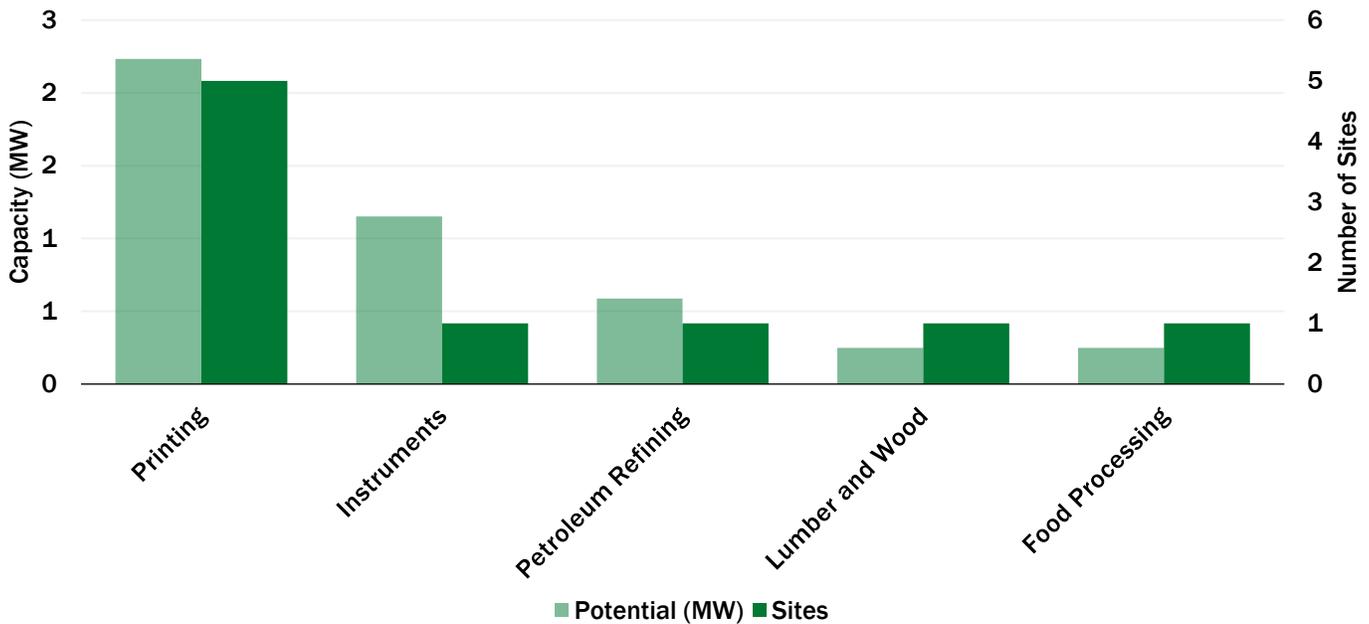
District of Columbia: Technical Potential for New CHP Installations

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. This report can be accessed at energy.gov/chp-potential.

D.C. CHP Technical Potential

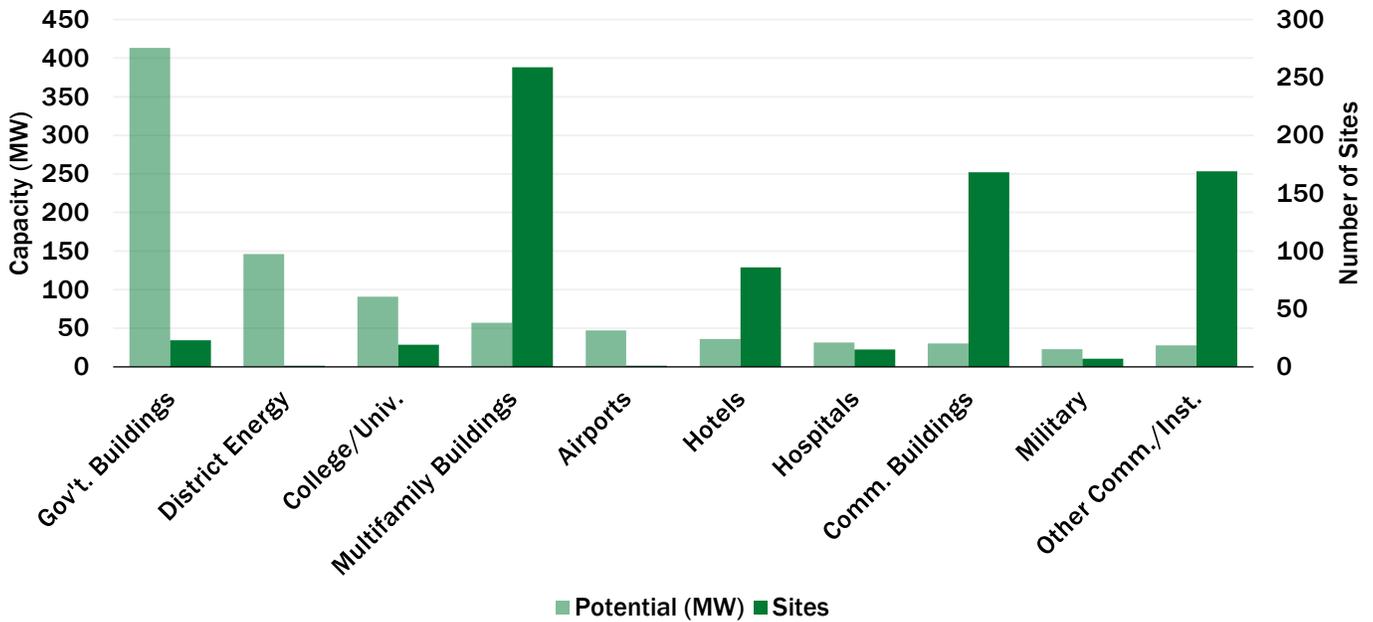
Sector	Potential Sites	Potential MW
Industrial	9	4
Commercial/Institutional	748	903
Total	757	907

D.C. 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
Printing	4	0.4	0	0	1	2	0	0	0	0	5	2
Petroleum Refining	0	0	1	1	0	0	0	0	0	0	1	1
Instruments	0	0	0	0	1	1	0	0	0	0	1	1
Food Processing	1	0.2	0	0	0	0	0	0	0	0	1	0.2
Lumber and Wood	1	0.2	0	0	0	0	0	0	0	0	1	0.2
Other Industrial	0	0	0	0	0	0	0	0	0	0	0	0
Total	6	1	1	1	2	3	0	0	0	0	9	4

D.C. 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
Government Buildings	15	2	1	1	3	6	3	20	1	385	23	413
College/Univ.	8	1	1	1	4	9	5	49	1	31	19	91
Multifamily Buildings	182	14	66	33	10	10	0	0	0	0	259	57
Airports	0	0	0	0	0	0	0	0	1	47	1	47
Hotels	58	9	14	9	14	18	0	0	0	0	86	36
Other Comm./Inst.	334	33	67	32	41	65	3	18	0	0	445	149
Total	539	50	135	66	58	91	11	87	4	609	748	903

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://betterbuildingsinitiative.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://betterbuildingsinitiative.energy.gov/accelerators/combined-heat-and-power-resiliency>

District of Columbia: 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.

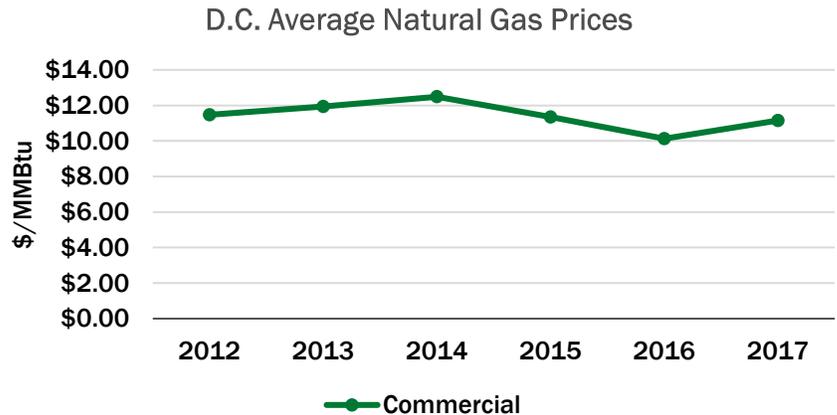
D.C. Natural Gas Prices

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.

D.C. Average Gas Prices (\$/MMBtu) - 2017

Sector	DC Price	U.S. Price
Citygate*	-	4.26
Industrial	-	4.20
Commercial	11.14	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.

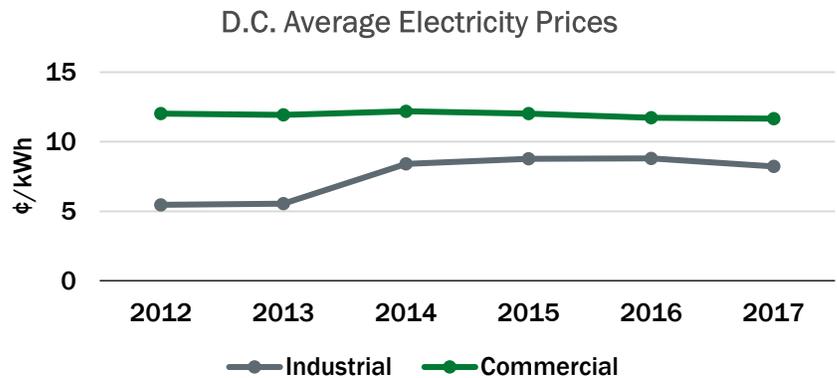


D.C. Electricity Prices

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

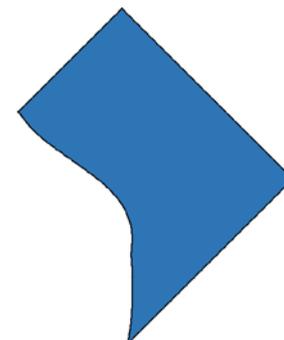
D.C. Average Electricity Prices (¢/kWh) - 2017

Sector	DC Price	U.S. Price
Industrial	8.23	6.88
Commercial	11.66	10.66



Washington, D.C. Average Delivered Electricity Prices by Utility

Utility	Industrial Price (¢/kWh)	Commercial Price (¢/kWh)	Average Price (¢/kWh)
Pepco	8.27	12.04	10.16



■ Pepco