

Missouri State University Energy Program

Purpose

Missouri State University is committed to an effective energy management, conservation, efficiency, and sustainability. The Energy Program is intended to meet the following goals:

- Increase and maintain overall campus efficiency, measured as energy per square foot
- Minimize greenhouse gas emissions.
- Identify, prioritize, and implement energy, fuel, and water conservation and efficiency opportunities
- Promote campus-wide energy awareness education
- Cultivate a positive, sustainable impact

The program will be reviewed and updated periodically by the Office of Energy Management as public awareness, management techniques and technologies change.

Lighting

Faculty, staff and students are encouraged to make every effort to reduce the amount of energy associated with lighting in all University facilities.

All lighting, except that which is required for security purposes and defined campus aesthetic, should be turned off when buildings and facilities are unoccupied. Lighting systems designed for safety and aesthetic should be designed as energy efficient as possible.

Faculty and staff working in unoccupied spaces are responsible for turning lights off after work is complete.

Indoor lighting should be reduced in number and/or wattage, wherever possible, to provide for the minimum but adequate lighting levels consistent with the needs of instructional programs and state mandated standards for the efficient and effective use of the University space. Existing incandescent lamps for general purpose lighting should be phased out and future incandescent lamps should not be allowed unless exempted for very limited and specialized tasks. LED and occupancy sensors should always be considered for new lighting systems.

It is recommended that outdoor lighting on building exteriors and campus grounds be maintained at levels necessary to provide security and safety to promote confidence within the campus community. Good energy management can be observed within this guideline. LED, photo cells, and lighting control systems should always be considered.

Purely decorative lighting for architectural purposes should be evaluated for long-term sustainability and operational burden. In general, decorative lighting should be reviewed by the appropriate major administrator.

The use of motion activated light controls should be increased as funding allows.

Artificial lighting is recommended to be used only when natural light is insufficient to perform required function, or where the safety of the campus community is compromised.

Interior environment

Every effort will be made to maintain the occupied temperature in all University facilities at a range of 70-75 degrees. This excludes areas that currently are not conditioned and areas with special environmental needs.

The temperature during low occupancy or unoccupied periods in all University facilities will be allowed to cool down to 60 degrees in the winter and warm up to 80 degrees in the summer. This excludes areas that currently are not conditioned and areas with special environmental needs.

Faculty, staff and students with manual thermostats should operate the equipment so that the least amount of energy is consumed. The operation of the HVAC system should be turned off or adjusted with temperature set-backs anytime the campus is closed for extended periods of time such as Spring, Fall, holiday breaks and three day weekends.

Portable electric heaters and fans are discouraged. Temperature issues should be resolved through Facilities Management; submit a work order via <http://physicalplant.missouristate.edu/> or call Work Management at 836-8400 for those areas not properly responding to expected temperatures.

In all climate-controlled areas, supply and return air vents and cabinet unit heaters must be unobstructed at all times.

All windows in buildings that are climate-controlled are recommended to be kept closed and as secure as possible to prevent loss of heated or cooled air.

Computers

Computer power management software can be enabled to minimize the operation and consumption of electricity when computers are not in use.

Computers purchased with University funds are preferred to be ENERGY STAR certified unless suitable justifications are approved by the appropriate budget executive. Energy saving features shall be enabled.

Students are encouraged to turn off and unplug gaming consoles when not in use.

Office Equipment

All powered office equipment should be turned off when not in use. Items such as copiers, printers, calculators, shredders, etc. should be turned off at the end of the work day.

It is recommended that office equipment quantities be reduced through consolidation to central locations for shared use whenever possible.

Office equipment purchased with University funds is preferred to be ENERGY STAR labeled.

Appliances

Non-University provided appliances (such as coffee makers, refrigerators, freezers, microwaves, toasters, lamps, televisions, etc.) may only be used if approved by the appropriate major administrator in charge of the area.

The quantities of University purchased appliances should be reduced through consolidation to central locations for shared use whenever possible.

All new or replacement appliances purchased with University funds are recommended to be ENERGY STAR labeled unless specifically approved. Exceptions are acceptable if there are no ENERGY STAR rated appliances manufactured that meet the user's needs.

All appliances can be turned off when not in use, unless it is detrimental to do so (for example a refrigerator or freezer).

Students are encouraged to bring only certified ENERGY STAR appliances to campus.

Fume Hoods

Fume hood sashes should be closed when not being accessed to minimize energy use and provide improved lab safety.

Fume hoods that will not be used for a long period of time should be brought to the attention of Facilities Management for shutdown (submit a work order via <http://physicalplant.missouristate.edu/> or call Work Management at 836-8400).

Energy Management Strategies

Install/maintain accurate sub-meters for each utility for each individual facility wherever possible.

Increase the use of solar photovoltaic, solar thermal, geothermal and other renewable energy resources.

Convert energy-consuming systems to cleaner more efficient fuel sources when possible and practical such as converting from fuel oil to natural gas or from natural gas to solar thermal.

Act on all validated energy conservation/efficiency projects having an expected return on investment of 2 years or less.

Continue to seek appropriate grants from federal, state or local sources for energy conservation projects.

Transportation Strategies

Increase the use of alternative fuels in University-owned vehicles such as bio-fuel, hybrid electric, photovoltaic, compressed natural gas or total electric vehicles.

Fleet vehicles should not be left idling if there is no immediate intent to drive the vehicle.

The University encourages students, staff and faculty to reduce the use of motorized vehicles to the minimum around campus. Some of the alternatives may include walking, bicycling and/or using public transportation such as the MSU shuttle.

Water Management Strategies

The campus will take every necessary step to conserve water resources, including such steps as installing controls to optimize irrigation water, reducing water usage in restrooms and showers and promoting the use of reclaimed water.

The use of decorative fountains will be based on campus schedule and weather.

In the event of a declaration of drought, MSU will cooperate with the state, city, and county governments to the greatest extent possible to effect additional water conservation. Refer to “Water Conservation Plan” website <http://www.missouristate.edu/facilities/141319.htm> .

All new or replacement toilets, urinals, showerheads, faucets and, irrigation controllers purchased with University funds are recommended to be WaterSense (EPA Partnership Program) certified. Exceptions are authorized if there are no WaterSense-rated equipment manufactured that meet the user’s needs.

HVAC Scheduling

Scheduling of building and/or facility usage will be optimized consistent with the approved academic and non-academic programs (scheduled through “25 Live”) to reduce the number of buildings operating at partial or low occupancy. To the extent possible, academic and non-academic programs will be consolidated in a manner to achieve the highest building utilization. Further, the scheduling of buildings will be implemented in a manner to promote individual building air conditioning shutdown to the greatest extent possible during the weekend and other holiday periods. The Energy Manager will make all attempts to change or update building operating schedules to match the changes in the academic programs on a continuing basis.

During summer months, evenings and weekends every effort must be made to consolidate academic classes and hosted events to fewer designated buildings.

Limit Summer On-Peak Operating Hours

Utility summer peak operating hours are from Noon-6:00 pm. During this period, the University sets its electric peak demand. Avoiding unnecessary consumption during this time is economically advantageous and allows us to manage the system more efficiently. Examples include:

- Securing common area and lobby lights where accessible

- Securing lights and properly adjust thermostats if a room is unoccupied
- Shut the windows, close the blinds, and unplug appliances

New Construction & Major Renovation

All new construction and renovation shall be in accordance with University policies as well as Planning Design & Construction standards.

The department of Planning, Design & Construction shall incorporate applicable, responsible planning, design and construction practices into each project that:

- Create a safe, healthy and comfortable environment
- Conserve and use the energy in an efficient way
- Conserve water
- Reduce construct waste
- Provide site sensitive development
- Utilize daylighting within facilities
- Select materials responsibility
- Optimize indoor air quality

Season changes

It is difficult to present a simple description of the seasonal temperature switchover policy because of the variety of buildings and building HVAC systems. When determining the exact switchover date for each building, Facilities Management considers prevailing weather patterns, the building's HVAC system, the system controls, and building usage. However, since the spring and fall temperatures can be extremely variable, even the best HVAC system can be put to the test in these conditions. Unfortunately, a building's internal temperatures may vary by as much as 15 degrees on a temporary basis during these unpredictable seasons.

Additional tasks staff, faculty and students can do to save energy

- Individuals adjacent to windows with blinds should open the blinds during the day for the extra light unless there is direct sunlight that must be controlled due to glare or excessive solar gain.

- Dress appropriately for the weather and have additional clothing available in case you are too cold/hot in your space.
- Whenever possible, take the stairs instead of the elevator.
- Minimize water use.
- Consider carpooling, walking, riding a bus or cycling.

Exemptions to this policy include, but are not limited to, maintaining laboratory plants or animal life, operation of data processing or other equipment which is temperature sensitive, storage of food or other perishables, preservation of archives, books, art works or specimens. Any comments to this policy should be directed to the Energy Management Office, energymanagement@missouristate.edu