FY 2009
Cornell University
Energy Fast Facts[1]

PRIMARY ENERGY CONSUMPTION

Primary Consumption (trillion Btu)	1990 [2]	2009
Electricity (Grid Purchased)	0.60	0.75
Coal	1.33	1.21
Hydro	0.02	0.02
Natural Gas	0.28	0.44
Oil	0.14	0.06
Total Primary Energy Consumption	**2.35**	**2.48**
Primary Consumption (MMBtu) per sq. ft.	**0.20**	**0.18**

ENERGY CONSUMPTION BY BUILDING

Building Type: (trillion Btu)	1990	2009
Research/Teaching	NA	2.11
Campus Life	NA	0.30
Administration	NA	0.07

ELECTRICITY

Cornell Utilities Generated (Mwh)	1990	2009
Cornell Utilities Hydro	5,200	4,800
Cornell Utilities Steam Turbine - Cogen	21,000	18,100
Cornell Utilities Gas Turbine - CCHPP[3]	0	0
Total Cornell Utilities Generated	**26,200**	**22,900**
Electricity (Grid Purchased) (Mwh)	174,500	219,900
Total Electricity (Mwh)	**200,700**	**242,800**

Electricity (Grid Purchased) Sources [4,5]	1990	2009
Biomass	0%	<1%
Coal	74%	16%
Natural Gas	5%	23%
Hydro	14%	19%
Nuclear	5%	30%
Oil	2%	11%
Solar	0%	<1%
Solid Waste	0%	1%
Wind	0%	<1%

ADDITIONAL STATISTICS

	1990	2009
Total Enrollment	18,581	20,273
Campus Area (1000 sq. ft.)	11,800	13,944
Square Feet per Student	635	688
Heating Degree Days (7182 Normal)	6,919	7,299
Cooling Degree Days		312

ENERGY RELATED CARBON DIOXIDE (CO_2) EMISSIONS

Energy Source	1990	2009
Electricity (Grid Purchased)	167.4	90.7
Cornell Utilities	165.2	158.1
Total CO_2 Emissions (thousand tons)	**332.6**	**248.8**

CO_2 Emissions By Primary Energy Type:	1990	2009
Coal	42%	51%
Electricity (Grid Purchased)	50%	36%
Hydro	0%	0%
Natural Gas	5%	10%
Oil	4%	2%

CO_2 Emissions By Utility Type:	1990	2009
Electricity to Campus (Grid Purchased)	44%	36%
Electricity (Cornell Generated)	3%	3%
Steam	47%	61%
Chilled Water	6%	1%

STEAM

	1990	2009
Total Steam Export (trillion Btu)	1.31	1.33
Steam Fuel Sources (trillion Btu)		
Coal	1.33	1.21
Natural Gas	0.28	0.44
Oil	0.14	0.06
Total Energy Input (trillion Btu)	1.74	1.71
Thermal Efficiency	69%	69%

CHILLED WATER

	1990	2009
Total Chilled Water Production (trillion Btu)	0.338	0.476
Total Energy Input (trillion Btu)[6]	0.072	0.019
System Coefficient of Performance	4.7	25.0
Chilled Water Sources		
Mechanical Chillers	83%	1%
Lake/Free Cooling	17%	99%

GLOSSARY

Btu: British thermal unit
Primary: Central Plant Usage
MMBtu: Million Btu
Mwh: mega watt-hour

NOTES

1 Information provided is for Ithaca central utility campus only.

2 Kyoto Base Year is 1990

3 Cornell Combined Heat and Power Project (CCHPP) expected start-up FY 2010. Cornell Utilities Department will generate the majority of Ithaca Campus electrical demand utilizing natural gas turbines. Waste heat from the gas turbines will be used by a heat recovery steam generator to provide steam to Campus. Coal use will decline and natural gas usage will increase as a result of the CCHPP.

4 1990 grid purchased electric emission rate determined from New York State Electric & Gas (NYSEG) 1990 annual report.

5 Beginning FY 2008, grid purchased electric emission rate from eGRID region upstate New York

6 Chilled water input Btu's are the energy input to the central plants for production and distribution of cooling water.