

Motels

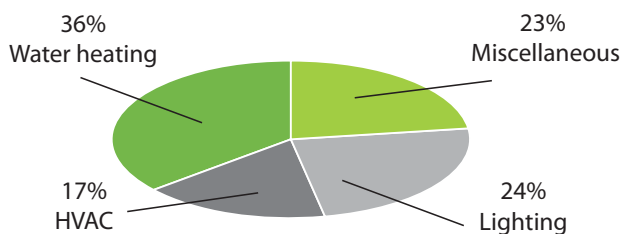
The table to the right shows the breakdown of the energy use in a typical motel. The miscellaneous category includes office machines, vending machines and laundry.

The best way for motels to save is to concentrate on energy efficiency in three key areas: lighting, water heating, and effective control of the heating and cooling equipment.

Water Heating

The three best ways to reduce water heating costs are to keep water temperatures as low as reasonable, to reduce the amount of hot water used, and to reduce the amount of heat lost from the pipes. Here are key steps to accomplish those goals:

- Check toilets, faucets and showerheads for water leaks and repair immediately.
- Install low-flow shower heads (rated at 2 1/2 to 3 gallons per minute).
- Operate laundry equipment with full loads only.
- Maintain hot water for room use at 120°F or less. If hotter water is needed for laundry or dish washing, a supplementary storage water heater should be used to raise the temperature. Avoid using booster heaters because these units have high loads and may increase the motel's peak demand charge.
- Insulate all hot water pipes.
- If you have a constant circulating hot water system, consider installing a two-speed pump and flow switch in the cold water inlet to the water heater. In a constant circulating system, more than half of the energy used is consumed when no hot water is being used in order to keep the water warm in the pipes. By installing a two-



Energy usage in a typical motel

speed pump and flow switch in the cold water inlet to the water heater, you conserve energy. When no hot water is being used, the pump runs at slow speed, or it may not run at all if the system loops are short enough. When hot water is being used, then the flow switch will turn the pump to high speed. This step alone can reduce your water heating energy use by up to 30%.

- Inspect and service gas boilers and water heaters twice a year.

Lighting

Motels feature three major light sources whose efficiency should be maximized to save the most money. The first source is the parking lot lighting. New, high efficiency metal halide lights can save 20% or more on energy use. Fluorescent lights, such as the four-foot fixtures that are typically used in hallways and offices, have energy efficient options that will reduce energy use by up to 40% without affecting lighting levels. Finally, incandescent bulbs that are typically found in guest rooms should be replaced with compact fluorescent lights (CFLs), which use two-thirds less energy and last 5-7 years.

Take these key steps:

- Replace all guest room incandescent lights with CFLs that produce the same light output.

- Install small LED night lights in guest rooms. This may keep lodgers from leaving bathroom lights on at night. Taking this step will drop energy use at night from roughly 60 to 100 watts per bulb down to 2 watts or less.
- Replace older fluorescent light bulbs and ballasts with newer, more efficient equipment. For example, replacing the four lamps and two ballasts in old ceiling fixtures with four new lamps and four-lamp electronic ballasts will reduce energy used by each fixture from 156 watts to 98 watts and provide the same amount or more illumination.
- Install motion sensors in closets and storage rooms to make sure lights are turned off when the rooms are not being used.
- If you use a time clock to control outside lights, use one that has a backup, either with a battery or an internal spring, to carry it through power outages.
- As ballasts burn out, replace metal halide parking lot lights with new technology pulse start metal halide lamps and compatible ballasts. A 320-watt pulse start fixture will produce as much light as a 400-watt standard fixture.
- Consider installing energy management systems for controlling temperature, humidity and time-of-day use for meeting rooms, guest rooms and public areas. New systems are very simple and use a thermostat with an occupancy sensor and a control box on the through-the wall unit.
- Set thermostats in public areas to desired temperatures and enclose them with locking covers.
- After cleaning, set guest room thermostats to a moderate temperature. Many times it is more cost effective overall to leave the units running instead of turning them completely off. During the winter, leave the unit on heating at a low temperature, particularly if using the newer heat pumps made for motel rooms.
- For heater efficiency, perform scheduled maintenance on all HVAC equipment. Keep the filters and the coils clean.
- Replace damaged weather-stripping on doors.
- Wire guest rooms and smaller kitchen exhaust fans with light circuits so the fan will not operate when the light is off and the area is unoccupied.

Heating, Ventilation and Air Conditioning (HVAC) Systems

Guest rooms are where most heating and air conditioning dollars are spent. Controls in the rooms can reduce usage when the room is empty. Replacing, instead of repairing, old HVAC units can increase the efficiency of the heating and cooling system. Good maintenance of the units will also improve their efficiency.

- If a room's HVAC unit fails, consider replacing it instead of repairing it. New, energy efficient heat pumps can be as much as 50% more efficient than older units. Look for seasonal energy efficiency ratings of 13 or higher. Kentucky is a humid state, so units that are made for extra dehumidification are preferred.
- Shade south and west oriented windows on the outside with awnings, landscaping, reflective films and/or screens.
- Keep doors and windows closed when not in use.

Other considerations

- Turn off all office machines and computers that are not needed at night.
- Put sensors on soft drink vending machines that will reduce their energy use when there is little traffic. If vending machines are in well lit areas, remove lights in the machines that are not needed to display the product for sale.