

# *The Other White Light*



**ENERGY STAR<sup>®</sup>**  
**Compact Fluorescent Lights (CFLs)**

An environmentally friendly alternative  
to incandescent bulbs.



**SMUD**

SACRAMENTO MUNICIPAL UTILITY DISTRICT  
The Power To Do More.<sup>®</sup>

## What is an ENERGY STAR<sup>®</sup> compact fluorescent light (CFL)?

ENERGY STAR CFLs are an energy saving alternative to incandescent light bulbs. The electrical components within the materials that make up a CFL create light without producing the heat of a regular incandescent bulb in which most of the energy is wasted. The ENERGY STAR label was created by the US Environmental Protection Agency (EPA) and the US Department of Energy (DOE) to help consumers identify and purchase energy-efficient products and services. Products that earn the ENERGY STAR label meet or exceed the government standard for energy efficiency.

## What's the difference between an incandescent light bulb and a CFL?

Incandescent light bulbs work by heating a tungsten filament, or wire, until it glows. This is what produces the light you see. Unfortunately, 90% of the energy used to generate that light is wasted as heat, making incandescent bulbs a very inefficient way to light your home. CFLs, on the other hand, create a chemical reaction among gases located inside the glass tube, causing phosphors to illuminate. ENERGY STAR qualified CFLs provide bright, warm light and use up to 70% less energy, produce less heat, and lasts up to 10 times longer.

## How are ENERGY STAR CFLs different from regular fluorescent lights?

Not all CFLs are ENERGY STAR qualified. ENERGY STAR CFLs use an electronic ballast within the metallic screw base. The electronic ballast eliminates the flicker and hum of magnetic ballasts found in some other fluorescent lights.

CFLs that DO NOT have the ENERGY STAR label may have low-quality components that will reduce the life of the bulb. To ensure maximum quality and energy savings, it is important to purchase CFLs with the ENERGY STAR label. ENERGY STAR CFLs are randomly tested to verify that they meet

the manufacturer's declared performance and are also backed by a minimum two-year manufacturer warranty.

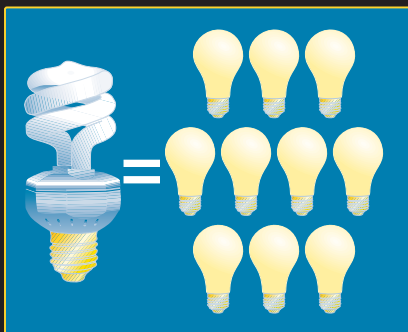
## How will the environment benefit from ENERGY STAR CFLs?

ENERGY STAR CFLs use less energy (up to 70% less than standard incandescent lights), resulting in less fossil fuels being burned, less greenhouse gas released into the air, and less mercury emissions in comparison to incandescent light bulbs. If every American home replaced their 5 most frequently used light fixtures or the bulbs in them with ones that have earned the ENERGY STAR, we would save close to \$8 billion each year in energy costs, and together we would prevent the greenhouse gases equivalent to the emissions from nearly 10 million cars.

## Why are ENERGY STAR CFLs better?

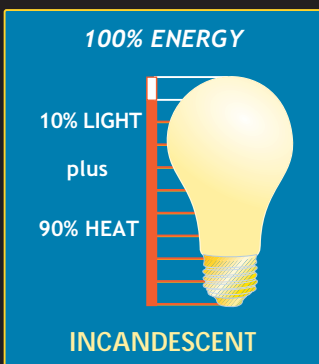
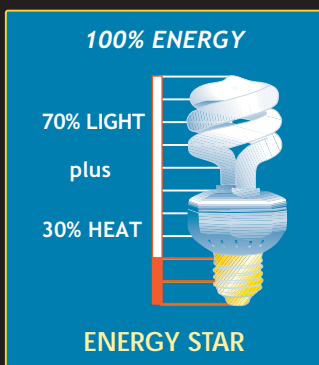
ENERGY STAR CFLs use up to 70% less energy than incandescent bulbs to produce the same amount of light. Replacing just one incandescent bulb with a CFL will save you about \$30 over the lifetime of the bulb.

**They last up to 10 times longer than incandescent bulbs.**



They produce less heat –

*only 30% of a CFL is emitted in heat,*



whereas 90% of the light an incandescent emits is heat.

CFLs are a better environmental alternative to incandescent bulbs. An average power plant will emit 10mg of mercury to produce the electricity to run an incandescent bulb compared to only 2.4mg of mercury to run a CFL for the same time. The net benefit of using the more energy efficient CFL is positive and especially true if the CFL lamp is disposed of properly (see “Recycling” information).

## Where to use

ENERGY STAR qualified CFLs provide the greatest savings in fixtures that are on for a substantial amount of time each day. Install qualified CFLs in fixtures that are used at least 15 minutes at a time or several hours per day. The best fixtures in which to use qualified CFLs in are usually found in the following areas of your home:

family room	dining room	bedrooms
living room	kitchen	outdoors

## How to choose the right light

Steps to help match the right CFL to the right kind of fixture to ensure that it will perform properly and last a long time:

### *Shapes/sizes:*

- CFLs perform best in open fixtures that allow airflow, such as table and floor lamps, wall sconces, pendants, and outdoor fixtures.
- Make sure that the bulb you choose is **ONLY** used in the type of application indicated on the packaging.
- For recessed fixtures, it is better to use a reflector (flood) CFL than a spiral CFL since the design of the reflector evenly distributes the light down to your task area.
- If a light fixture is connected to a dimmer or three-way switch, be sure to look for CFLs that specify use with dimmers or three-way fixtures.

### *Color:*

- Choose a qualified CFL that offers a shade of white light that works best for you. For example, while most CFLs provide warm or soft white light for your home, you could choose a cooler color for task lighting.

**Warm:** *brings out natural color tones, ideal for kitchens, bathrooms, and offices.*

**Cool:** *clean, white light; good for garages and basements.*

**Natural:** *bright light similar to daylight; works well for galleries and stores.*

## Lumens/light output

- To choose the ENERGY STAR qualified CFL with the right amount of light, find a qualified CFL that is labeled as equivalent to the incandescent bulb you are replacing. Light bulb manufacturers include this information right on the product packaging to make it easy for consumers to choose the equivalent bulb. Common terms include "Soft White 60" or "60 Watt Replacement."
- You should also check the lumen rating to find the right CFL. The higher the lumen rating, the greater the light output. Consult the following chart to determine what CFL wattage is best to replace your incandescent light bulb:

### Light Output Equivalency

*To determine which ENERGY STAR-qualified light bulbs will provide the same amount of light as your current incandescent light bulbs, consult the following chart.*

INCANDESCENT LIGHT BULBS	MAXIMUM LIGHT OUTPUT	COMMON ENERGY STAR-QUALIFIED LIGHT BULBS
WATTS	LUMENS	WATTS
40	450	9-13
60	800	13-15
75	1,100	18-25
100	1,600	23-30
150	2,600	30-52



Learn more at [ENERGY STAR.gov](http://ENERGY STAR.gov)

Source: [www.ENERGY STAR.gov](http://www.ENERGY STAR.gov)

## Recycling CFLs

CFLs contain a trace amount of mercury sealed within the glass tubing – an average of 5 milligrams (about one-fifth of that found in the average watch battery, and less than 1/100<sup>th</sup> of the mercury found in an amalgam dental filling). Mercury is an essential component of CFLs and is what allows the bulb to be an efficient light source. No mercury is released when the bulbs are intact, therefore it is important

that the CFL is properly disposed of at the end of its life cycle. California law requires that CFLs are disposed of and recycled properly.

## Where to recycle

### County of Sacramento

North Area Recovery Station  
4450 Roseville Road  
Customer Service 916-875-5555

### City of Sacramento

Call for pick up 916-808-5454  
[www.cityofsacramento.org/utilities/SolidWaste/waste\\_pages/residential\\_battery.html](http://www.cityofsacramento.org/utilities/SolidWaste/waste_pages/residential_battery.html)

South Area -  
Sacramento Recycling and Transfer Station  
8491 Fruitridge Road  
Customer Service 916-379-0500  
[www.sacgreenteam.com/hazardous/residents](http://www.sacgreenteam.com/hazardous/residents)

### City of Folsom

Schedule for pick up  
[www.folsom.ca.us/depts/utilities/hazmat/default.asp](http://www.folsom.ca.us/depts/utilities/hazmat/default.asp)

### Waste Management

Mail Order Recycling website  
[www.ThinkGreenFromHome.com](http://www.ThinkGreenFromHome.com)

ACE hardware	all locations
IKEA®	all locations
OSH	all locations
The Home Depot	all locations

For a complete list of recycling locations visit  
[www.smud.org](http://www.smud.org)

### Information on recycling compact fluorescent lights

[www.smud.org](http://www.smud.org)  
[www.energystar.gov](http://www.energystar.gov)  
[www.earth911.org](http://www.earth911.org)  
[www.epa.gov/bulbrecycling](http://www.epa.gov/bulbrecycling)

## More energy saving options

If you are building a new home or improving your existing one, SMUD has programs and services to help you save money and energy.

Rebates and/or low-interest financing on ENERGY STAR or qualified high efficiency products:

- Aroseal Duct Sealing
- Attic & Wall Insulation
- Central Air Conditioning/Heat Pump (HVAC) systems
- Clothes Washers
- Cool Roofs
- Dishwashers
- Refrigerators
- Room Air Conditioners
- Solar Domestic Water Heaters
- Whole House Fans
- Windows
- Insulated Siding

*For more information, contact SMUD at (888) 742-SMUD (7683) or visit [smud.org/rebates](http://smud.org/rebates).*



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