

# The State of CHP: Illinois



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

Installed CHP

CHP Technical Potential

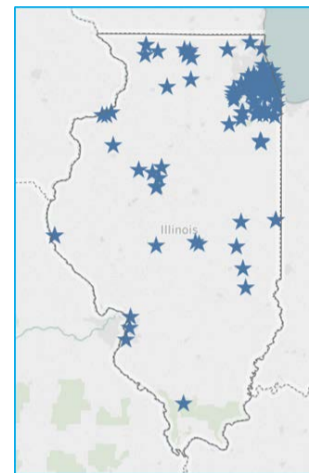
CHP Economics

CHP Partners

## Illinois Installed Base of CHP

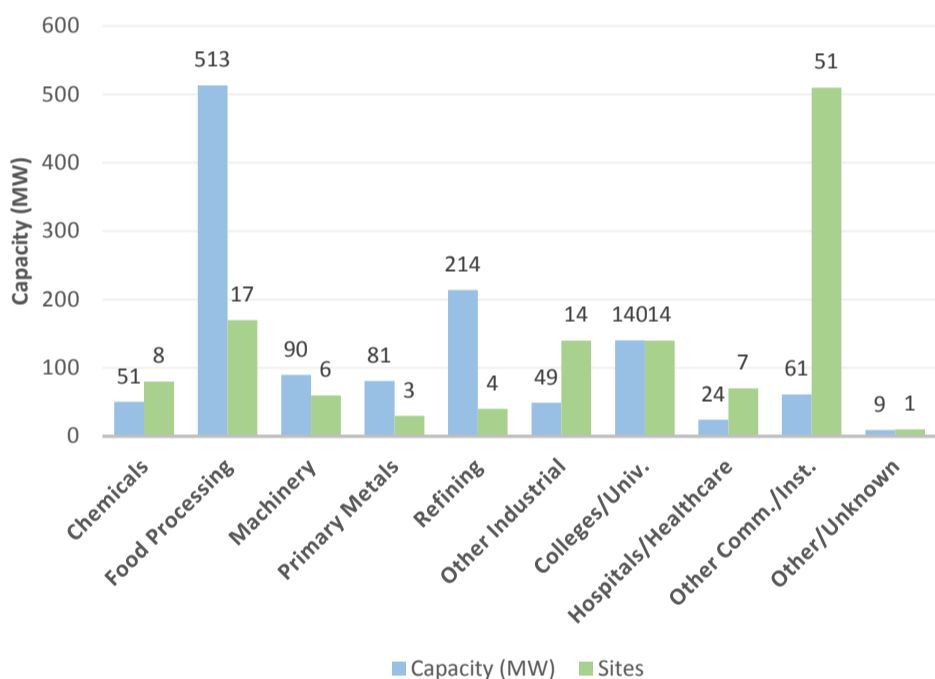
[U.S. DOE Combined Heat and Power Installation Database](#)

Sector	Installations	Capacity (MW)
Industrial	46	978
Commercial/Institutional	72	226
Other	7	28
<b>Total</b>	<b>125</b>	<b>1,233</b>



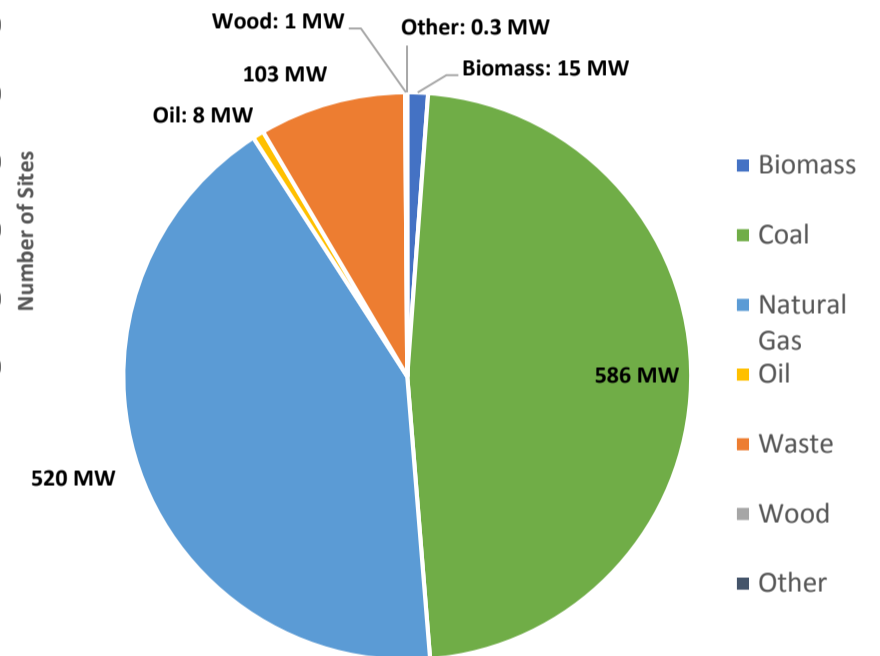
The Midwest CHP Technical Assistance Partnership has compiled information on certain illustrative CHP projects in Illinois. You can access these by visiting the Department of Energy's [CHP Project Profiles Database](#).

### Illinois CHP by Application



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

### Illinois CHP Capacity (MW) by Fuel Type



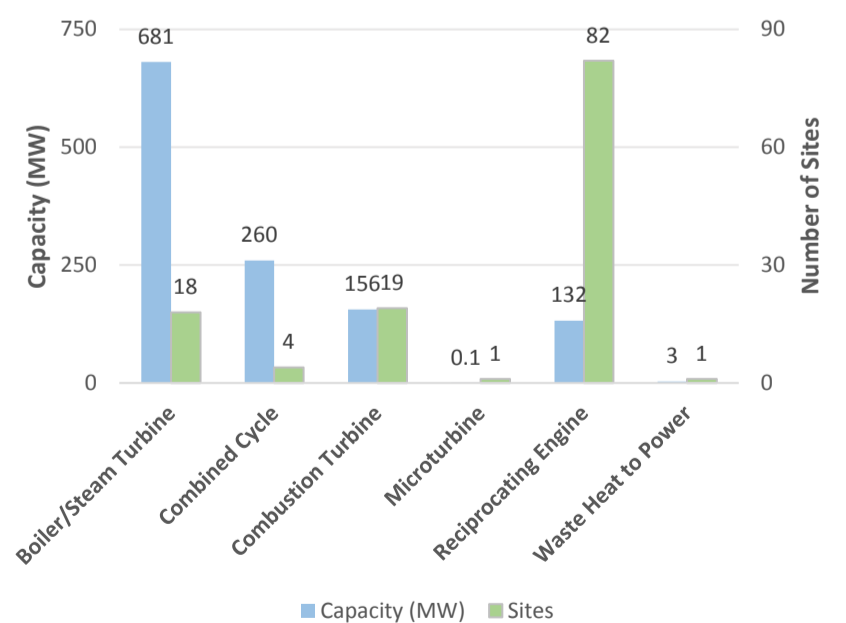
Source: DOE CHP Installation Database (U.S. installations as of Dec. 31, 2016)

### Illinois CHP by Size Range



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

### Illinois 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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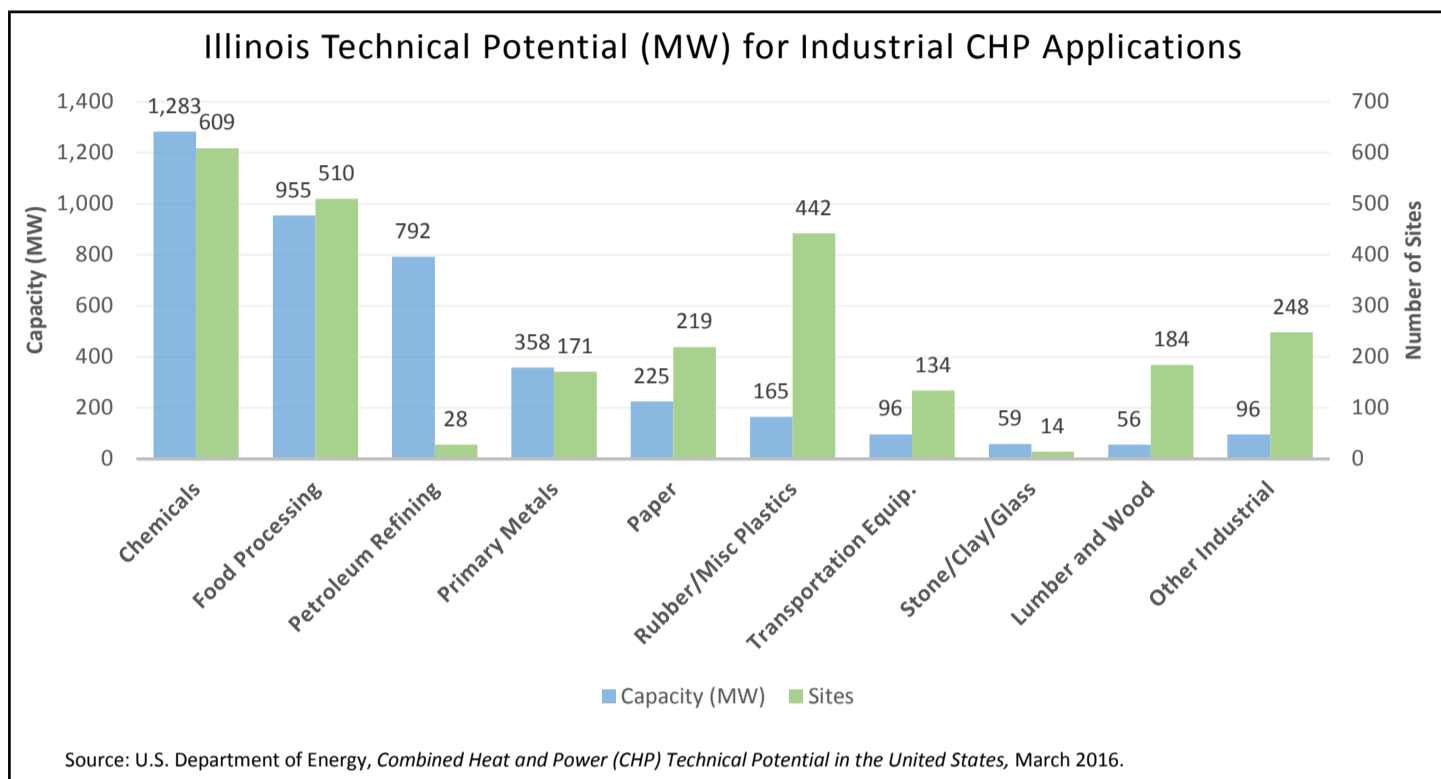
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## Illinois Technical Potential for New CHP Installations

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

Sector	Potential Sites	Potential Capacity (MW)
Industrial	2,559	4,085
Commercial/Institutional	11,158	3,378
<b>Total</b>	<b>13,717</b>	<b>7,464</b>

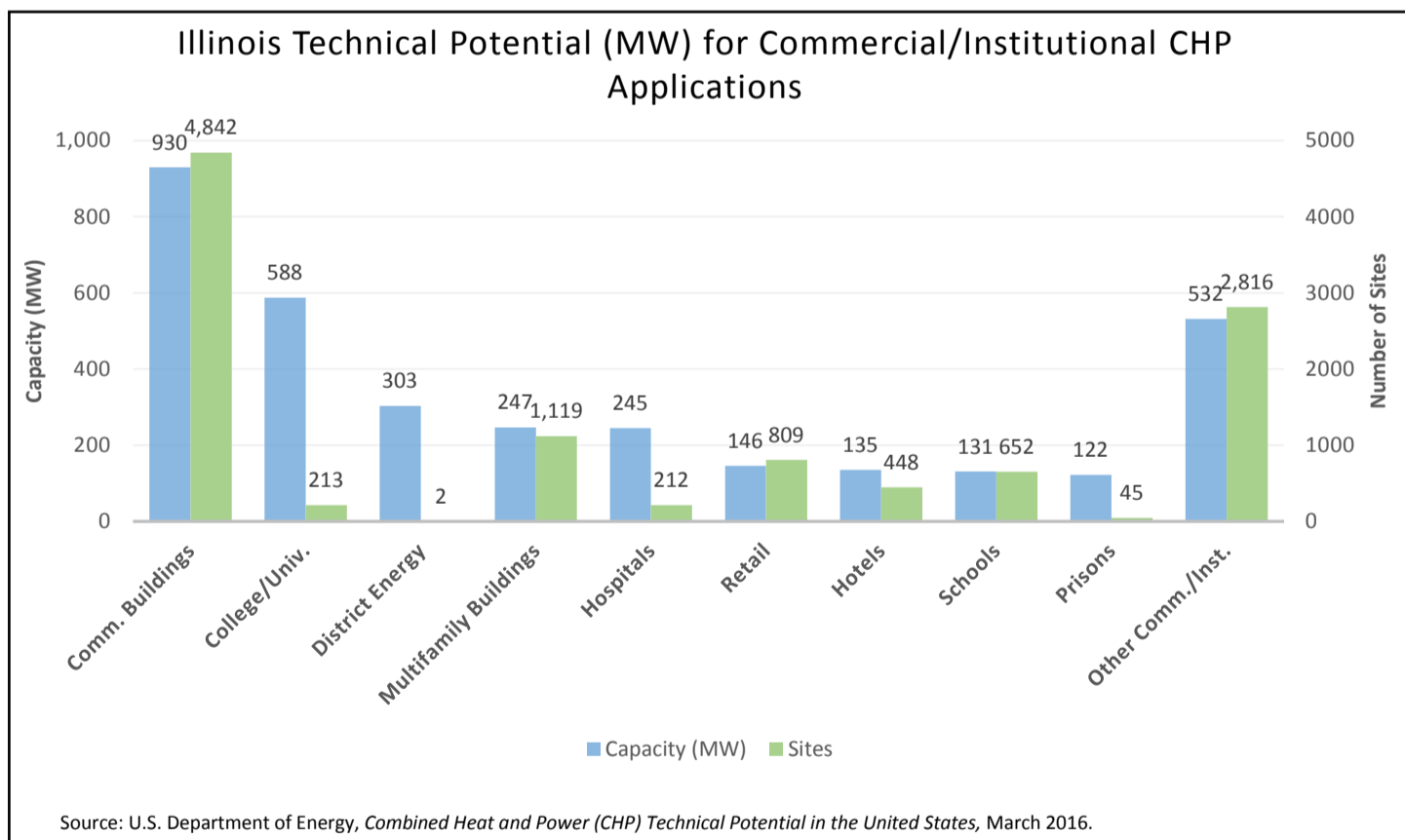


Source: U.S. Department of Energy, *Combined Heat and Power (CHP) Technical Potential in the United States*, March 2016.

### Technical Potential by CHP Size Range for Top Five 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	344	65	73	54	129	280	49	455	14	429	609	1,283
Food Processing	331	66	55	40	95	175	22	189	7	484	510	955
Petroleum Refining	0	0	5	4	10	21	2	15	11	753	28	792
Primary Metals	83	21	36	26	38	82	10	128	4	101	171	358
Paper	136	34	38	27	39	88	5	56	1	20	219	225
Other Industrial	860	137	84	57	65	147	12	104	1	28	1,022	473
<b>Total</b>	<b>1,754</b>	<b>323</b>	<b>291</b>	<b>207</b>	<b>376</b>	<b>793</b>	<b>100</b>	<b>947</b>	<b>38</b>	<b>1,815</b>	<b>2,559</b>	<b>4,085</b>

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



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	3,099	155	1,356	542	387	232	0	0	0	0	4,842	930
College/Univ.	106	18	15	10	63	189	23	207	6	163	213	588
Multifamily Buildings	789	59	286	143	44	44	0	0	0	0	1,119	247
Hospitals	70	17	48	34	92	183	2	12	0	0	212	245
Retail	766	112	35	21	8	13	0	0	0	0	809	146
Other Comm./Inst.	3,714	500	151	98	86	170	9	114	3	341	3,963	1,223
<b>Total</b>	<b>8,544</b>	<b>862</b>	<b>1,891</b>	<b>848</b>	<b>680</b>	<b>831</b>	<b>34</b>	<b>332</b>	<b>9</b>	<b>504</b>	<b>11,158</b>	<b>3,378</b>

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

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## Illinois 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.

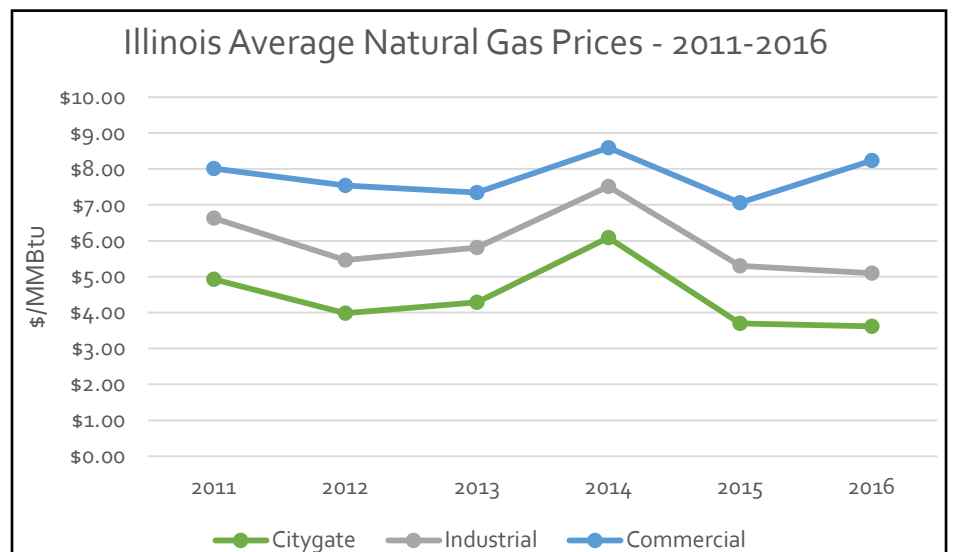
### Illinois Natural Gas Prices

#### Illinois Average Gas Prices - 2016

Sector	IL Price (\$/MMBtu)	U.S. Price (\$/MMBtu)
Citygate*	3.62	3.75
Industrial	5.10	3.39
Commercial	8.23	7.22

Source: U.S. Energy Information Administration, "Natural Gas Prices", [https://www.eia.gov/dnav/ng/ng\\_pri\\_sum\\_dcu\\_SIL\\_a.htm](https://www.eia.gov/dnav/ng/ng_pri_sum_dcu_SIL_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.



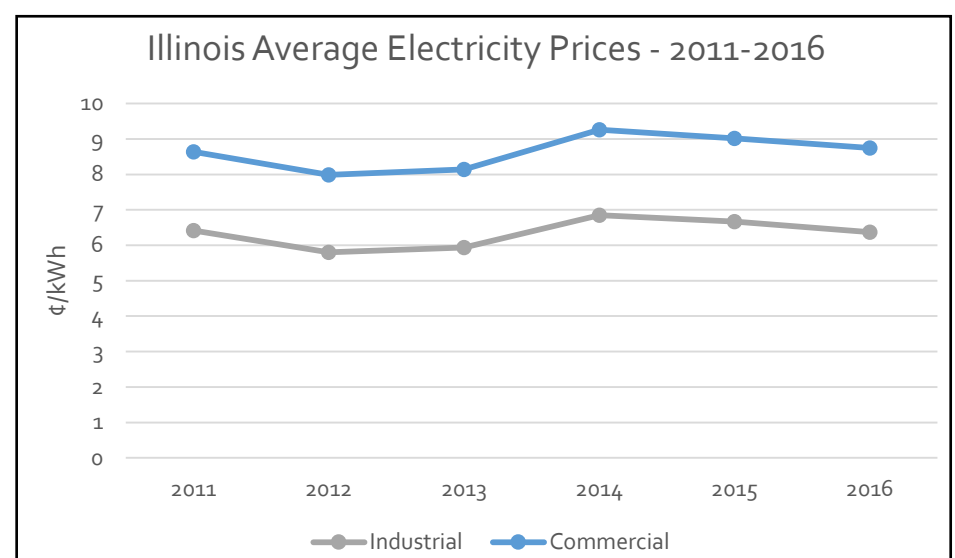
### Illinois Electricity Prices

#### Illinois Average Electricity Prices - 2016

Sector	IL Price (¢/kWh)	U.S. Price (¢/kWh)
Industrial	6.37	6.75
Commercial	8.75	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.



#### Illinois Average Delivered Electricity Prices by Utility

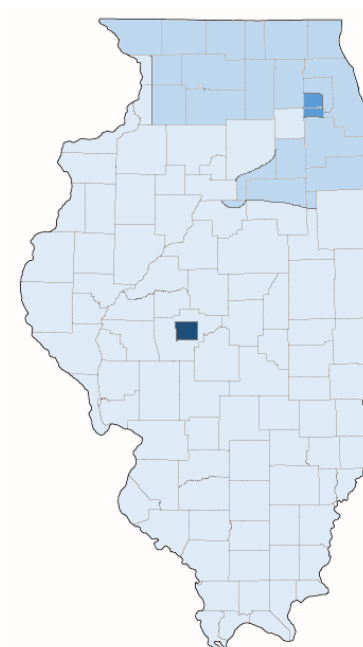
Utility	Industrial Price (¢/kWh)	Commercial Price (¢/kWh)	Average Price** (¢/kWh)
City of Springfield	-	13.54	13.54
City of Naperville	8.34	9.66	9.00
Commonwealth Edison	6.38	9.87	8.13
Ameren Illinois Company	4.41	8.77	6.59
MidAmerican Energy	4.99	7.51	6.25

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.

#### Illinois Electricity Prices – Heat Map



- Ameren Illinois Company / MidAmerican Energy
- Commonwealth Edison
- City of Naperville
- City of Springfield

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Potential

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## Department of Energy CHP Partnerships

### Midwest CHP Technical Assistance Partnership



U.S. DEPARTMENT OF ENERGY  
**CHP Technical Assistance Partnerships**  
MIDWEST

Midwest CHP TAP Director: Cliff Haefke  
Phone: 312-355-3476  
Email: [chaefk1@uic.edu](mailto:chaefk1@uic.edu)

### 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](#).

- Nicor Gas

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