

For information and resources about energy-efficient lighting...

U.S. Department of Energy Consumer Energy Information, "Energy Efficient Lighting" at <http://www.eren.doe.gov/erec/factsheets/eelight.html>

U.S. Environmental Protection Agency Consumer Fact Sheets, "High-Efficiency Lighting" at <http://yosemite1.epa.gov/estar/homes.nsf/content/ResFactSheets.htm>

Rocky Mountain Institute, "Home Energy Brief #1, Lighting" at <http://www.rmi.org/sitepages/pid171.php>

Minnesota Department of Commerce Home Energy Guides, "Home Lighting" at <http://www.commerce.state.mn.us/pages/Energy/InfoCenter/pdfs/homlight.pdf>



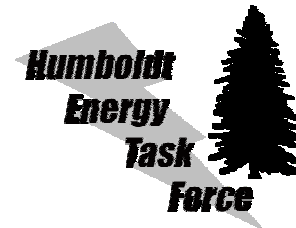
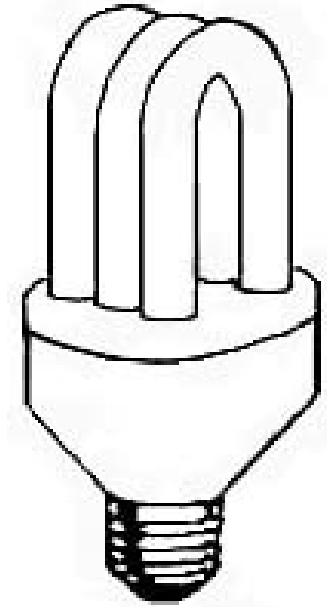
The Humboldt Energy Task Force (HETF) is a coalition of local government agencies working together to provide local energy conservation tools and solutions for Humboldt County. For more information please contact:

- ◆ City of Eureka (707) xxx xxxx
- ◆ City of Arcata (707) xxx xxxx
- ◆ Humboldt Co. (707) xxx xxxx

Humboldt Energy Task Force
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FAST FACTS ABOUT ENERGY-EFFICIENT LIGHTING

Energy Brief # 4



INTRODUCTION

The quantity and quality of light around us determine how well we see, work, and play. Light affects our health, safety, morale, comfort, and productivity. Lighting also directly affects our economy. Technologies developed during the past 10 years can help us cut lighting costs 30–60% while enhancing lighting quality and reducing environmental impacts.

You can save lighting energy through reducing electricity consumed by the light source by lowering lamp wattage in fixtures or reducing the length of time the light source is on by improving lighting control devices.

REDUCE LAMP WATTAGE

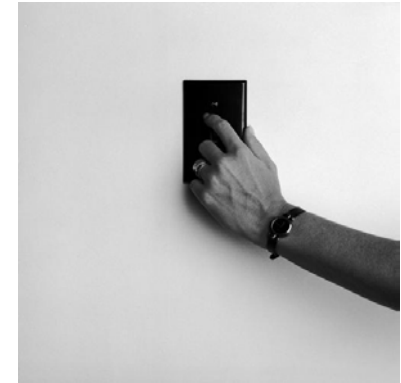
Replace standard incandescent lamps that are used for long periods at a time with *compact fluorescent lamps (CFL)* for substantial energy savings. CFLs are the most significant lighting advance developed for homes in recent years, combining the efficiency of fluorescent lighting with the convenience and popularity of incandescent fixtures. CFLs can replace incandescents that are 3 to 4 times their wattage, saving up to 75% of the initial lighting energy. Although CFLs cost from 10 to 20 times more than comparable incandescent bulbs, they last 10 to 15 times as long. This energy savings and superior longevity make CFLs one of the best energy efficiency investments available.

Replace 300-watt halogen torchieres with CFL torchieres. A 60-watt CFL torchiere will produce 25% more light at an operating temperature that is 500°F cooler than the halogen. The 40 million halogen torchieres used in the United States consume 20 billion kWh annually, 5 times the energy generated by wind turbines and photovoltaics, and they contributed to 189 fires, resulting in 11 deaths, because of their high temperatures.

IMPROVE LIGHTING CONTROL DEVICES

Lighting controls are devices for turning lights on and off or for dimming them.

- *Snap switches*, located in numerous convenient areas, make it easier for people in large, shared spaces to turn off lights in unused areas.
- *Photocells* turn lights on and off in response to natural light levels. Photocells switch outdoor lights on at dusk and off at dawn, for example.
- Mechanical or electronic *time clocks* automatically turn on and off indoor or outdoor lights for security and safety.
- Spring-driven *crank timers* limit lights to short durations where the need for light is brief.
- *Occupancy sensors* activate lights when a person is in the area and then turn off the lights after the person has left. They also offer security advantages over continuous lighting. When lights suddenly come on, they startle intruders and alert residents and neighbors to motion in the area.
- *Dimmers* reduce the wattage and output of incandescent and fluorescent lamps. Dimmers also increase the service life of incandescent lamps significantly. However, dimming incandescent lamps reduces their light output more than their wattage, making incandescent lamps even less efficient as they are dimmed. Dimming fluorescents requires special dimming ballasts and lamp holders, but does not reduce their efficiency.



BENEFITS OF ENERGY-EFFICIENT LIGHTING

- Lower utility bills—Installing high-efficiency lighting in the most used fixtures in a home will reduce lighting energy consumption (and costs) by half.
- Improved comfort—Greater efficiency in lighting translates into less waste heat to be removed from the space by air conditioning equipment.
- Improved safety and security—Energy-efficient outdoor lighting technologies can improve the safety and security of a home. Safety can also be improved by eliminating high-wattage light bulbs that are fire hazards.
- Improved convenience—CFLs last at least 10 times longer than incandescent light bulbs, resulting in fewer lamp replacements. Lighting control devices improve convenience by eliminating the need to manually flip a switch.
- Improved quality—Technological advances in fluorescent lighting have produced fluorescent lamps that are essentially equivalent to incandescent lamps for color quality and instant start.