Fiscal Year 2013
Cornell University
Central Energy Plant (CEP) Fast Facts[1]

CEP PRIMARY ENERGY CONSUMPTION		
Primary Consumption (trillion Btu)	***1990*** [(2)]	***2013***
Electricity (Grid Purchased)	0.60	0.20
Coal	1.33	0.00
Hydro (electric)	0.02	0.01
Natural Gas	0.28	2.57
Oil	0.14	0.00
Total Primary Energy Consumption	**2.35**	**2.79**

CENTRAL ENERGY PLANT EFFICIENCY		
Energy Output (trillion Btu)	***1990***	***2013***
Total Steam Generation	1.31	1.25
Total Turbine Electric Generation	0.07	0.73
Total Energy Output	1.38	1.98
Fuel Sources (trillion Btu)	***1990***	***2013***
Coal	1.33	0.00
Natural Gas - Boilers	0.28	0.16
Natural Gas - Turbines	0.00	2.11
Natural Gas - Duct Burners	0.00	0.30
Oil	0.14	0.00
Total Energy Input (trillion Btu)	1.74	2.57
Total Central Plant Efficiency	69%	77%
Total Steam Sales (trillion Btu)	NA	1.04
Total Steam Losses (%)	NA	17%

ELECTRICITY		
Cornell Utilities Generated (Mwh)	***1990***	***2013***
Cornell Utilities Hydro	5,200	4,000
Cornell Utilities Steam Turbine - Cogen	21,000	25,700
Cornell Utilities Gas Turbine - CCHPP[(3)]	0	189,100
Total Cornell Utilities Generated	**26,200**	**218,800**
Electricity Exported to Grid (Mwh)	0	(38,700)
Electricity (Grid Purchased) (Mwh)	175,000	54,400
Total CEP Electricity (Mwh)	**201,200**	**234,500**
Total Campus Sales (Mwh)	**NA**	**223,000**
Electricity LSC (Grid Purchased) (Mwh)	0	5,600
Electricity (Grid Purchased) Sources	***1990***	***2013***
Other Renewables	0%	4%
Coal	74%	7%
Natural Gas	5%	44%
Hydro	14%	11%
Nuclear	5%	13%
Petroleum	2%	16%
Other Gases	0%	<1%
Pumped Storage	0%	4%

CHILLED WATER		
Energy Output & Input (trillion Btu)	***1990***	***2013***
Total Chilled Water Production (trillion Btu)	0.338	0.535
Total Energy Input (trillion Btu)[(6)]	0.072	0.023
System Coefficient of Performance	**4.7**	**23.2**
Total Campus Sales (trillion Btu)	N/A	0.536
Chilled Water Sources		
Mechanical Chillers	83.2%	1%
Lake Source Cooling	17%	99%

ENERGY RELATED CARBON DIOXIDE (CO_2) EMISSIONS		
Purchased Electric	***1990***	***2013***
Grid CO_2 Emission Factor (lbs/MWh)	1,918	501
Grid Electric CO_2 (1,000 tons)	167	15
Cornell Central Energy Plant		
Cornell Coal[(4)]	138	0
Cornell Natural Gas[(5)]	15	125
Cornell Oil	12	0.3
Total CEP CO_2 Emissions (1,000 tons)	165	125
Total CO_2 Emissions (1,000 tons)	**333**	**140**
CO_2 Emissions By Primary Energy Type:	***1990***	***2013***
Electricity (Grid Purchased)	50%	11%
On-Site Coal	42%	0%
On-Site Natural Gas	5%	89%
On-Site Oil	4%	0%
On-Site Hydro	0%	0%

CENTRALLY CONNECTED BLDG GSF x 1,000		
	1990	***2013***
Electric (provided via CEP)	NA	13,700
Steam (provided via CEP)	NA	12,600
Chilled Water (provided via CEP)	NA	8,000

ENERGY METRICS (KBTU/GSF) PER YEAR		
	1990	***2013***
Electric Sales	NA	58
Steam Sales	NA	100
Chilled Water Sales	NA	67

ENERGY CONSUMPTION BY BUILDING		
Building Type: (trillion Btu)	***1990***	***2013***
Research/Teaching	NA	2.01
Campus Life	NA	0.56
Administration	NA	0.22

POPULATION AND WEATHER		
	1990	***2013***
Students	18,389	20,329
Staff/Non-Faculty	7,690	9,118
Faculty	1,617	1,528
Ithaca Campus [(6)] (1000 GSF)	11,800	15,200
Campus GSF per Student	642	748
Heating Degree Days (7,220 Normal)	6,919	6,756
Cooling Degree Days (337 Normal)	312	581

GLOSSARY & NOTES

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

(1) Info for CEP only, not all campus facilities part of CEP
(2) Kyoto Base Year is 1990
(3) Combined Heat & Power Plant start-up FY 2010
(4) "Beyond Coal" begins FY 2012
(5) GHG adjusted for exported electric
(6) Ithaca Campus GSF includes non-CEP connected facilities