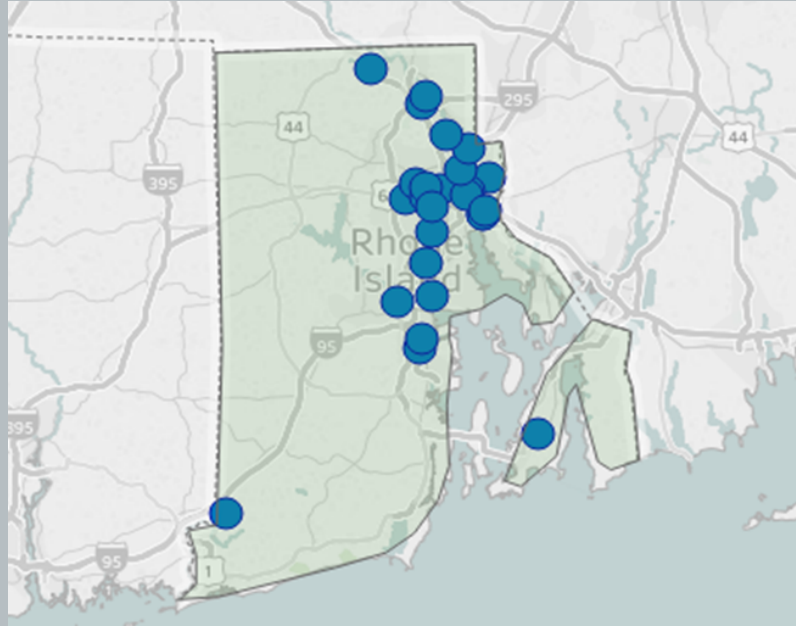




Combined heat and power (CHP) – also referred to as cogeneration – is an efficient and clean approach to generating on-site electric power and useful thermal energy from a single fuel source. The information in this document provides a general overview of the state of CHP in Rhode Island, with data on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



Map of current CHP installations in Rhode Island. Illustration from ICF.

Rhode Island: 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 Rhode Island, and can be accessed by visiting <https://doe.icfwebservices.com/chp>.

CHP Project Profiles

The New England CHP TAP has compiled information on certain illustrative CHP projects in Rhode Island. 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>.

New England CHP Technical Assistance Partnership

For assistance with questions about specific CHP opportunities in Rhode Island, please consult with the New England CHP TAP by visiting nechtap.org or contacting the CHP TAP director.

Rhode Island Existing CHP

Sector	Sites	Capacity (MW)
Industrial	5	91
Commercial/Institutional	23	43
Other	0	0
Total	28	134

New England CHP TAP Director

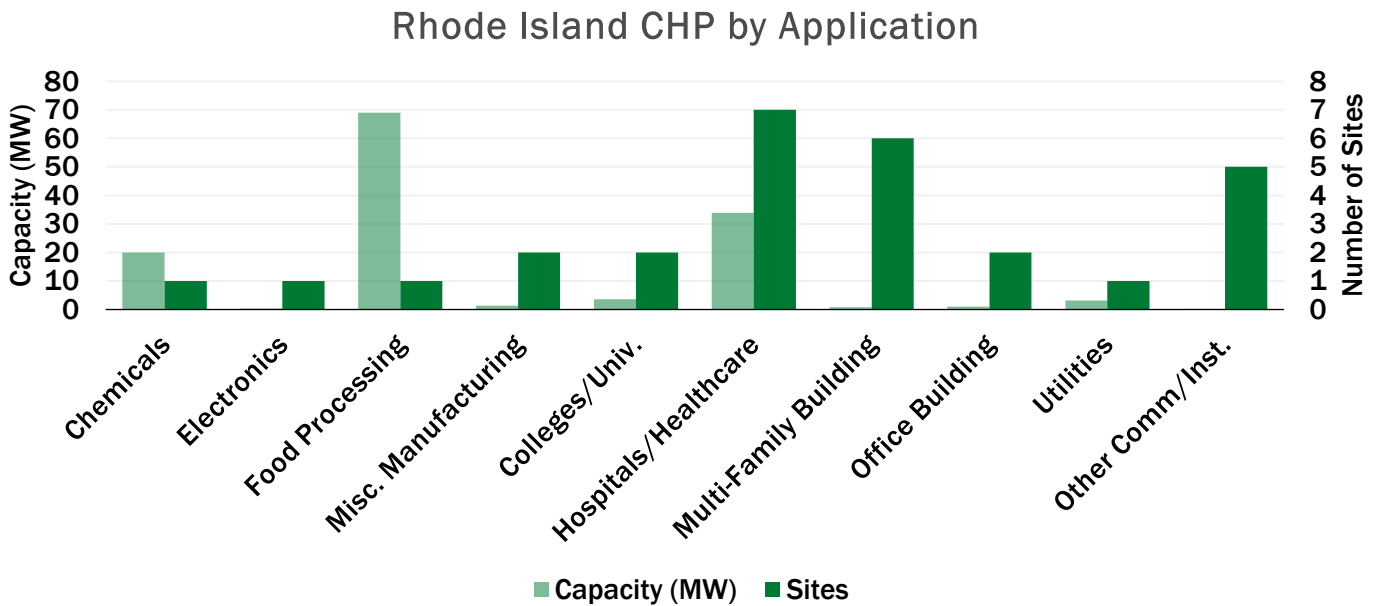
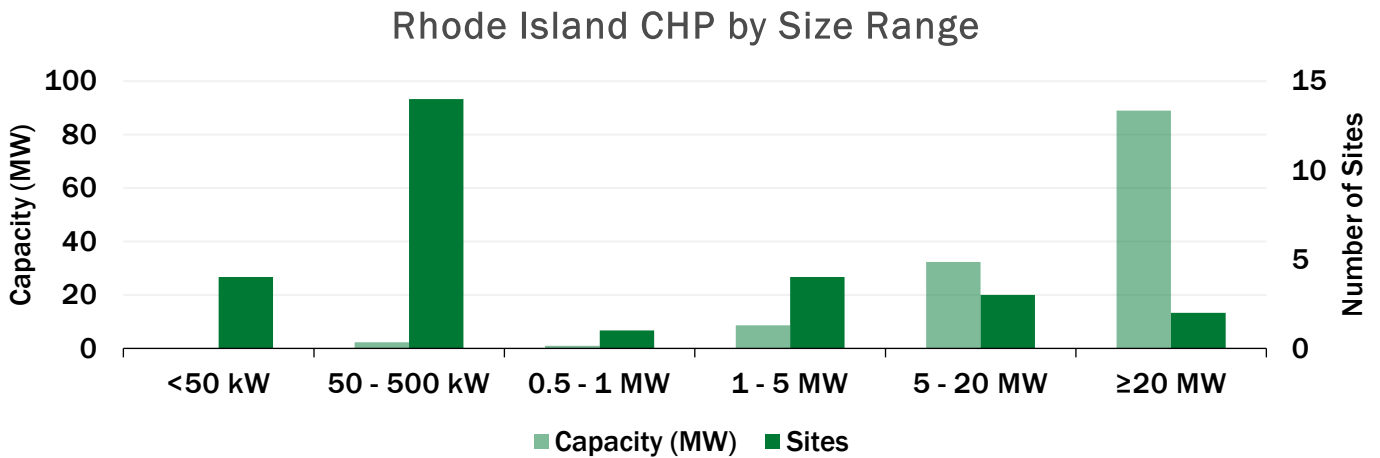
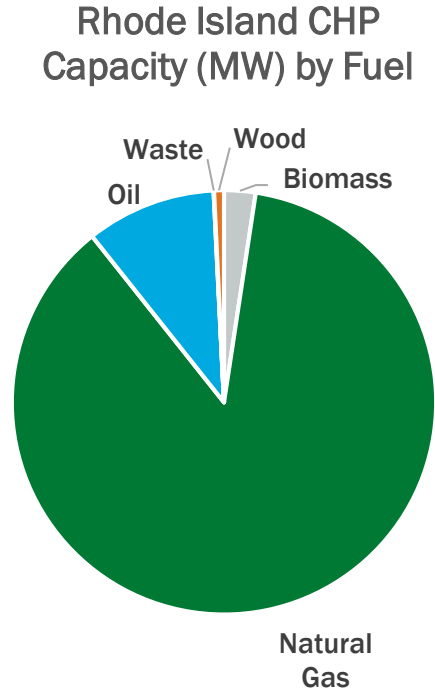
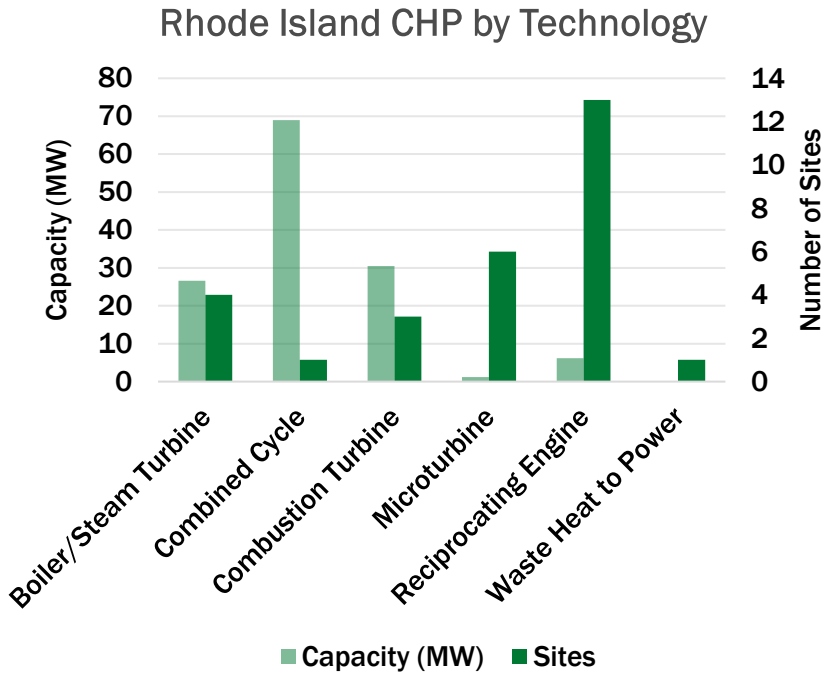
David Dvorak, Ph.D., P.E.

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- 207-581-2338

NEW ENGLAND



CHP
TECHNICAL ASSISTANCE
PARTNERSHIPS



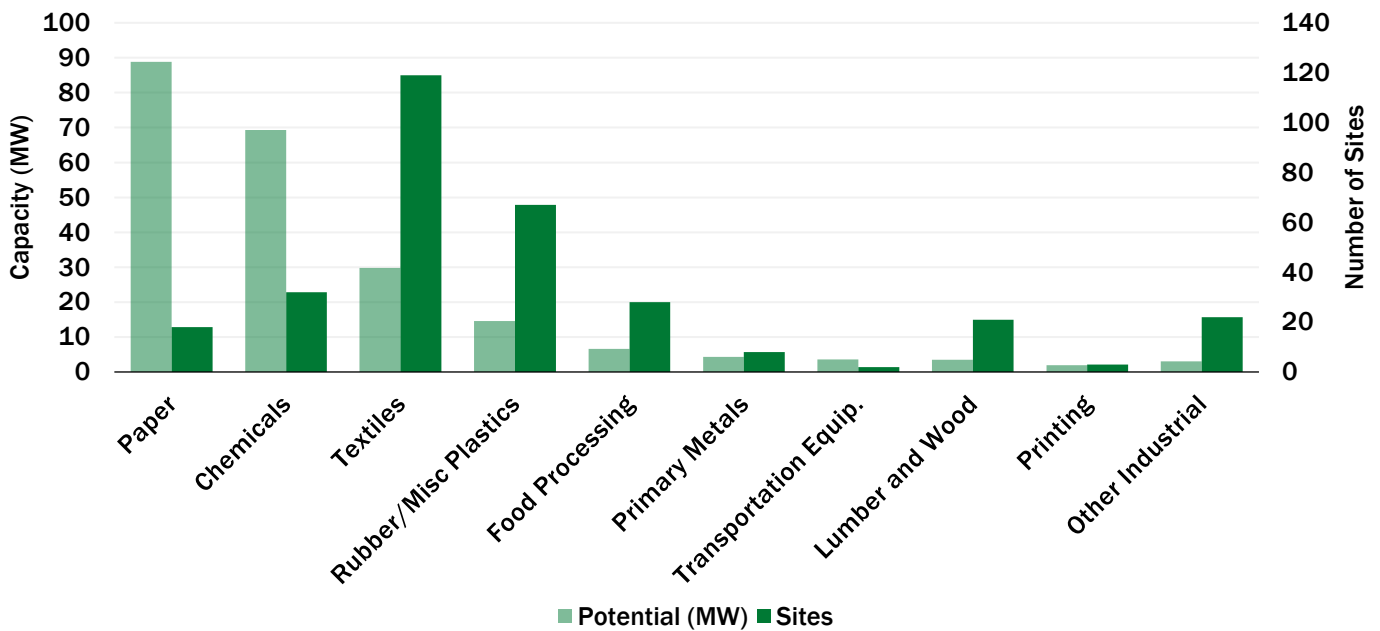
Rhode Island: Technical Potential for New CHP Installations

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](#).

Rhode Island CHP Technical Potential

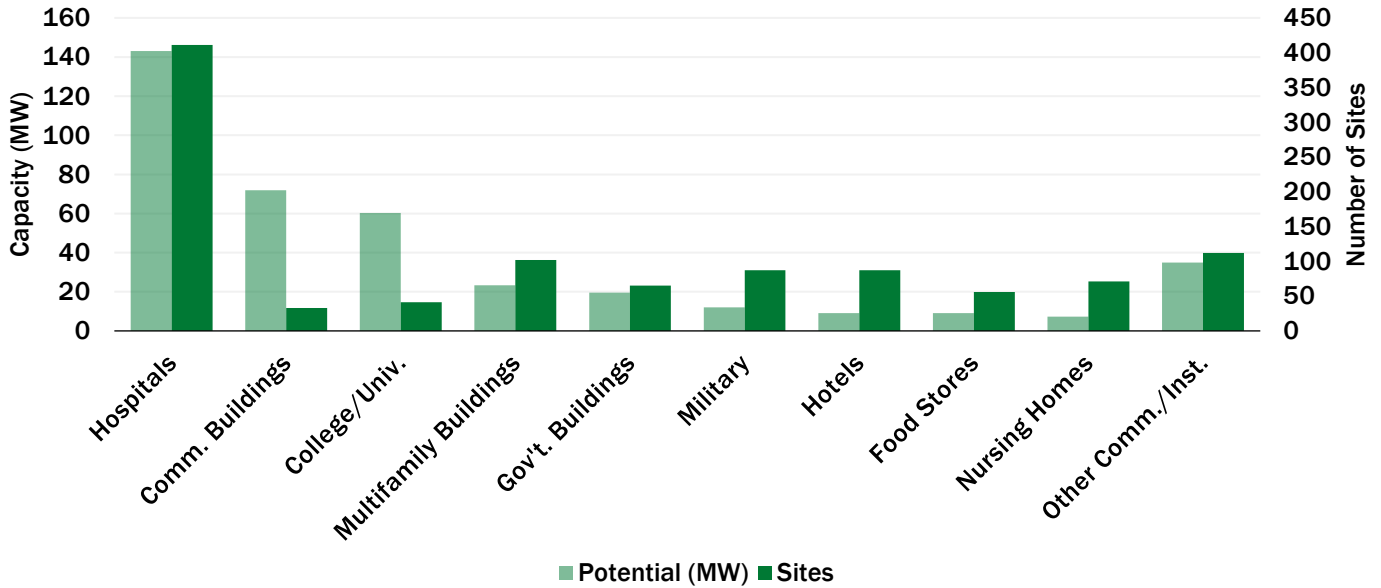
Sector	Potential Sites	Potential MW
Industrial	217	225
Commercial/Institutional	897	391
Total	1,114	616

Rhode Island 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
Paper	14	3	1	1	2	5	2	18	2	62	21	89
Chemicals	19	4	3	2	11	24	5	38	0	0	38	69
Textiles	24	6	8	6	6	12	1	7	0	0	39	30
Rubber/Misc Plastics	26	3	3	2	1	4	1	6	0	0	32	15
Food Processing	31	6	1	1	0	0	0	0	0	0	32	7
Other Industrial	50	7	2	1	4	8	0	0	0	0	56	16
Total	164	28	18	13	24	53	9	69	2	62	217	225

Rhode Island 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
Hospitals	4	2	4	3	7	13	0	0	1	125	16	143
Commercial Buildings	194	10	97	39	39	23	0	0	0	0	330	72
College/Univ.	9	1	1	1	5	19	4	40	0	0	19	60
Multifamily Buildings	75	6	27	14	4	4	0	0	0	0	106	23
Government Buildings	41	5	5	4	3	4	1	6	0	0	50	20
Other Comm./Inst.	361	48	9	6	5	12	1	7	0	0	376	73
Total	684	71	143	65	63	76	6	53	1	125	897	391

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

Rhode Island: 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.

Rhode Island Natural Gas Prices

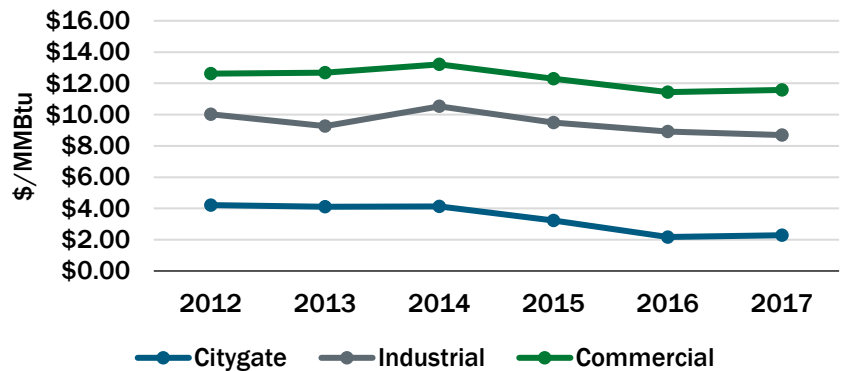
The EIA industrial natural gas price is a full tariff rate, and most large consumers are purchasing gas commodities from marketers at a lower rate.

Rhode Island Average Gas Prices (\$/MMBtu) - 2017

Sector	RI Price	U.S. Price
Citygate*	2.28	4.26
Industrial	8.69	4.20
Commercial	11.58	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.

Rhode Island Average Natural Gas Prices

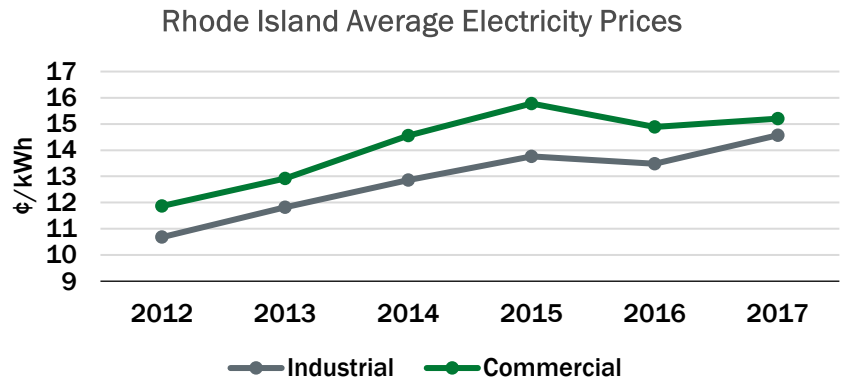


Rhode Island Electricity Prices

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

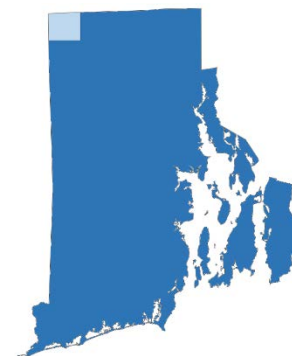
Rhode Island Average Electricity Prices (¢/kWh) - 2017

Sector	RI Price	U.S. Price
Industrial	14.57	6.88
Commercial	15.20	10.66



Rhode Island Average Delivered Electricity Prices by Utility

Utility	Industrial Price (¢/kWh)	Commercial Price (¢/kWh)	Average Price (¢/kWh)
National Grid	15.58	15.98	15.78
Pascoag Utility District	14.24	16.62	15.43



- Pascoag Utility District
- National Grid