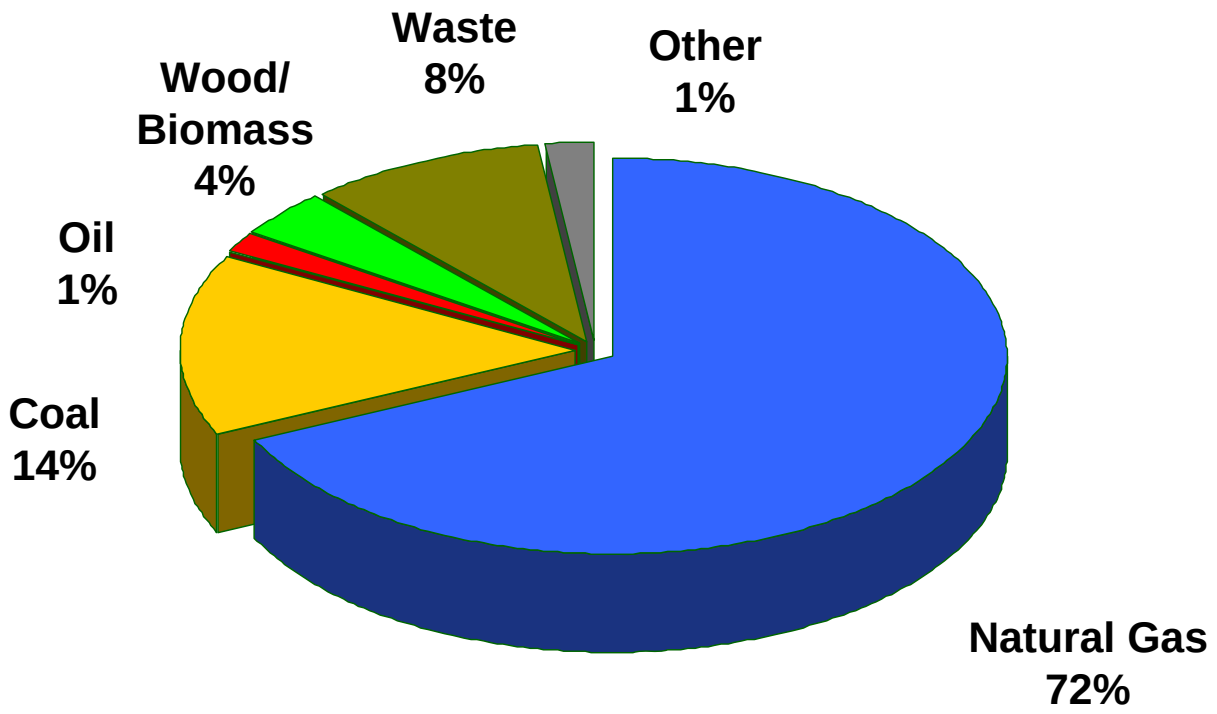
Installed CHP in 2005

- 83,200 MW at 3,163 sites
- Average capacity is 26.3 MW
- Median capacity is 2.0 MW

Natural Gas Is the Preferred Primary Fuel for CHP

- *Existing CHP Capacity (2005): 83,200 MW*



Source: EEA

Renewably Fueled CHP

- Renewable fuels for CHP
  - ✓ Wood/wood wastes
  - ✓ Agricultural wastes
  - ✓ Food processing wastes
  - ✓ Energy crops
  - ✓ Biogas
- CHP Applications
  - ✓ Biomass – variety of applications (food, processing, wood products, etc) depending on fuel availability
  - ✓ Agriculture (anaerobic digesters and crop waste)
  - ✓ Landfills with adjacent commercial/industrial facilities (landfill gas)
  - ✓ Wastewater treatment facilities (anaerobic digesters)

Benefits of Renewably Fueled CHP

- Can produces power at a cost below retail electricity
- Displaces purchased fuels for thermal needs
- Enhances power reliability
- Acts as a hedge against energy price volatility
- Reduces GHG and other emissions
- Eligible as renewable fuel for green power programs
- Qualifies for grant/loan/etc. incentives for renewables

Existing Renewable CHP Applications (Primary or Secondary Fuel)

- Wood/Wood Wastes – wood products, paper, food, furniture industry – 1,804 MW at 143 sites
- Agricultural and Food Processing Wastes - food processing plants, agriculture, universities – 497 MW at 58 sites
- Landfill gas/waste water treatment – 453 MW at 106 sites
- Pulp and paper mills (black liquor) – 12,300 MW at 86 sites

Existing Renewable CHP Technologies (Primary or Secondary Fuel)

- Wood/Wood Wastes – Primarily boiler/steam turbine systems
- Agricultural and Food Processing Wastes – Mostly boiler/steam turbines; some gasifiers
- Landfill gas/waste water treatment – Recip engines, gas turbines and microturbines running on biogas
- Pulp and paper mills (black liquor) – Large boilers with steam turbines

Existing CHP in the Northeast

State	Total		Renewable*	
	Sites	MW	Sites	MW
Connecticut	89	528	2	<1
Delaware	4	396	0	0
Maine	29	1,131	10	220
Maryland	18	827	2	8
Massachusets	109	1,877	1	76
New Hampshire	17	90	5	17
New Jersey	200	3,488	10	28
New York	348	5,746	3	60
Pensylvania	102	3,271	8	80
Rhode Island	17	103	0	0
Vermont	14	40	6	25
	947	17,497	47	514

* Primary fuel only, does not include black liquor in paper

Technical Potential for CHP in the Northeast

State	< 5 MW		5 - 20 MW		> 20 MW		Total	
	Sites	MW	Sites	MW	Sites	MW	Sites	MW
Connecticut	5,365	890	39	182	5	194	5,409	1,265
Delaware	1,110	259	34	331	11	750	1,155	1,340
Maine	1,708	296	15	104	1	38	1,724	437
Maryland	7,091	1,175	75	474	9	295	7,175	1,944
Massachusets	9,220	1,760	89	495	3	100	9,312	2,355
New Hampshire	1,700	269	13	72	0	0	1,713	341
New Jersey	12,756	2,190	127	742	8	300	12,891	3,232
New York	24,577	3,692	214	1,041	18	366	24,809	5,099
Pensylvania	16,838	3,431	213	1,391	39	1,569	17,090	6,391
Rhode Island	1,616	251	12	73	0	0	1,628	324
Vermont	871	154	7	37	0	0	878	191
	82,852	14,367	838	4,941	94	3,611	83,784	22,919

Technical Potential for CHP - existing commercial and industrial facilities; within the fence use

Renewably Fueled CHP in the Northeast

- Opportunities exist – over 900 facilities can use CHP systems of 5 MW or greater
- Depends on availability of fuel
- Depends on ability of site to handle fuel
  - ✓ Thermal loads – steam/hot water
  - ✓ Electric loads
  - ✓ Hours per year of operation
  - ✓ Space for fuel delivery, storage and processing
  - ✓ Space for CHP system
- Focus on traditional users
  - ✓ Wood products, agriculture, food processing
  - ✓ Universities, campus facilities