

Environmental issues
and energy saving
methods
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Most of the energy used by hotels is used for space and lighting in the whole hotel. Normally, space heating represent the majority use of natural gas in hotels and motels. However, each facility's energy profile is different, so these charts are not representative of all lodging facilities. Hotel and motel energy use will also vary depending on the types of amenities available.

Figure 12. 1: Electric and natural gas end-use profile for hotels and motels
The median hotel or motel uses approximately 70, 000 Btu per square foot (ft²) from all energy sources. However, many lodging facilities are significantly more energy-intensive than that. Figure 12. 2: Distribution of energy intensity in hotels and motels
Hotels and resorts use a big quantity of natural resources (e. g., water, electricity) in providing luxurious accommodations for guests. These practices involve risks and environmental issues, on which the tourism industry depend on." Energy management has been an important part in the environmental protection and welfare of human being. Due to the unprecedented rise in prices of some sources of energy use and their non-renewable characteristic (UK uses 95% of the energy source come from non renewable energy), therefore there is a need to preserve, reduce and to find alternative source of energy" (Energy Efficient Office, 1994; Chan & Lam, 2002; CHOSE, 2001; Verlag, 2003; Verginis & Wood, 2001). Accommodation manager have to face challengers like reducing energy consumption and still keep in mind that the standard of the hotel remain the same and also when trying to reduce energy its important to stand according to the legislation. The Accommodation manager control a major part of the hotel, these are the area where he operates and control: Floor Department Front Desk Laundry department Public area
The accommodation manager can save energy in the four mainly area in <https://assignbuster.com/environmental-issues-and-energy-saving-methods-environmental-sciences-essay/>

the hotel which are: Lighting: Lights -represent approximately 25% of hotel energy consumption, light consumption can be reduce by: Switched off light and electricity in areas which are not operational and if its low season and there is low occupancy, the same floors can be locked to avoid access and then it will not need lighting and heating. The alternative way to save on energy could also be to fit switches, timers, dimmers and motion detector. By regularly cleaning light fixtures, replacing light tinted lenses with radiant types and using livelier colors on walls will also increase the light efficiency. By changing the old bulbs with new one and which is low energy consumption, this will have a positive effect in the energy costs. One good aspect of these bulbs it's that they have a longer life span than the normal one. Using sensor detectors for lobby lighting, storage area can keep the unnecessary lights switched off when it's not in used. Install photovoltaic lighting, for pathways, water cascades and outdoor areas, Use solar floor lamp in order to reduce the energy in the hotel garden areaKey card technology which switch off energy automatically when guest rooms are vacated, and thus avoid useless consumption of electricity. Daylighting. Natural lighting has been shown to improve a hotel's indoor environment while decreasing energy use and high demand. Whenever possible, any lighting renovation should start by using natural lighting as much as possible and reducing electric lighting. Appropriate day lighting design will not bring too much heat gain, heat loss, glower, or uneven illumination. Natural light when enter the lobbies it can improve lighting quality while reducing energy costs. Hotels have started using clerestories and tubular skylights to deliver day lighting in hallways, lobbies, and guest rooms. Outdoor lighting. For parking lots and outdoor applications, any luminous or mercury vapor

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lighting should be replaced by something more efficient. High-pressure sodium and metal halide are the most regular choices, but fluorescent lighting is often a more efficient. In parking garages, which often use inefficient high-power discharge fixtures, high-efficacy fluorescent fixtures can deliver more even illumination with less fixtures. Fluorescent lamps should be enclosed when used outdoors in cold climates. Induction lamps are another choice—they have a very long life and are a good choice in area which is difficult to get access. LEDs are also becoming a practical option.

Heating, ventilation and air conditioning Heating and cooling characterize almost 30 to 40 percent of the electricity and more than half of the natural gas used by hotels. Many hotels heat and cool rooms regardless of whether they are occupied. Hotels tolerate this waste because their leading worry is guest comfort, not energy use. However, used properly, controls and efficient technologies offer the potential for as much as 50 percent energy savings without compromising guest comfort. Geothermal heating and cooling can be a good choice, especially if there is a nearby body of water for a heat source or heat sink. This is also a good opportunity for hotels to benefit from the measures taken in prior stages to reduce loads and losses during the facility. Improve savings from all structure imperfections by right-sizing heating and cooling equipment to meet actual needs, rather than depend on sizing estimates. Too often this equipment is not appropriate for the surface area of the place, which means the systems rarely operate at his maximum efficiency. Right-sizing offers first-cost savings, as well. Use of Air conditioners (A/C) Put timers and sensors to decrease energy waste. Turn off the A/C when it's cool and also when it's not important Close all the unnecessary openings to avoid air gaps around windows and door Use latest

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equipment for higher energy efficiency rating. Have the units checked yearly. Hotel operators can link their energy management system (EMS), reservation system, and automated check-out system together to keep an unsold room ventilated but with minimal heating or cooling. Efficient ventilation systems. Controlled ventilation is highly recommended in hotels for the following reasons: Air quality: the quantity of fresh air needed depends on room occupancy and the activities within the rooms therefore air regeneration should be adjusted accordingly, Reduction of heat loss: unnecessary ventilation should be avoided in cold conditions because it will result in important heat loss. Need for cooling in hot conditions: over-ventilation may be very useful at mid-season or at night during summer in order to keep the hotel cool and comfortable. Several solutions exist for effective ventilation; the most reliable ones are demand-controlled mechanical system. But these systems are worth seeing only if air penetrations at doors and windows are controlled. Energy saving laundry: put the washing machine close to the warm water tank, if possible, to reduce the heat loss in long pipe runs. Keep the hot-water heater thermostat at 120°F. Each 10°F reduction in water temperature will reduce the cost of washing by up to 13 percent. You can save large amounts of energy in the laundry through preservation of hot water and by using your automatic washers and dryers less often and more efficiently. Wash most clothes in warm or cold water, using cold-water detergents whenever possible; wash in cold. You'll save energy and money. Use hot water only if absolutely necessary. change the washer temperature setting from high to low could reduce a load's energy in half. Fill washers (unless they have a small-load attachment or variable water levels), but do not overload them. In general, washing to its

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maximum load is more effective than washing two small loads. Don't use too much cleansing agent. Follow the instructions how to use the product which is written on the box. Putting excessive detergent makes your machine work harder and use more energy. Do not over-wash clothes. Fragile clothes don't need as long a wash as dirty work clothes. Adopt water saving practices Consider outsourcing laundry cleaning to water efficient commercial facilities. Encourage guests to be more water efficient by reusing towels instead of getting them washed every day Ensure washing machines are only operated when full. Organise staff reviews/training to ensure laundry machines are being operated correctly. Adhere to manufacturer's recommended settings. Regularly check the water level is correct during operation. Discuss potential water efficiency improvements with your chemical supplier. Talk to your staff on a regular basis about potential water saving ideas. Saving WaterThe main areas of water use in the hotel industry are diverse and include amenities, kitchens, food service, laundries, cooling towers, gardens and swimming pools. Water efficiency audits conducted by SA Water have indicated that most hotels are capable of achieving 20% water saving without compromising guests comfort levels. General maintenanceOften leaks go unnoticed due to a lack of focused inspection and difficulties associated with staff reporting. With an established leak identification program and staff education, unnecessary water wastage can be avoided. Common areas for leaks to occur include toilet systems, piping joints, pump seals, hose nozzles, shutoff valves (solenoids and float) and cooling systems. Our General Maintenance, Leaks and Monitoring fact sheet provides detailed information on how to identify and minimise water wastage within your business. Guest RoomsThe majority of water in hotels is used in <https://assignbuster.com/environmental-issues-and-energy-saving-methods-environmental-sciences-essay/>

guest rooms. Guest rooms are therefore an easy target for directed water conservation measures. Aerators or flow restrictors can reduce bathroom taps from 20 litres a minute to 6 litres a minute. In-line flow restrictors can be fitted on classic pillar cock taps or under basin restrictors can be used. Upgrading older cisterns to the most efficient type 4 star rated with 4.5/3 litre dual flush will produce the most significant water savings. Educational material is available from SA Water's Business Sustainability Group.

Encourage guests to be more water and energy efficient by reusing towels instead of getting them laundered every day. Use incentives like discounted dinner vouchers for customers willing to forego daily towel/linen changes. Conduct monthly inspections of the rooms focusing on piping joints, toilets, hand basins and showers. Train staff and cleaners to report leaks directly to maintenance and ensure these leaks are fixed immediately. Review cleaning practices and minimise toilet flushes and water used in the hand basin and shower. Saving Water in Garden Areas Landscape gardens are important to the aesthetic appearance of hotels and are often designed to provide relaxing, recreational environments for guests. Here are some tips to help you save water in the garden: Always ensure that all gardening activities adhere to the latest water restrictions. Detailed information can be sourced from the SA Water website. Install irrigation control systems to better manage your watering regime. Make sure you don't set the timer to over water your garden - and turn it off when there's a likelihood of rain. Install a dripper system and only water during the permitted days/hours. Use mulch to prevent water loss through evaporation and prevent soil erosion. Mulch can also help to smother your weeds. (If you live in a high bushfire risk area, check with the County Fire Service about the best way to use mulch in your <https://assignbuster.com/environmental-issues-and-energy-saving-methods-environmental-sciences-essay/>

garden). Plant indigenous native plants for your area - your local nursery, Trees for Life, the Australian Plants Society or State Flora can help you choose appropriate species. Plant your garden in watering zones (hydrozoning). Plants that require large amounts of water should be planted together. This helps to reduce the amount of water wasted on plants that don't need it. Choose a drought resistant lawn that will cope with our harsh, dry conditions. Don't over water your lawn - train it to use less water by encouraging the roots to grow deeper. Set your mower level higher during summer and let your lawn grow longer. Keeping grass longer shades the soil surface and reduces evaporation loss. Weed! Weeds compete with your plants for water. Don't water during windy weather - the water will blow away from where it's needed most. Regularly check your outdoor taps and hoses for leaks. Leaks normally get worse, so it pays to fix them as soon as possible. Always use a broom or rake to clean paths, paved areas and patios.