ENERGY WISE

SAVING ENERGY with HOME LIGHTING

Are the Lights On?

Lighting is a metaphor for electric service. When the power goes off, we say that the lights went out. Many of us mention lighting first as the reference point to explain the amount of energy we use. However, lighting accounts for only 5% to 20% of typical household energy use in Hawaii, and usually trails water heating, refrigeration, and other end uses in the proportion of energy used. Still, there are many opportunities to have efficient lighting that provides good illumination appropriate for the uses (work, reading, etc.) of the spaces being lighted.

Start with a Good Design

Good building design is always a first step for assuring energy efficiency. In the case of lighting, rooms that are to be occupied and used during the day for work, reading, and other tasks that require ample levels of illumination should have daylighting features. Windows that can be shaded with blinds, curtains, or drapes can control the amount of sunlight into the room, and may lessen the need for artificial lighting during the daytime. Skylights can serve the same function by allowing sunlight into rooms with little or no window exposure. Light colored ceilings, walls, flooring, and furniture can brighten a room and reduce the amount of artificial lighting needed.

Time to Replace the Old Light Bulb

Incandescent bulbs have been around since the early 1900s, and frankly, they are not energy efficient. Most of the electricity (approximately 90%) used by the standard incandescent bulb results in heat, not light. Fluorescent lighting, on the other hand, generates less heat and boasts a lumen/watt factor that is three to four times more efficient than incandescent lighting. When building or renovating a home, rooms that are known or anticipated to require longer hours of lighting should be installed with fluorescent fixtures (T-8 tubes with electronic ballast). Frequently these would include the carport, kitchen, dining room, living room, and hallways.

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Many existing homes were furnished with incandescent lighting. Replace incandescent light bulbs that are used 3+ hours daily with compact fluorescent bulbs (CFB). CFBs will generally last 9 to 12 times longer than the standard bulbs, and use only 25% to 30% of the energy consumed by standard bulbs. Even though CFBs are more expensive to purchase than standard bulbs, they will more than pay for themselves in replacement and energy costs.

Although they are all designed to screw into the standard incandescent bulb socket, CFBs come in different wattages, light output, shapes and sizes. And although they are called "compact", CFBs are still a little longer than the standard bulbs. For this reason, care must be taken to select a CFB that produces the equivalent amount of light as the bulb being replaced, and can fit in the existing light fixture. CFBs can replace bulbs in ceiling, wall, and outdoor fixtures, and in table and floor lamps. CFBs come with electronic or magnetic ballasts. CFBs with electronic ballasts provide instant, flicker-free startups.

Halogen lamps come in small sizes and produce clear bright light that is very effective in bringing out the colors of the objects being lit. For this reason, halogen lamps are frequently used for task lighting or for spotlighting a home's decor. Halogens use about one third less energy than standard incandescent bulbs for equivalent light output, so energy is saved by switching to halogen. However, please be careful -high wattage halogen lamps are very hot when lit, and can present a fire hazard if curtains or other objects come in contact with them.

Controls

Lighting controls have advanced from simple on/off switches to devices that can control individual fixtures in a multi-fixtured room, with dimming, timing, occupancy/light sensing or remote programming capabilities. For most people, having adequate controls to turn on lamps to provide lighting as needed for specific uses within a room is sufficient. Simply put, you save energy whenever you turn off a lamp when lighting is not needed. Don't forget to do so whenever you leave a room.

Task Lighting

Good lighting is essential for work or your children's study areas. Don't try to scrimp in these areas. Even though the ambient room lighting might be lower, you can use a well-placed lamp or fixture to provide the recommended level of task lighting where needed.

Standard Incandescent Bulb (100w) vs. Compact Fluorescent Bulb (27w)

Bulbs Used*		VS		You'll get the same amount of light, but you'll buy and throw away 12 fewer light bulbs...
Energy Costs**	$200	VS	$54	Save $146 in energy cost over the life of the bulb...
Energy Consumed		VS		Use 75% less energy...

*For 10,000 hours of light. That would be a little over five hours a day for five years. **Assuming an energy cost of $.20 per kilowatt-hour

Want more information?

For a more detailed description of energy saving measures, call KIUC's energy specialists at 246-8284 or 246-8282 .

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