

ENERGY USE POLICY

University of Illinois at Urbana-Champaign

“From fiscal years 2002 to 2006 the Urbana-Champaign campus of the University of Illinois realized an increase in utility costs of approximately 150%. The adverse financial impact was exacerbated by new or deepening cost pressures in nearly every area of campus operation. Spiraling energy costs in that period were a result of world-wide demand for energy; increasingly volatile fuel costs; and to a lesser extent, growth in the campus plant. There are no signs those trends will abate. Our ability to control utility costs in the future lies largely in our ability - and willingness - to reduce our consumption. There is no realistic alternative to stem the spiraling cost that diminishes the funding of our primary missions.”

Richard H. Herman
Chancellor

In this context, the campus implements this energy policy that is fiscally, environmentally, and socially responsible. In the short-term (until 2012), this policy will aggressively reduce our energy consumption and improve energy efficiency. In the long-term, it will proactively increase our use of renewable energy to power our campus. In doing so, we will reduce our energy costs and reduce air emissions, including greenhouse gases.

CAMPUS ENERGY GOALS

- I. Reduce energy consumption and cost** by eliminating waste and increasing energy efficiency in buildings, electrical equipment used in offices and labs, and campus transportation systems.
- II. Shift to renewable energy resources** by systematically shifting our reliance on fossil fuels to an appropriate balance of energy conservation and alternative and renewable energy sources.
- III. Reduce greenhouse gas emissions** from energy generation, agricultural operations, and transportation.

GENERAL

A. Incentive-based System

The campus will implement a carefully structured incentive system for energy consumption/conservation. It will entail elements, likely fiscal and behavioral, that compel administrators and the general campus populace to use the least energy necessary to achieve personal, professional, and programmatic goals.

B. Metering

The campus will operate and maintain a utility metering program to provide timely and accurate information regarding building and/or departmental energy consumption. Regardless of the detailed nature of energy incentives, responsible energy use relies on factual measures of consumption. Similarly, incentive systems that entail charges or credits for increases or decreases in energy use require careful attention to consumption baseline data and subsequent changes.

C. Personal Responsibility

It is the responsibility of each student, faculty, and staff member to minimize energy consumption on the campus wherever possible, including lowering thermostat settings in the winter; raising thermostat settings in the summer; and turning off lights, computer monitors, printers, copiers, and other electrical equipment when not in use. Students, faculty, and staff members should dress for the weather, e.g., wear warmer clothes and sweaters in the winter, thus increasing personal comfort without need for additional fuel/electricity.

D. Education and Awareness

The campus will implement a coordinated strategy to educate faculty, staff, and students about campus energy issues; and update them frequently about progress toward campus and unit conservation goals.

E. Computers and IT Equipment

Printers, monitors, projectors, copy machines, and other office equipment should be turned off when not in use. Shutdown of computers entails multiple considerations which are discussed in detail in the CITES document "Guidelines for Energy Conservation and Computing Equipment" for energy efficiency.

[<http://www.cites.uiuc.edu/guidelines/energy.html>]

F. Purchasing

Campus units should purchase energy-efficient equipment to the greatest extent possible, in accordance with the Procurement Code and USEPA ENERGY STAR® requirements. (Urbana is a registered Energy Star campus.)

G. Transportation

The Campus Area Transportation Study (CATS III) encourages pedestrian and bicycle modes of transportation, and use of mass transit to get around campus. In addition, the use of biofuels and other alternative energy sources shall be encouraged by campus administrators, to the extent their uses are expected to have overall environmental and societal benefits. New car pool and fleet vehicles for the campus should be purchased with the highest fuel efficiency practical for the use. The campus and its vehicle fleet management should explore cooperative work with the Champaign-Urbana Mass Transit District to serve campus area passengers while minimizing energy use and roadway damage by large mass transit vehicles during off-peak periods.

- H. Reporting of Conspicuous Energy Waste
Faculty, staff and students should report cases of obvious or excessive energy waste to Facilities & Services via either the F&S Service Office (333-0340), the Energy Conservation website (www.energymanagement.uiuc.edu), or Terry Ruprecht, Director of Energy Conservation.
- I. Standards for Heating, Air Conditioning, and Ventilation
Energy standards for heating, ventilation, and air conditioning systems in both new construction and modifications to existing facilities shall be the latest versions of ASHRAE Standard 90.1, "Energy Efficient Design of New Buildings Except Low Rise Residential," and ASHRAE Standard 62, "Ventilation for Acceptable Indoor Air Quality."

ENERGY MANAGEMENT IN EXISTING FACILITIES

- A. Space Temperatures
General space temperatures during occupied hours in the **winter heating season** should fall between 68-71 degrees F. Where it is technically and programmatically feasible, temperatures during unoccupied periods should be set back to 55 degrees F or above. Exceptions are special requirements areas such as animal rooms and research facilities with documented need for constant or warmer temperatures.

General space temperatures during occupied hours in the **air conditioning season** should fall between 75-78 degrees F. Where it is technically and programmatically feasible, unoccupied temperatures will be allowed to rise as high as 85 degrees F. The same special area exceptions apply as in the heating policy above.

Space temperatures outside the above shall not be implemented unless approved by the College Dean and the Office of the Provost.

- B. Space Heaters
Space heaters should not be used in campus facilities, other than temporary outages when the primary building heat is not operational. Space heaters use an inordinate amount of energy and can present an electrical and fire hazard. Persons whose workspace cannot be heated to within the winter heating season guidelines above should call Facilities & Services for system analysis and repair.
- C. Operating Hours of Heating, Ventilating, and Air Conditioning (HVAC) Equipment
Because most campus electricity is used by motor-driven mechanical systems, reduction in their hours of operation is paramount to achieving rapid and effective reduction of consumption. Deans, directors, department heads, and administrators will encourage cooperation in their college/department/unit in responsibly reducing hours of HVAC operation within the limits dictated by true program needs. To the greatest extent possible, building HVAC systems should be operated only between building opening and closing times.

Fume hood operation should be minimized to the greatest extent allowable, within appropriate safety guidelines. Because fume hood operation entails the heating and/or cooling of large amounts of outdoor air via main fan systems, it is one of the single largest determinants of building energy use. (Of the highest 15 energy consuming buildings on the Urbana campus, nine have extensive installations of fume hoods. The approximate energy cost for each fume hood operated 40 hours per week is \$5,500 per year.)

D. Window Air Conditioning Units

Window air conditioning units should be operated only during hours the space is occupied. If acceptable space temperatures (see item A above) cannot be achieved without extensive running time of the unit, contact Facilities & Services at 3-0340, or submit a report to the Energy Conservation website (www.energymanagement.uiuc.edu)

E. Lighting

Office and general lighting in buildings should be off during unoccupied hours, unless required for security or personal safety in acknowledged risk areas. Task lighting and natural light from windows and skylights are strongly encouraged, and should be employed before general room lighting is activated. Decorative lighting is discouraged and should be kept to a minimum. Exterior lighting should be employed only for personal safety and security. Lighting levels recommended in the most recent edition of the IESNA (Illuminating Engineering Society of North America) will be used as guidelines.

F. Water

Water consumption should be minimized wherever and whenever possible. Water should not be left running and unattended. City water (potable water) shall not be used for direct cooling of equipment. Such “once-through” water cooling systems, generally installed years ago for specialized apparatus, are prohibited because they run large amounts of potable water to drain, commonly twenty-four hours a day.

G. Holiday Periods and Summer Session

During periods when normal campus operations are suspended (e.g., December holiday break), substantial shutdown of normal heating and air conditioning will occur. During the winter heating season, space temperatures as low as 55 degrees F are possible. During the summer cooling season, space temperatures as high as 85 degrees F are possible. Only specific, documented temperature requirements in research areas may supercede the above unoccupied limits. In addition, college deans and academic administrators are encouraged to schedule Summer Session classes in as few buildings as possible. This also will allow Facilities & Services to substantially reduce air conditioning needs in buildings where use is minimized in the summer.

ENERGY CONSIDERATIONS IN FUTURE FACILITIES (Including Remodeling and Renovations)

- A. Energy and related impacts will be a decision factor in planning for and managing campus growth, remodeling, and development.

- B. In accordance with the *UIUC Facilities Standards*, future new construction, remodeling, and renovation projects of \$5 million or greater shall be LEED® (Leadership in Energy and Environmental Design) Silver Certified. New construction, remodeling, and renovations less than \$5 million shall comply with the *UIUC Facilities Standards*, and the LEED Silver requirements to the greatest extent practicable.