



UIUC Energy Report

Fiscal Year 2020

# Summary

The Urbana-Champaign Campus of the University of Illinois has made subtantial commitments towards conserving energy and other utilities and has made significant progress toward our sustainability goals published in the Illinois Climate Action Plan (iCAP.) Recently,the Utilities and Energy Services Division of Facilities & Services (F&S) created an energy report card to inform campus leadership and management teams regarding progress towards meeting our goals.

During 2020, the Urbana-Champaign campus used a total of 3,811,152 Million BTU’s (MBTU) for the entire campus served by campus utilities. A BTU (or British Thermal Units) is a unit of heat measurement used to common-size all energy input sources like electricity and fuels. Over the utility service area of 22,379,164 gross square feet, this factors out to 173,580 BTU’s per square foot, also known as the Energy Utilization Index or EUI. We use the EUI to compare and contrast energy utilization and density in our buildings. An average household, according to the Energy Information Administration, uses 46,100 BTUs per gsf over the course of a year. In total, a household of 2,000 sf in the Midwest would use a total of 92.2 MBTU’s. Thus the campus usage is the equivalent of 52,400 households. Please note for the purposes of providing meaningful comparisons, the data from the National Petascale Computing Facility (Petascale) has been omitted.

In contrast, during FY 2019 the campus used a total of 4,267,586 MBTUs or 187,656 BTUs per gsf. The decrease of 10.7% can be attributed to weather differences. Overall since 2007, the UIUC campus has decreased usage from 312,124 BTUs per sf to 230,024 BTUs per sf; **a decrease of 26.3%.** Much of this decline can be attributed to the investments in retro-commissioning existing buildings and new buildings with higher energy efficiencies.

In terms of college, auxiliary and unit usage, since 2012, 16 have shown overall reductions in energy consumption expressed in terms of BTUs per gsf, while 8 showed some increase. There are a variety of reasons including research energy intensity, changes in building use and building density, and weather that could affect this. The following chart shows these units on campus and a four-year history of EUI:

# College and Unit Reports

The data on the above chart is compiled from our Energy Billing System database which allocates usage and cost to departments and administrative units depending on their space allocation of a building. Mitigating factors, such as fume hoods and animal rooms are energy intensive resources and drive a higher proportionate share of the building allocation depending on the amount of outside air exchanged. The indices used for building space allocation are downloaded from the Archibus building space management system once per semester and used to allocate cost and usage to each department.

The attached reports reflect usage cost and energy intensity cost and usage for all building space allocated to the unit or department and is described below:

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| Energy Utilization Index  |  |  | | --- | --- | | EUI- BTUs per GSF This section compares the campus building average usage per gsf with the usage of the college or administrative unit. All energy usage in a building is converted to BTUs, aggregated and divided by the amount of square footage in the building space allocated to the unit. |  |  Comparison of UIUC Building Types The report also includes a reference to typical UIUC building spaces and their average Energy Utilization Indices by type. This information was provided by the UIUC Energy Billing System database. | |  |  | | --- | --- | | Historical Usage Data The remaining charts on the page show the energy consumption trends by year in BTUs per sf and in total energy expenditures. In the commodity chart, usage trends are broken down by type of commodity used. |  | |