# FY 2001 Cornell University Energy Fast Facts

## PRIMARY ENERGY CONSUMPTION

*Consumption increased 4% from 2000*

<table>
<thead>
<tr>
<th>Energy Source</th>
<th>1990</th>
<th>2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal</td>
<td>1.68</td>
<td>1.54</td>
</tr>
<tr>
<td>Electricity (Purchased)</td>
<td>0.73</td>
<td>0.63</td>
</tr>
<tr>
<td>Hydro</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>0.07</td>
<td>0.10</td>
</tr>
<tr>
<td>Oil</td>
<td>0.06</td>
<td>0.00</td>
</tr>
</tbody>
</table>

1990 Primary Consumption per Square Foot (million Btu): 0.20
2001 Primary Consumption per Square Foot (million Btu): 0.19

## END-USE ENERGY CONSUMPTION

By Building Type:
- Lab Buildings: TBD
- Residence Halls: TBD
- Other: TBD

## ENERGY RELATED CO₂ EMISSIONS

*Emissions increased 8% from 2000*

<table>
<thead>
<tr>
<th>Year</th>
<th>Total CO₂ Emissions (thousand tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>326</td>
</tr>
<tr>
<td>2001</td>
<td>279</td>
</tr>
</tbody>
</table>

By Primary Energy Type:
- Coal: 42% 57%
- Electricity (purchased): 49% 31%
- Hydro: 0% 0%
- Natural Gas: 5% 3%
- Oil: 4% 0%

By Utility Type:
- Chilled Water: 5% 4%
- Electricity - Procured: 49% 31%
- Electricity - Cogenerated: 3% 5%
- Steam: 48% 55%

## GLOSSARY

- Btu: British thermal unit
- CO₂: Carbon Dioxide
- Primary: Central Plant Usage
- End Use: Building metered usage
- COP: Coefficient of Performance

## NOTES

1. Information provided is for Ithaca central utility campus only.
2. Chilled Water end use Btu are energy input to the central plants for production and distribution of cooling water.
3. 1990 purchased electric emission rate determined from New York State Electric & Gas (NYSEG) 1990 annual report.
4. 2001 purchased electric emission rate provided by New York State Public Service Comission (NYSPSC).

## CHILLED WATER

1990 Total Chilled Water Production (trillion Btu): 0.34
2001 Total Chilled Water Production (trillion Btu): 0.39

Generation Sources:
- Chillers: 83% 13%
- Lake/Free Cooling: 17% 87%

Total Energy Input (trillion Btu): 0.08 0.04
System COP: 4.15 10.86

## ELECTRICITY

1990 Total Consumption (mwh): 201,000
- Cornell Generated: 26,000
- Purchased: 175,000

2001 Total Consumption (mwh): 242,000
- Cornell Generated: 33,000
- Purchased: 209,000

Cornell Generated Sources:
- Cogeneration: 81% 89%
- Hydro: 20% 13%

Purchased Electricity Sources:
- Biomass: 0% 2%
- Coal: 74% 15%
- Natural Gas: 5% 37%
- Hydro: 14% 18%
- Nuclear: 5% 22%
- Oil: 2% 6%
- Solar: 0% 0%
- Solid Waste: 0% <1%
- Wind: 0% <1%

## STEAM

1990 Total Steam Export (trillion Btu): 1.31
2001 Total Steam Export (trillion Btu): 1.28

Fuel Sources (10¹² Btu):
- Coal: 1.33 1.54
- Natural Gas: 0.29 0.17
- Oil: 0.13 0.00

Total Energy Input (10¹² Btu): 1.75 1.71
Thermal Efficiency: 68% 70%

## ADDITIONAL STATISTICS

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Enrollment</th>
<th>Campus Area (1000 sq. ft.)</th>
<th>Square Feet per Student</th>
<th>Heating Degree Days (7050 ave.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>18,450</td>
<td>11,800</td>
<td>640</td>
<td>6,919</td>
</tr>
<tr>
<td>2001</td>
<td>19,023</td>
<td>13,300</td>
<td>699</td>
<td>7,126</td>
</tr>
</tbody>
</table>