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Energy Savings Tips for Small Businesses: Lodging

The U.S.' 47,000 hotels and motels spend about 6% of their operating costs on energy each year. The varied nature of the physical facilities and activities that they host can make energy management especially challenging. Whether the facility is a large convention hotel, part of a national chain, or a small inn or motel, it is important that you tailor your energy plan for your business' individual needs. The opportunities for enhanced guest comfort, longer equipment life, lower operating costs, and an improved corporate image make pursuing energy efficiency worthwhile.



According to the U.S. Energy Information Administration, hotels and motels generally use the most electricity for lighting, followed by cooling. This document will help you target energy use in these areas. However, before you fine-tune your energy program, remember to first use the ENERGY STAR Small Business Action Workbook as a resource to help you make simple no- and low-cost changes that can affect your bottom line energy consumption. This document will help you take your energy program one step further by providing additional guidance tailored for hotels and motels that includes:

- How to profile your energy use
- Tips that can help you save energy and money
- Where to find hotel- and motel-specific, online resources.

PROFILING YOUR ENERGY USE

If you own or operate a hotel, motel, bed and breakfast, or guesthouse, you face special challenges regarding energy management. Hotels and motels operate 24 hours a day, hosting guests and offering various services and amenities. Guest rooms, public lobbies, banquet facilities and restaurants, lounges, offices, retail outlets, and swimming pools occupy the building or multiple buildings. Ice machines, vending machines, and game rooms are often scattered throughout the facilities. Laundries and kitchens are typically located on-site. The variety of services and amenities provided, and the need to operate around the clock mean that hotels and motels present abundant opportunities for energy savings.



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ENERGY STAR partners in the hospitality industry have greatly reduced their expenditures on energy through measures such as lighting upgrades in guest rooms, lobbies, and hallways; occupancy-based guest-room energy controls; and the installation of energy-efficient water heating equipment, while still providing benefits for hotel guests, owners, operators, and shareholders.

Hotel and motel buildings may use more or less energy for many reasons, including variable equipment efficiency and energy management practices, as well as variations in climate and business activities. Business activity and climate are often correlated with energy consumption. For example, hotels that have more workers per square foot, more commercial refrigeration units per square foot, and/or experience more cooling degree days (CDD) use more energy, on average. For other ENERGY STAR hospitality resources, visit the *ENERGY STAR hospitality resources homepage*; this page also highlights several success stories on industry leaders in sustainability initiatives.

TIPS FOR ENERGY SAVING AT YOUR HOTEL

Another resource you may want to consider is the *ENERGY STAR Building Upgrade Manual*. This manual is a comprehensive guide to energy efficiency upgrades presented in an easy-to-understand framework. Chapter 12 of that manual provides resources and assistance that can help your hotel or motel achieve exemplary energy-performance goals.

Lighting

Lighting represents almost a quarter of all electricity consumed in a typical hotel, not including its effect on cooling loads. Lighting retrofits can reduce lighting electricity use by 50 percent or more, depending on the starting point, and cut cooling energy requirements by 10 to 20 percent as well. Here are a few basic strategies to make your lodging facilities more energy efficient:

- **Install timers** on bathroom heat lamps and consider connecting bathroom exhaust fans to light switches to reduce excessive operation.
- **Replace light bulbs with more efficient ones.**
- **Use Daylighting.** Natural daylight has been shown to improve a hotel's indoor environment while reducing energy use and peak demand. Whenever possible, any lighting renovation should start by using daylighting as much as possible and reducing electric lighting accordingly.
- **Update lighting with ENERGY STAR certified CFL and LED bulbs.** In back-room areas such as kitchens and office space, incandescent and T12 fluorescent lamps can be replaced with CFLs or LEDs and high-performance T8 lamps and electronic ballasts, a combination that can reduce lighting energy consumption by 35 percent. In guest rooms, CFLs and LEDs are becoming the standard for table, floor, and reading lamps, and in recessed and vanity lighting in the bathroom.
- **Install occupancy sensors.** Occupancy sensors detect the motion of room occupants, turning off lights in unoccupied areas and turning them back on when movement is detected. Occupancy sensors save energy and also help to reduce maintenance costs. Turning fluorescents off for 12



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hours each day can extend their expected calendar life by 75 percent, to nearly seven years. In large restrooms, ceiling-mounted ultrasonic occupancy sensors detect occupants around partitions and corners. For hallways, a recommended strategy is to use a combination of scheduled lighting and dimming plus occupancy-sensor controls after hours. Guests may not like a totally darkened hallway, but dimming lights in unoccupied hallways and stairwells and then turning them up to full brightness when someone enters is a sensible approach. Occupancy sensors are also appropriate for meeting rooms and back rooms.

Heating and Cooling

Heating and cooling represent almost 40 percent of the electricity and more than half of the natural gas used by hotels and motels. Many hotels heat and cool rooms regardless of whether they are occupied, despite studies having shown that hotel rooms are unoccupied for 12 hours a day on average.

- **Link your energy management system (EMS)**, reservation system, and automated check-out system together to keep an unsold room ventilated but with minimal heating or cooling. A sold room can be heated or cooled to a comfortable temperature an hour before a guest's scheduled arrival. Once the guests arrive in the room, they can then adjust the temperature as they like until they check out, when the HVAC system returns to the unsold mode. An EMS can enhance guest comfort while reducing energy costs by 35 to 45 percent, for a return on investment of 50 to 75 percent.
- **Seal cracks** around windows, doors, and through-the-wall or window type HVAC units with caulk and weather-strip doors and operable windows.
- **Change your air filter regularly.** Check your filter every month, especially during heavy use months (winter and summer). If the filter looks dirty after a month, change it. At a minimum, change the filter every 3 months. A dirty filter will slow down air flow and make the system work harder to keep you warm or cool—wasting energy.
- **Tune up your HVAC equipment yearly.** Just as a tune-up for your car can improve your gas mileage, a yearly tune-up of your heating and cooling system can improve efficiency and comfort.
- **During periods of low occupancy**, close down entire wings or floors and reduce lighting and HVAC systems in these areas.
- **Assign guests to adjoining rooms** to allow the heating and cooling of occupied rooms to act as a buffer or insulator.

Housekeeping, Maintenance, and Management

- **Housekeepers can turn off** guest room lights, televisions, heating or cooling, and radios when rooms are unoccupied.
- **Reduce heat gain in the summer and heat loss in the winter** by closing window draperies and shades when exiting guest rooms.



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- **Educate your housekeeping staff to use natural lighting** when making up and cleaning guest rooms, limiting their use of artificial light.
- **Repair leaking water fixtures immediately.**
- **Always buy ENERGY STAR certified products for your business.** The ENERGY STAR mark indicates the most efficient computers, printers, copiers, televisions, windows, thermostats, ceiling fans, and other appliances and equipment.
- **Use power management features:** place computers (CPU, hard drive, etc.) into a low-power "sleep mode" after a designated period of inactivity. You can also purchase a commercial software power management package.



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RESOURCES AND LINKS

This section includes online resources that can help your business learn more about hotel-specific energy use and energy efficiency.

- ENERGY STAR Hospitality Resources Home Page:
www.energystar.gov/buildings/sector-specific-resources/hospitality-resources
- ENERGY STAR DataTrends: Energy Use in Hotels:
www.energystar.gov/sites/default/files/buildings/tools/DataTrends_Hotel.pdf
- ENERGY STAR Building Upgrade Manual Chapter 12: Hotels and Motels:
www.energystar.gov/buildings/tools-and-resources/energy-star-building-upgrade-manual-chapter-12-hotels-and-motels
- ENERGY STAR Certified Products: <http://www.energystar.gov/products/certified-products>
- ENERGY STAR Computers for Consumers:
www.energystar.gov/products/certified-products/detail/computers
- ENERGY STAR: Activating Power Management Software:
www.energystar.gov/index.cfm?c=power_mgt.pr_power_mgt_comm_packages
- ENERGY STAR Guide to Heating and Cooling:
http://www.energystar.gov/ia/partners/publications/pubdocs/HeatingCoolingGuide%20FINAL_9-4-09.pdf?0cbe-cc73
- WaterSense Hotel Challenge:
<http://www.epa.gov/watersense/commercial/challenge.html>
- SBA Information on Energy Efficiency and Lodging:
<http://www.sba.gov/content/energy-efficiency-lodging>
- International Council on Hotel, Restaurant, and Institutional Education: chrie.org
- American Hotel & Lodging Association's Green Resource Center: www.ahla.com/green.aspx
- Green Globe: <http://www.greenglobe.com>
- "Green" Hotels Association: <http://www.greenhotels.com>
- Green Restaurant Association: <http://www.dinegreen.com>
- Green Seal: <http://www.greenseal.org>
- International Association of Assembly Managers Inc.: <http://www.iaam.org>