Fiscal Year 2024 (REVISED)
Cornell University
Central Energy Plant (CEP) Fast Facts[1]

CEP PRIMARY ENERGY CONSUMPTION

Primary Consumption (trillion Btu)	1990[2]	2024
Electricity (Grid Purchased)	0.60	0.13
Coal	1.33	0.00
Hydro (electric)	0.02	0.01
Natural Gas	0.28	2.61
Oil	0.14	0.00
Total Primary Energy Consumption	**2.35**	**2.75**

CENTRAL ENERGY PLANT EFFICIENCY

Energy Output (trillion Btu)	1990	2024
Total Steam Generation[3]	1.35	1.29
Total Turbine Electric Generation	0.07	0.69
Total Energy Output	1.42	1.98

Fuel Sources (trillion Btu)	1990	2024
Coal	1.33	0.00
Natural Gas - Boilers	0.28	0.20
Natural Gas - Turbines	0.00	2.25
Natural Gas - Duct Burners	0.00	0.16
Oil	0.14	0.00
Total Energy Input (trillion Btu)	1.74	2.61
Total Central Plant Efficiency	81%	76%
Total Steam Sales (trillion Btu)	0.99	0.75
Total Distrib and Building Steam Losses (%)	17%	27%
Total Steam Condensed for Electric (trillion Btu)	0.00	0.15

ELECTRICITY

Cornell Utilities Generated (Mwh)	1990	2024
Cornell Utilities Hydro	5,200	4,400
Cornell Utilities Steam Turbine - Cogen	21,000	14,800
Cornell Utilities Gas Turbine - CCHPP[3]	0	195,000
Total Cornell Utilities Generated	**26,200**	**214,200**
Electricity Exported to Grid (Mwh)	0	(38,200)
Electricity (Grid Purchased) (Mwh)	174,500	31,500
Total CEP Electricity (Mwh)	**200,700**	**207,500**
Total Campus Sales (Mwh)	**190,626**	**198,000**
LSC Electricity (Grid Purchased) (Mwh)	0	6,700

Electricity (NY State Grid) Sources	1990	2024
Other Renewables	0%	9%
Coal	19%	0%
Natural Gas	17%	25%
Hydro	21%	33%
Nuclear	17%	32%
Petroleum	25%	0%
Other	1%	<1%
Total	100%	100%

CHILLED WATER

Energy Output & Input (trillion Btu)	1990	2024
Total Chilled Water Production (trillion Btu)	0.381	0.635
Total Energy Input (trillion Btu)[6]	0.072	0.030
System Coefficient of Performance	**5.3**	**21.2**
Total Campus Sales (trillion Btu)	0.348	0.526
Chilled Water Sources		
Mechanical Chillers	85%	4%
Lake Source Cooling	0%	96%
"Free" Cooling	15%	0%

ENERGY RELATED CARBON DIOXIDE (CO_2) EMISSIONS

Purchased Electric	1990	2024
Grid CO_2 Emission Factor (kg/MWh)	870	110
Grid Electric CO_2 (1,000 metric tons)	152	4
Cornell Central Energy Plant		
Cornell Coal[4]	125	0
Cornell Natural Gas[5]	15	138
Cornell Oil	11	0
Total CEP CO_2 Emissions (1,000 metric tons)	151	138
Total CO_2 Emissions (1,000 metric tons)	**303**	**143**

CO_2 Emissions By Primary Energy Type:	1990	2024
Electricity (Grid Purchased)	50%	3%
On-Site Coal	41%	0%
On-Site Natural Gas	5%	97%
On-Site Oil	4%	0%
On-Site Hydro	0%	0%

CENTRALLY CONNECTED BLDG GSF x 1,000

	1990	2024
Electric (provided via CEP)	NA	14,700
Steam (provided via CEP)	NA	13,800
Chilled Water (provided via CEP)	NA	12,000

ENERGY METRICS (KBTU/GSF) PER YEAR

	1990	2024
Electric (CEP to Campus)	NA	48
Steam (gross Generation less SCB)	NA	83
Chilled Water (gross Production)	NA	53

ENERGY CONSUMPTION BY BUILDING

Building Type: (trillion Btu)	1990	2024
Research/Teaching	NA	1.98
Campus Life	NA	0.55
Administration (includes CEP)	NA	0.22

POPULATION AND WEATHER

	1990	2024
Students	18,389	25,072
Staff/Non-Faculty	7,690	10,914
Faculty	1,617	1,576
Ithaca Campus [6] (1000 GSF)	11,800	16,613
Campus GSF per Student	642	663
Heating Degree Days (7,208 Normal)	6,919	6,011
Cooling Degree Days (415 Normal)	312	708

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 NOT adjusted for exported electric

(6) Ithaca Campus GSF includes non-CEP connected facilities