

Controlling Energy Costs in Lodging Businesses

FACT SHEET

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Every lodging business wants happy customers, 24 hours a day. However, accommodating guests and meeting their needs presents multiple cost-related challenges. For example, hotels, motels and inns consume a large amount of energy to ensure guest comfort levels.

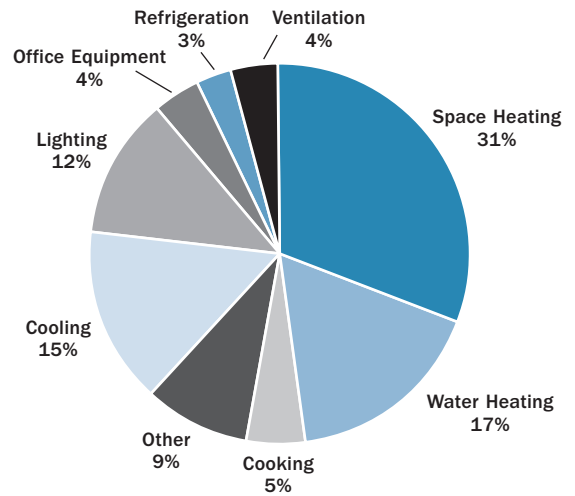
The chart at right shows a typical breakdown of energy use in the lodging business. Lodging businesses use the largest percentage of consumed energy to meet space heating needs. This usage is closely followed by water heating, space cooling and lighting.

At the end of 2005, almost 1,900 hotel and lodging businesses operated in Wisconsin, offering nearly 80,000 room or suite units. The industry average occupancy rate was 56 percent. Each of these businesses can reduce operating costs by managing their energy use more effectively.

Lodging facility managers know that their buildings use a great deal of energy, but they may not be aware that they can control this energy use and not compromise guest comfort levels. The first step managers should take: initiate an energy management plan. This plan will help a facility manager assess current energy use, learn to control this use and its associated costs, and plan improvements to reduce energy consumption. An energy efficiency management plan offers three important benefits: it will help reduce energy use and decrease maintenance costs while maintaining customer satisfaction and worker productivity.

Implementing energy efficiency projects is often simple and non-intrusive. These activities can coincide with other planned improvements to enhance the appearance or functionality of a facility. Focus on Energy can assist facility managers during all phases of initiating an energy management plan that will be easy, practical and cost effective.

SITE ENERGY USE IN LODGING BUSINESSES



Source: Energy Information Administration
1999 Commercial Building Energy Consumption Survey

An energy management plan allows managers to assess their facility's energy use and compare the results to an industry benchmark. This initial step offers a snapshot of a facility's energy efficiency, when compared with industry averages. The table below highlights some energy benchmarks for various types of lodging facilities.

Focus on Energy has several free benchmarking tools available, including Smart Strategies for Hotels, benchmarking worksheets and Portfolio Manager from ENERGY STAR[®]. The Portfolio Manager allows facility managers to track energy use and compare their rating to other buildings on a national level.

Armed with these comparisons, a facility manager will be ready to take the next step and partner with an Energy Advisor from Focus on Energy's Hospitality Team to identify energy efficiency opportunities for improvement and cost savings. Focus on Energy has identified four key areas to target; each is discussed on the back.

ANNUAL ENERGY USE			
HOTEL TYPE	TOTAL BTU / YR	ELECTRIC KWH / YR	NATURAL GAS THERMS / YR
Luxury/upscale	136407/ft ₂	19.2/ft ₂	0.68/ft ₂
Mid-scale/no food and beverage	37,300,000/room	7,342/room	133/room
Economy/budget	33,400,000/room	6,788/room	149/room

LIGHTING

GUEST ROOM LIGHTING

Hotel organizations often set standards for minimum light levels in table, floor and wall light fixtures in their guest rooms, typically based on using wattage associated with incandescent light bulbs (also called lamps by lighting professionals). Instead of putting an incandescent bulb in each fixture, try a much lower wattage compact fluorescent unit. A compact fluorescent lamp (CFL) is capable of producing approximately four times the amount of light per watt, when compared with an incandescent unit. To find the appropriate compact fluorescent wattage for a specific application, compare the lumen output for the incandescent and compact fluorescent units, as identified by the manufacturers. Typically you can divide the incandescent wattage by four to get the approximate compact fluorescent wattage. The replacement for a 60W incandescent would be approximately a 15 watt CFL.

INCANDESCENT WATTAGE	TYPICAL LUMEN OUTPUT	COMPACT FLUORESCENT WATTAGE*
40W	>450	9W TO 11W
60W	>800	13W TO 15W
75W	>1100	18W TO 20W
100W	>1600	23W TO 27W
150W	>2600	32W TO 42W

*Approximate – verify actual lumen output before purchase.

Another way to save energy and money is to encourage your housekeeping team to open the shades and use daylight when cleaning rooms, instead of turning on the guest room lights. Also, they should be encouraged to turn off all lights left on by guests. If some lights must be left on, select one strategic light, not several units.

COMMON AREA LIGHTING

Many opportunities exist to reduce energy use in common area lighting. You can replace incandescent fixtures with compact fluorescent fixtures (up to 75 percent savings); change linear fluorescent fixtures from T12 to high performance T8 (approximately 40 percent savings), install occupancy sensors in restrooms and conference rooms and install daylight sensors to turn off lights in areas that are adequately lit by the sun during daylight hours. Be sure that exterior lighting controls are functioning properly to prevent outdoor lights from burning during daylight hours.

GUEST ROOM MANAGEMENT CONTROLS

Average occupancy rates indicate that rooms are often conditioned when unoccupied. Rooms that are unoccupied or vacant provide a great opportunity for savings. Guest room management controls work based on occupancy sensors mounted in the room. The sensors are built into individual room thermostats, which can be triggered by a keycard or operated from the front desk to allow setback when the space is unoccupied. Energy savings are estimated at approximately \$135/room annually (1800kWh) for electrically heated and cooled spaces (PTAC units). Many systems control only the heating and cooling, but some systems also control the lighting and other electronics in the room.

WATER HEATING

You can achieve the greatest efficiency savings by replacing electric water heating with natural gas units and insulating all hot water pipes to maximize efficiency. Also, when remodeling or upgrading a facility, you should install high efficiency water heating systems (>90 percent efficient) and specify high efficiency for replacement upon failure.

Guest Rooms—High pressure, low flow showerheads and aerators (1.75 gallons/minute replacing 2.5 gpm) installed in guest rooms can save approximately 1400 gallons of water per year. Also, make sure that leaking faucets are repaired immediately to prevent loss of heated water.

Food & Beverage—Replace electric booster heaters on dishwashers with natural gas booster heaters and replace pre-rinse sprayers with high pressure, low flow (1.6 gallons/minute) pre-rinse sprayers.

Laundry—Converting to an ozone-based laundry system can reduce energy consumption in laundry operations by as much as 45 percent. The systems contain generators specifically designed to create concentrations of ozone, which is a strong disinfectant and oxidizer. When injected into your laundry system's cold water, you will eliminate the majority, if not all, of the need for hot water. Additional benefits of implementing this process include fewer chemicals, reduced water use, fewer rinse cycles and shorter drying times. Proper set up of ozone systems is important for safety reasons and to maximize both the energy savings and ozone effectiveness.

POOLS

Lodging facilities should operate pools within American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE) recommended parameters within allowed codes to maximize comfort and structural durability while minimizing energy costs. Minimizing evaporation is the key. If you turn off any special water park features (waterfalls, slides, sprayers, sprinkler etc.) when the area is unoccupied, you will reduce evaporation as well as energy consumption due to pumping costs. To reduce evaporation and retain heat in pools, maintain humidity at 50 percent to 60 percent and keep space temperature 2 (degree) to 4° above the water temperature. You should consider installing pool covers, especially on spas. Keep the water temperature between 80° and 85° for pleasure swimming, and 97° to 102° for whirlpool/spa. Generally the rule is: the higher the activity, the lower the temperature needed. Focus on Energy can teach you about additional energy saving opportunities in your pools and spas, such as energy efficient pool heaters, heat recovery on ventilation systems and variable speed drives on pumps and fans.

Solar heating—Use the sun to heat your pool or spa. The largest single application of solar heating in the world is to warm water for pools. It is less expensive to heat a pool with solar energy than with any other method. In fact, solar water heating systems often provide a positive cash flow immediately. Please refer to the Renewables Program fact sheet entitled, "Sunshines on the Hospitality Industry," for more information on solar heating.

FOR MORE INFORMATION

If you're interested in learning more about energy efficiency opportunities in the lodging business, call Focus on Energy at 800-762-7077 and ask to speak with an Energy Advisor on the Hospitality Team or visit our Web site at www.focusonenergy.com.