

The State of CHP: NH



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

Installed CHP

CHP Technical Potential

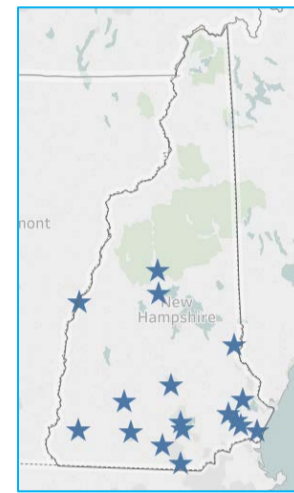
CHP Economics

CHP Partners

New Hampshire Installed Base of CHP

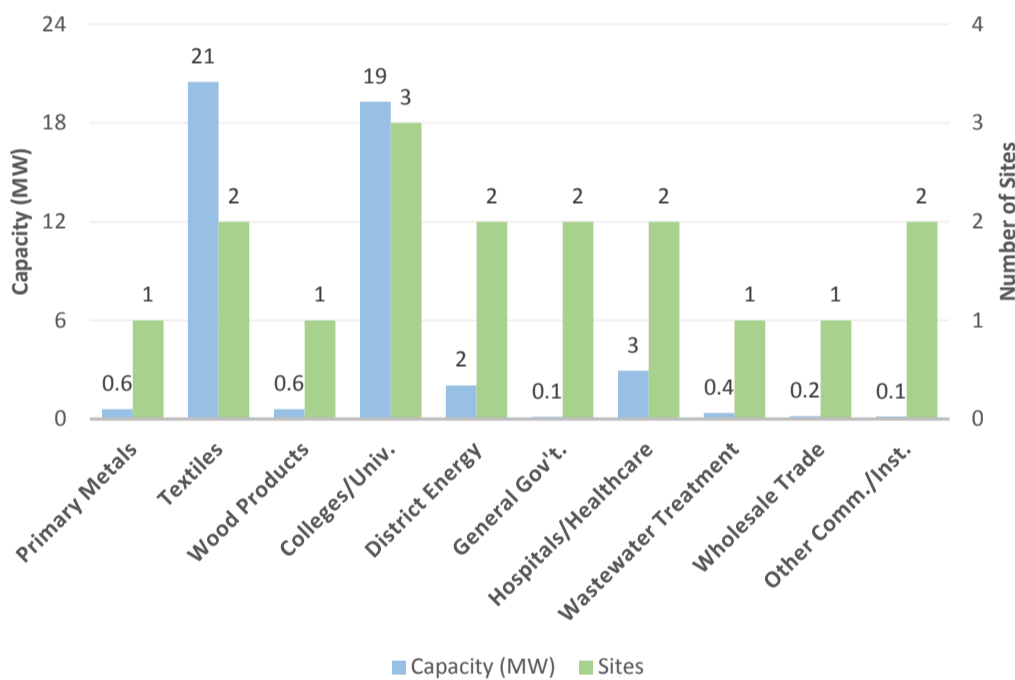
[U.S. DOE Combined Heat and Power Installation Database](#)

Sector	Installations	Capacity (MW)
Industrial	4	22
Commercial/Institutional	13	25
Other	0	0
Total	17	47



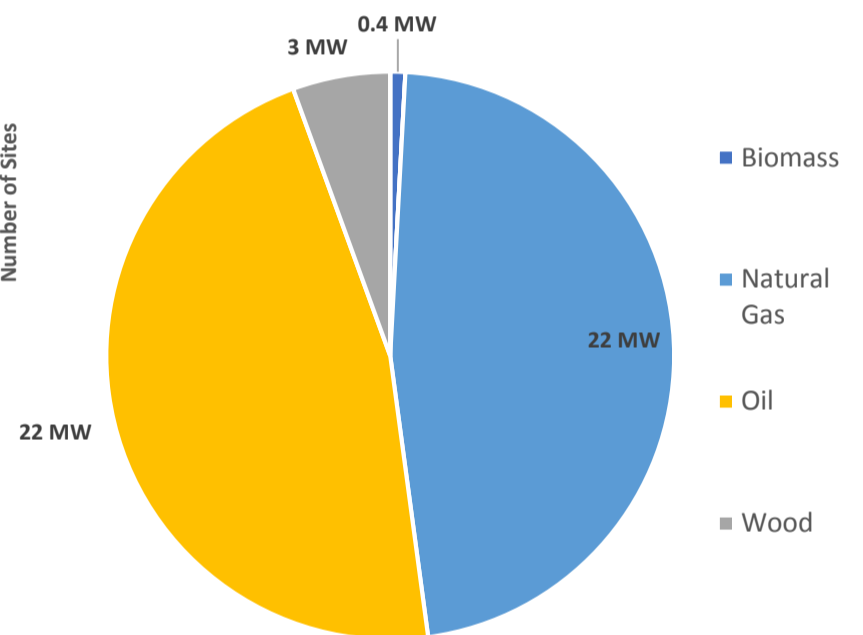
The Northeast CHP Technical Assistance Partnership has compiled information on certain illustrative CHP projects in New Hampshire. You can access these by visiting the Department of Energy's [CHP Project Profiles Database](#).

New Hampshire CHP by Application



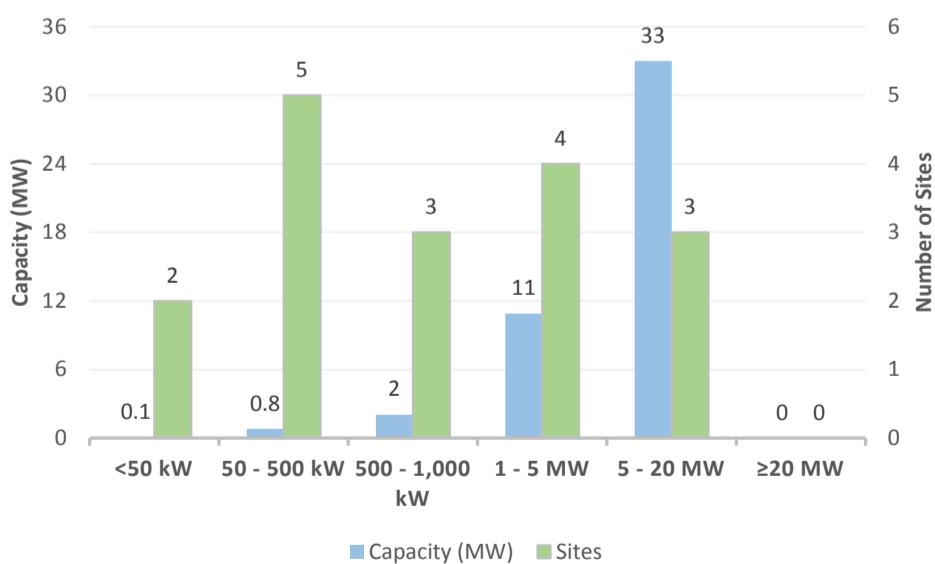
Source: DOE CHP Installation Database (U.S. installations as of Dec. 31, 2016)

New Hampshire CHP Capacity (MW) by Fuel Type



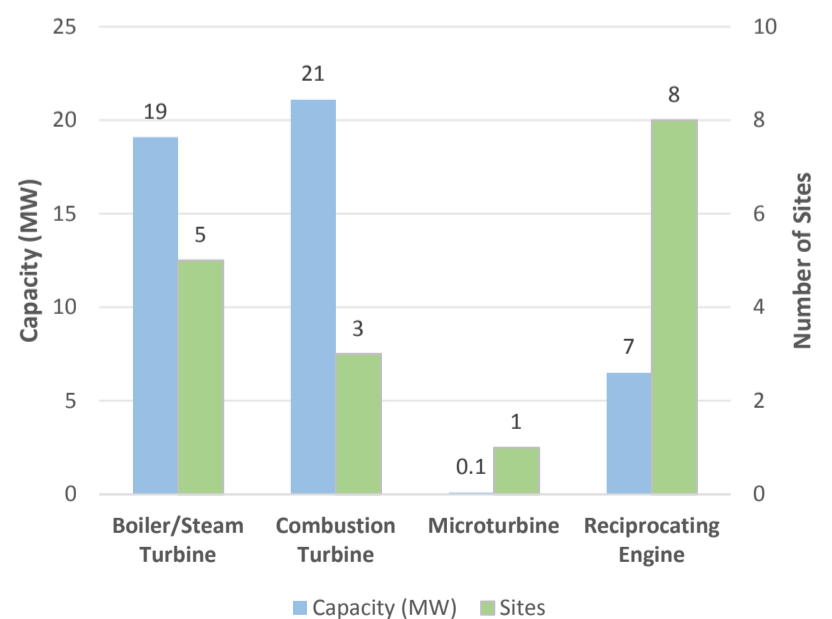
Source: DOE CHP Installation Database (U.S. installations as of Dec. 31, 2016)

New Hampshire CHP by Size Range



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

New Hampshire 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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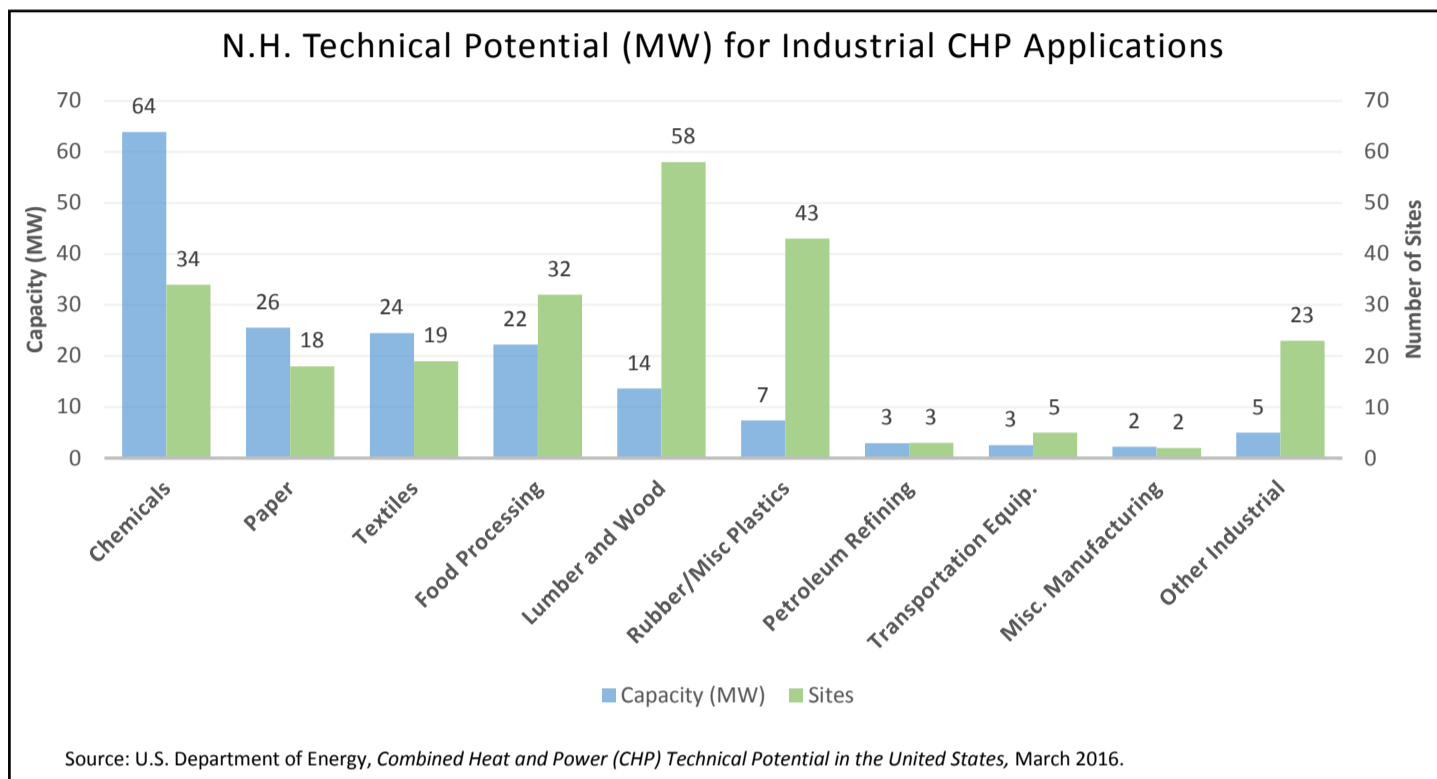
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New Hampshire Technical Potential for New CHP Installations

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

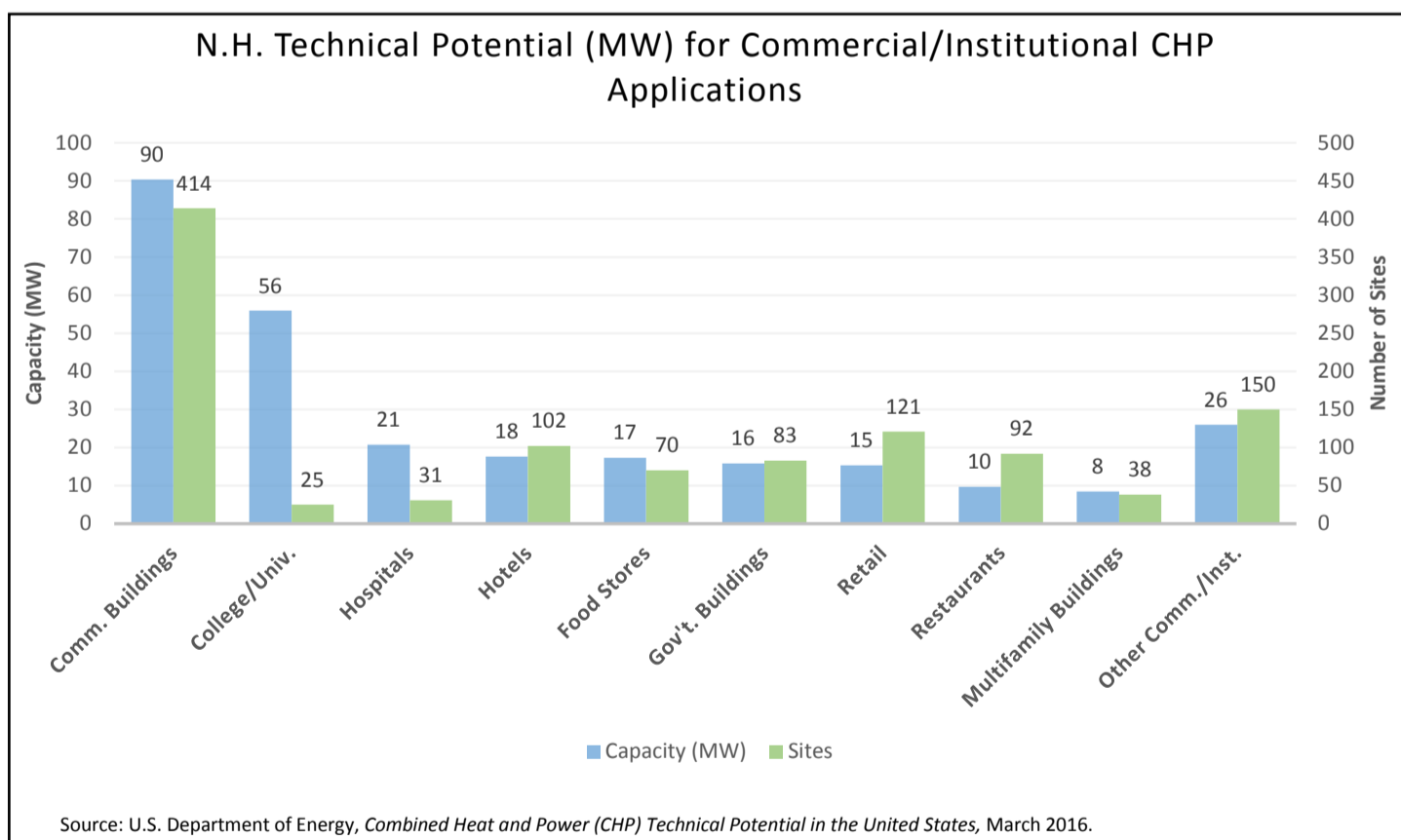
Sector	Potential Sites	Potential Capacity (MW)
Industrial	237	170
Commercial/Institutional	1,126	277
Total	1,363	447



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	22	3	7	5	3	7	1	8	1	40	34	64
Paper	9	2	1	1	7	17	1	5	0	0	18	26
Textiles	13	3	1	1	3	7	2	13	0	0	19	24
Food Processing	24	5	5	4	2	5	1	8	0	0	32	22
Lumber and Wood	51	8	6	4	1	1	0	0	0	0	58	14
Other Industrial	64	9	7	4	5	7	0	0	0	0	76	21
Total	183	31	27	20	21	45	5	35	1	40	237	170

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
Commercial Buildings	243	12	122	49	49	29	0	0	0	0	414	90
College/Univ.	10	2	6	4	7	12	1	12	1	26	25	56
Hospitals	15	3	8	5	8	12	0	0	0	0	31	21
Hotels	96	12	5	3	1	3	0	0	0	0	102	18
Food Stores	69	17	1	1	0	0	0	0	0	0	70	17
Other Comm./Inst.	453	51	26	16	6	8	0	0	0	0	484	75
Total	886	97	168	77	71	64	1	12	1	26	1,126	277

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

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New Hampshire 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.

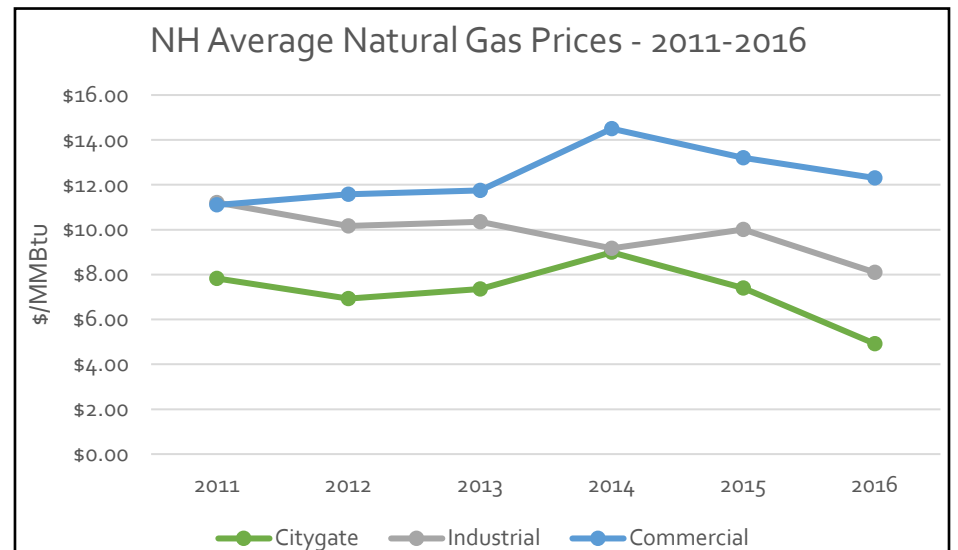
New Hampshire Natural Gas Prices

New Hampshire Average Gas Prices - 2016

Sector	NH Price (\$/MMBtu)	U.S. Price (\$/MMBtu)
Citygate*	4.92	3.75
Industrial	8.10	3.39
Commercial	12.31	7.22

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



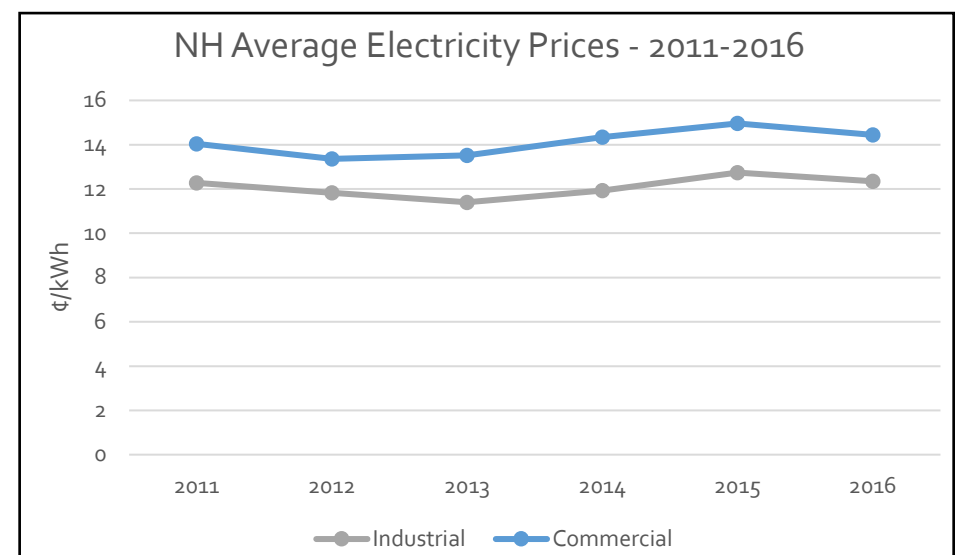
New Hampshire Electricity Prices

New Hampshire Average Electricity Prices - 2016

Sector	NH Price (¢/kWh)	U.S. Price (¢/kWh)
Industrial	12.35	6.75
Commercial	14.44	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.



New Hampshire Average Delivered Electricity Prices by Utility

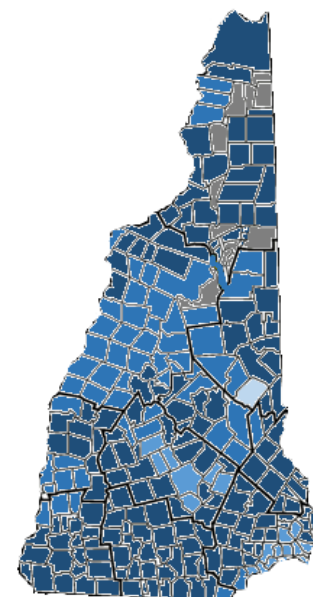
Utility	Industrial Price (¢/kWh)	Commercial Price (¢/kWh)	Average Price* (¢/kWh)
Public Service Co of NH	24.55	18.38	21.47
Granite State Electric Corp	16.15	17.13	16.64
New Hampshire Elec Coop	14.32	18.22	16.27
Unitil Energy Systems	12.38	19.37	15.87
Town of Wolfeboro	12.17	13.52	12.84

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.

New Hampshire Electricity Prices – Heat Map



- Town of Wolfeboro
- Unitil Energy Systems
- Granite State Elec Corp / New Hampshire Elec Coop
- Public Service Co of NH
- No utility information

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CHP Technical
Potential

CHP Economics

CHP Partners

Department of Energy CHP Partnerships

Northeast CHP Technical Assistance Partnership



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

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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 New Hampshire.

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U.S. DEPARTMENT OF ENERGY
CHP Technical Assistance Partnerships