INNOVATION. PERFORMANCE. SAVINGS.

ENERGY STAR® Makes It Simple.

Five ENERGY STAR qualified light bulbs will save about $150 in electricity costs over their lifetime.

ENERGY STAR® QUALIFIED LIGHT BULBS

2008 PARTNER RESOURCE GUIDE

ENERGY STAR

This Partner Resource Guide is designed to help you promote ENERGY STAR qualified light bulbs. You are invited to use any of the text, charts, or images for promoting ENERGY STAR qualified light bulbs. Contact your D&R account representative for high-resolution images.

- Section I includes the latest consumer messaging on product features and benefits, as well as fun facts and usage tips.
- Section II summarizes the most recent data on ENERGY STAR market share, ENERGY STAR criteria, energy savings, and cost–effectiveness.

Switching from incandescent bulbs to ENERGY STAR qualified light bulbs is the easiest step consumers can take to save on energy bills and help the environment. An ENERGY STAR qualified compact fluorescent light bulb (CFL) will save about $30 over its lifetime and pay for itself in about 5 months. ENERGY STAR qualified CFLs use 75 percent less energy and last about 10 times longer than incandescent bulbs.

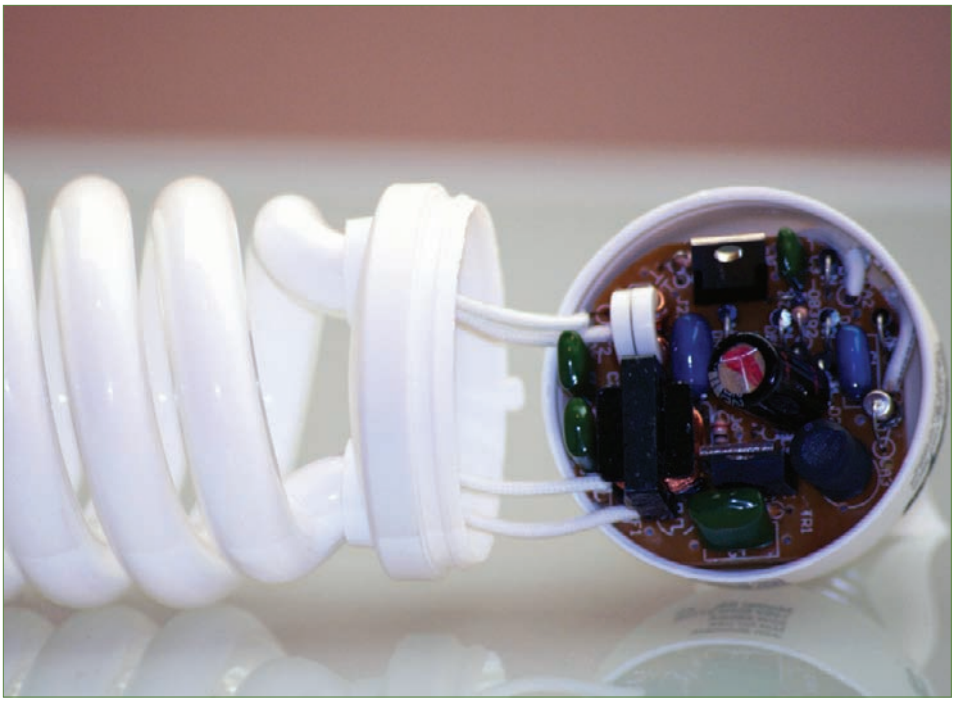
CFLs have come a long way in the last 20 years. Today's ENERGY STAR qualified CFLs are small, efficient, produce better light, and are available in a variety of sizes, shapes and colors. There are even special CFLs that work on dimmers or three-way switches.

LEARN MORE AT energystar.gov

ENERGY STAR is a government-backed program that helps consumers identify the most energy-efficient products.

DID YOU KNOW?

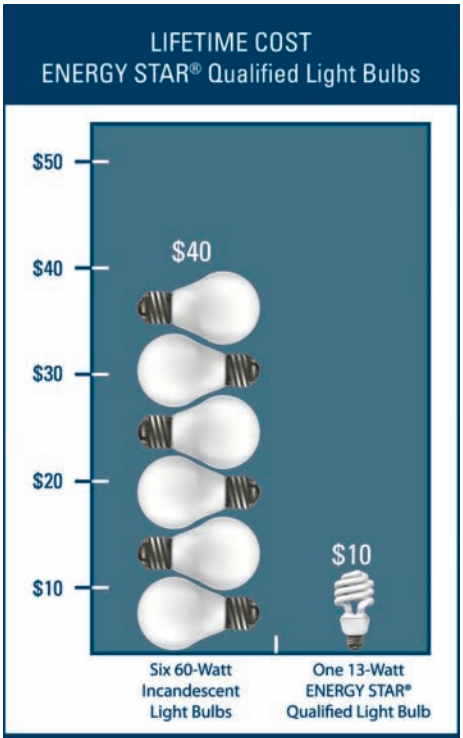
Incandescent light bulbs were invented by Thomas Edison in 1879, and the basic design has not changed much since. These bulbs are very inefficient, converting only 10 percent of the electricity consumed into visible light. The remaining 90 percent of the electricity is actually released as heat!



Take a look! ENERGY STAR qualified light bulbs use sophisticated electronic circuitry to generate light.

ADVANCED TECHNOLOGY

ENERGY STAR qualified CFLs use innovative technology to produce light in a very efficient way. Electricity creates a chemical reaction among gases located inside the glass tube, causing special phosphors to illuminate.



Saving figures based on 6,000 hour CFL lifetime, 1,000 hour incandescent lifetime, 3 hours of use per day, an electric rate of 10.08¢ per kWh, a CFL price of $3.00, and an incandescent price of $0.50.

ENJOY ENERGY SAVINGS AND MORE!

The average U.S. household has more than 40 sockets for light bulbs, ranging from table lamps to ceiling fixtures. Larger homes can have even more. Lighting accounts for about 20 percent of annual household electricity bills, or approximately $200 per year.[1] Replacing incandescent bulbs with ENERGY STAR qualified light bulbs provides significant benefits for consumers.

- SAVE TIME AND EFFORT. ENERGY STAR qualified light bulbs can last more than five years, compared to about 11 months for an incandescent bulb—that's six times longer![2]
- SAVE ENERGY AND MONEY. Over its lifetime, one ENERGY STAR qualified light bulb eliminates the need for at least six incandescent bulbs and saves you more than $30. By changing five bulbs to ENERGY STAR, you save more than $150![3]
- STAY COOL. Because ENERGY STAR qualified light bulbs run cooler, they make your home more comfortable. They are also safer to use in light fixtures that have delicate paper or fabric shades.
- SAVE THE ENVIRONMENT. When you choose an ENERGY STAR qualified light bulb, you are helping to protect the environment by reducing air pollution and greenhouse gas emissions.

For an interactive learning experience visit www.energystar.gov/CFLS and click on the How to Choose Guide.

WHERE TO USE.

There are ENERGY STAR qualified light bulbs for nearly every household application. Here are some tips:

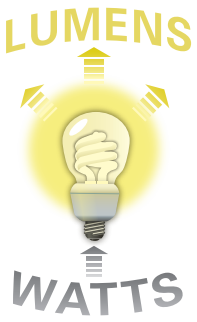
- LET IT SHINE. ENERGY STAR qualified light bulbs provide the greatest savings in fixtures that are on for at least 15 minutes at a time. Put them where you leave the lights on the most in the evening, such as the family/living room, kitchen, dining room, and porch.
- CHANGE LESS. ENERGY STAR qualified bulbs make frequent bulb changes a thing of the past. Those hard-to-reach fixtures are less trouble with ENERGY STAR qualified CFLs.
- LET IT FLOW. Indoors, ENERGY STAR qualified bulbs perform best in open fixtures that allow airflow, such as table and floor lamps, wall sconces, pendants, and open ceiling fixtures. When used outdoors, bulbs should be placed in enclosed fixtures to protect them from the weather.

DID YOU KNOW?

ENERGY STAR qualified light bulbs run cool, but are sensitive to heat, so they will last longer when used in fixtures that allow plenty of air flow.

LOOK FOR THE LUMENS

Watts are a measure of power; lumens are a measure of light. More lumens mean more light. ENERGY STAR qualified CFLs produce the same amount of lumens as incandescent bulbs, but use about one quarter of the power.



HOW TO CHOOSE

Finding the right ENERGY STAR qualified light bulb for your home is easy! Just ask yourself:

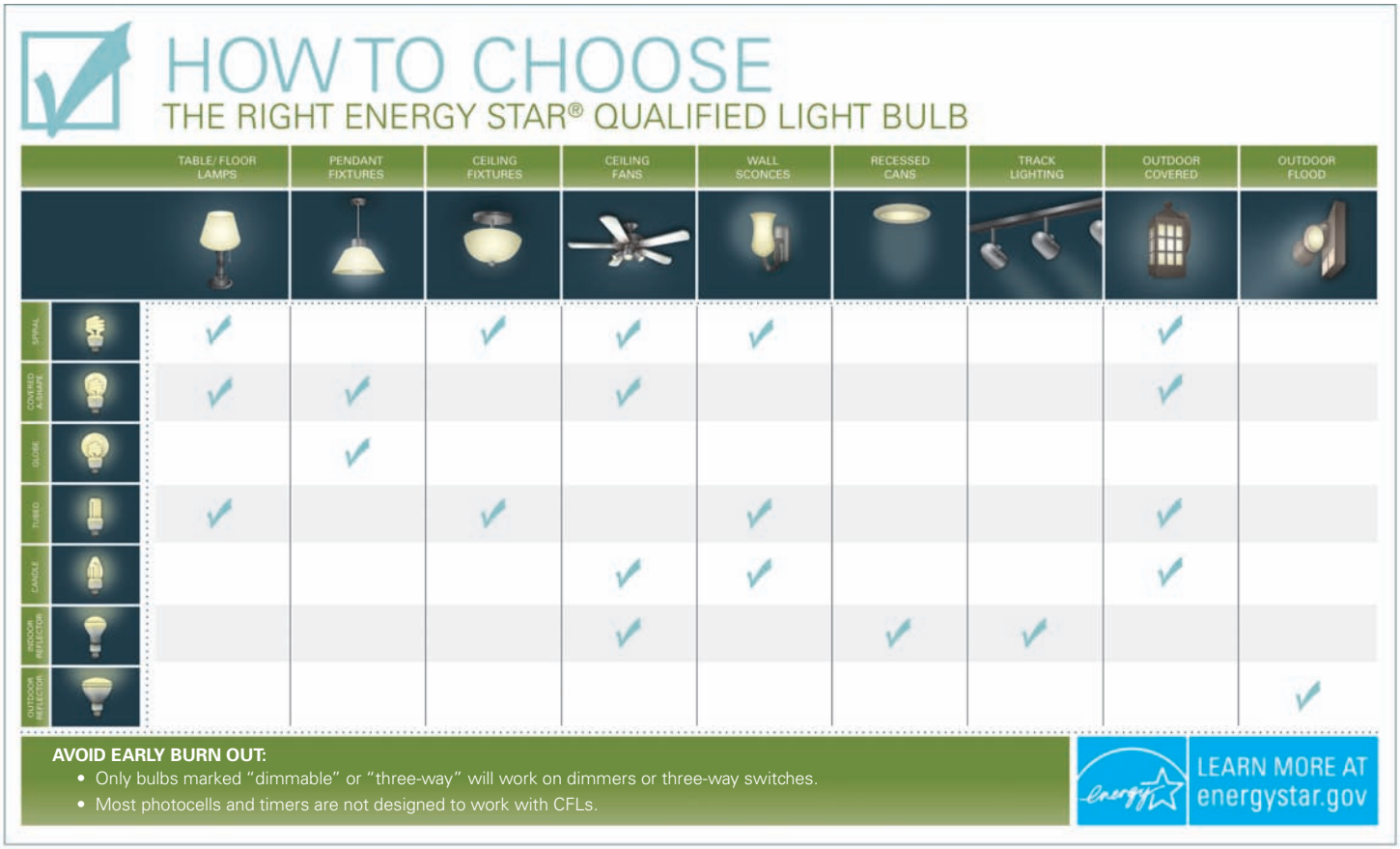
- What shape and size of light bulb will fit the fixture?
- How much light do I need in the room?
- Do I want a warm yellow glow or a cooler shade of white light?

WHAT SHAPE AND SIZE?

Different fixtures need different types of bulbs. Using the chart below, find your fixture and then see which bulbs will work best.

I'M SPECIAL. If a light fixture has a dimmer or a three-way socket, you'll need to use a special ENERGY STAR qualified light bulb designed to work in these applications. Check the packaging to find that special bulb.

TROUBLESHOOTING. Most photocells and timers are not designed to work with CFLs. Check with your photocell or timer manufacturer for compatibility.



HOW CFLS WORK

CFLs produce light differently than incandescent bulbs. In an incandescent, electric current runs through a wire filament and heats the filament until it starts to glow. In a CFL, an electric current is driven through a tube containing argon and a small amount of mercury. This generates invisible ultraviolet light that excites a coating on the inside of the tube, which then emits the light you can see.

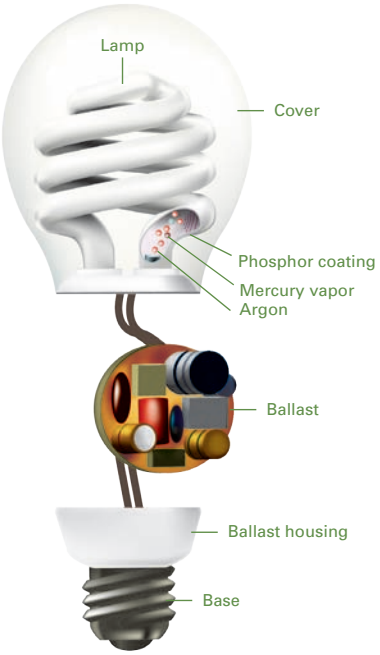
THE RIGHT AMOUNT OF LIGHT

To choose the ENERGY STAR qualified light bulb with the right amount of light, find a bulb 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 an equivalent bulb. Common terms include "Soft White 60" or "60-watt Replacement."

You can also check the lumen rating to find the right bulb. The higher the lumen rating, the greater the amount of light. To determine which ENERGY STAR qualified light bulbs will provide the same amount of light as your current incandescent bulbs, use the chart below.

DID YOU KNOW?

CFLs are made up of over 200 parts; most of them in the ballast. Older CFLs use large and heavy magnetic ballasts that sometimes caused a buzzing noise. ENERGY STAR qualified CFLs use electronic ballasts, which should never buzz or hum.



HOW MUCH LIGHT DO I NEED?

INCANDESCENT BULBS (WATTS)	MINIMUM LIGHT OUTPUT (LUMENS)	COMMON ENERGY STAR QUALIFIED LIGHT BULBS (WATTS)
25	250	4 TO 9
40	450	9 TO 13
60	800	13 TO 15
75	1,100	18 TO 25
100	1,600	23 TO 30
125	2,000	22 TO 40
150	2,600	40 TO 45

SOME TYPICAL COLOR TEMPERATURES ARE:	
1500K	Candlelight
2680K	40-watt Incandescent Bulb
3000K	Halogen Bulb
3200K	Sunrise/Sunset
3400K	1-Hour from Dusk/Dawn
5500-5600K	Camera Flash
9000-12000K	Blue Sky

WHAT IS COLOR TEMPERATURE?

The color of light is often referred to as the "color temperature", which is measured on the Kelvin scale. Lower kelvin numbers mean the light has a warmer glow, like a candle, while higher kelvin numbers mean the light appears cooler, like the sky.

WARM LIGHT:

CFLs in the 2700-3000K range are commonly marked "soft white" or "warm white." These bulbs will produce a familiar yellowish glow just like your old bulbs.

BRIGHT WHITE LIGHT:

CFLs in the 3500-4100K range are sometimes marked "bright white" or "cool white." The light from these bulbs will appear more white than yellow. This light is great for working in the kitchen.

DAYLIGHT:

CFLs in the 5000-6500K range are often marked "natural" or "daylight" because the color of the light is like daylight at noon. This light will appear cooler, almost bluish, the higher the number. This light is great for reading and work spaces.

CLOSING THE LOOP

When your CFL is finished you'll want to take it to be recycled. CFLs contain a very small amount of mercury sealed within the glass tubing – usually less than 5 milligrams – about the size of the period at the end of this sentence. By comparison, older thermometers contain about 500 milligrams of mercury – an amount equal to the mercury in more than 100 CFLs. Mercury is an essential part of fluorescent lighting.

- For help locating a recycling center that accepts CFLs, visit www.epa.gov/bulbrecycling or www.earth911.org.
- If a CFL breaks at home, it can be easily and safely cleaned up by an adult. The U.S. EPA provides cleanup recommendations at www.energystar.gov/CFLSandMercury.

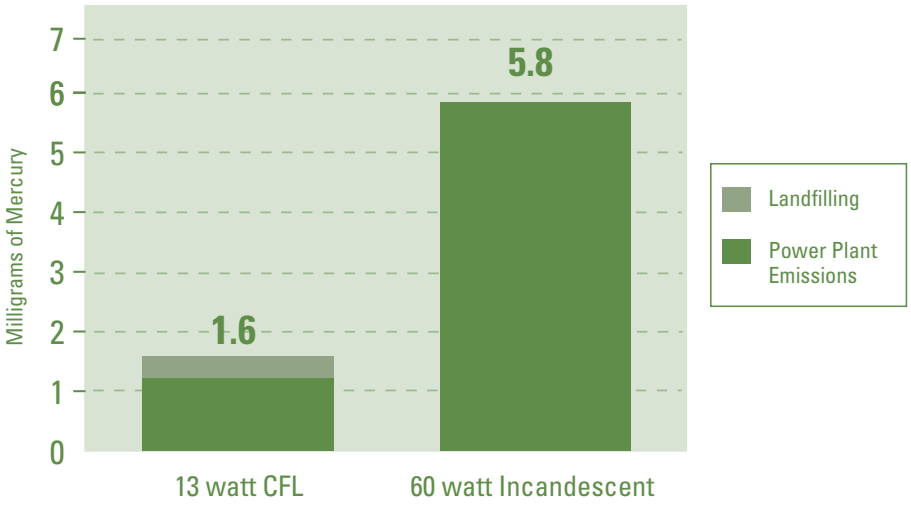
DID YOU KNOW?

The average mercury content in CFLs has dropped significantly in recent years, thanks to technology advances and a commitment from members of the National Electrical Manufacturers Association. Manufacturers continue to make further reductions: some CFLs now contain as little as 1-2 milligrams of mercury per bulb.

CFLS REDUCE THE MERCURY IN THE ENVIRONMENT

Burning coal to produce electricity is the main source of mercury emissions in the United States. Since they use less electricity than incandescent lights, CFLs reduce the amount of mercury released into the environment. A 13-watt, 8,000-hour CFL will save 376 kWh over its lifetime compared to its 60-watt incandescent equivalent, thus preventing 4.6 mg of mercury from entering the environment. If the bulb goes to a landfill, overall emissions savings would drop slightly to 4.2 mg. Because most mercury binds to the inside of a CFL as it is used, EPA estimates that only about 11 percent is released into the air and water when the CFL goes to a landfill (assuming it is broken). Recycle CFLs where possible to maximize mercury savings.[4]

Total Mercury Emissions, CFLs and Incandescent



Source: U.S. EPA June 2008

The average ENERGY STAR qualified light bulb is designed to last 8,000 hours—more than seven years, based on typical household use. That's long enough to watch your first-grader transform into a teenager!

FUN FACTS

If you replace five regular light bulbs with ENERGY STAR qualified light bulbs, you'll save over 1,400 kWh over the lifetime of the bulbs. That's enough energy to:

- Run your ENERGY STAR qualified clothes washer for more than seven years[5]
- Light your whole house for nearly nine months[6]
- Light up more than 235 strings of holiday lights during the winter holiday season[7]

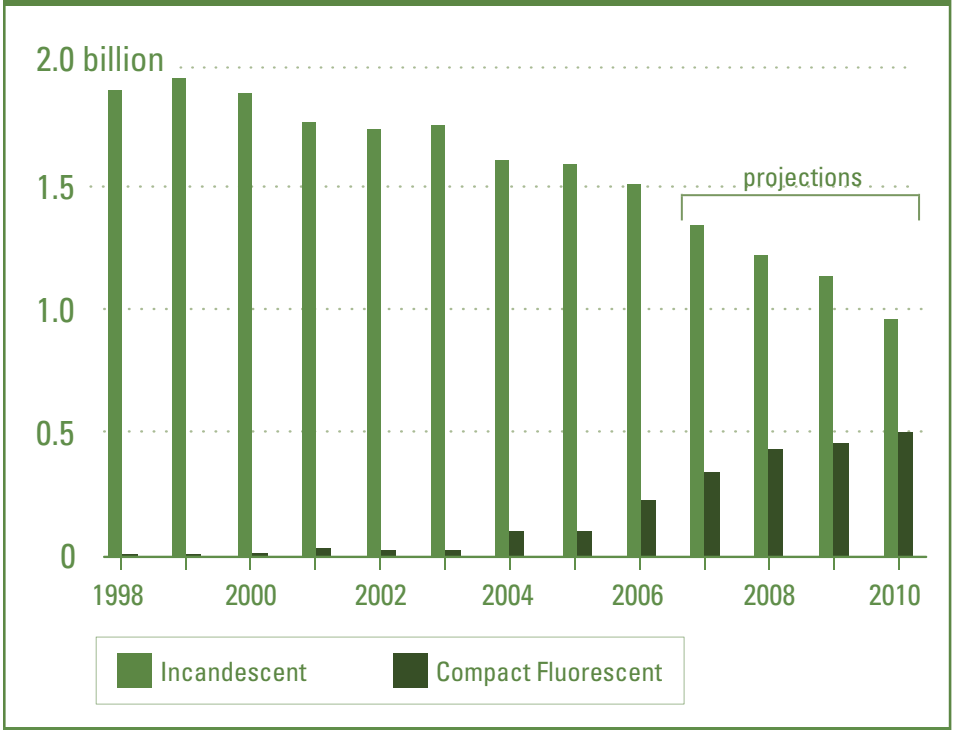
Five ENERGY STAR qualified light bulbs will save about $150 in electricity costs over their lifetime. That's enough money to:

- Purchase at least one new ENERGY STAR qualified light fixture
- Buy more than 75 soft-serve ice cream cones[8]
- Buy enough candles for 40 romantic dinners[9]

An ENERGY STAR qualified light bulb will last six times longer on average than an equivalent incandescent bulb. The long life will save you:

- Five trips up a ladder to change out bulbs in hard-to-reach fixtures
- Five bad jokes about "How many dads does it take to change a light bulb?"
- Five renditions of "Honey, the light bulbs out again!"

LIGHTING UP
North American Sales of Light Bulbs by Type



Source: National Electrical Manufacturers Association

ENERGY STAR MARKET SHARE

In the past 10 years, the market for CFLs has increased significantly, with a dramatic rise in shipments and market share in the past 3 years. Shipments have grown from less than 21 million units in 2000 to more than 397 million units in 2007.[10] Market share for CFLs has grown from 2 percent in 2004 to more than 20 percent in 2007.[11]

As CFL market share continues to grow, total sales of incandescent bulbs are expected to decline. Due to the longer lifetimes of CFLs, the market adoption of CFLs has a disproportionate impact on the incandescent bulb market since many incandescent bulbs equal one CFL lifetime.

DRIVING CONSUMER DEMAND

Despite the dramatic increase in sales, household CFL saturation remains relatively low. With an estimated national household saturation at about 10 percent, there is still enormous energy savings potential for CFLs.

Increasing the sales of ENERGY STAR qualified light bulbs requires effective consumer education. Educating consumers is a multi-step process, generally categorized into the following stages:

1. AWARENESS: Consumers discover ENERGY STAR qualified light bulbs as alternatives to incandescent bulbs.
2. BENEFITS: Consumers understand how ENERGY STAR qualified CFLs will benefit them.
3. WHERE TO USE: Consumers learn where ENERGY STAR qualified CFLs work best.
4. HOW TO CHOOSE: Consumers know which bulbs to purchase for which light fixtures.

Despite increased awareness of CFLs, consumers need more education to understand how to choose and where to use CFLs.

When installing CFLs, twist the bulb from the plastic part, not the glass tubing.

ENERGY STAR CRITERIA

ENERGY STAR qualified CFLs must meet a number of efficiency and quality benchmarks to earn the label. A few examples are listed below.

- EFFICIENCY. The efficiency of light bulbs is referred to as efficacy, which is the measure of light output (lumens) compared to the energy needed to power the bulb (watts). ENERGY STAR qualified CFLs generally provide three to four times more lumens per watt than incandescent bulbs.
- LONG LIFETIME. The minimum lifetime requirement is 6,000 hours, which is about five years based on typical use. The average lifetime of all ENERGY STAR qualified CFLs is 8,000 hours, with some lasting as long as 15,000 hours.
- QUALITY ASSURANCE. All qualified bulbs are required to come with a manufacturer warranty of at least two years for residential use, and at least one year for commercial use. Qualified CFLs are subject to independent third-party testing.
- QUICK START. Bulbs must start in under a second. Note that start time is different than warm up time, i.e., the time it takes for a CFL to come to full brightness. Bulbs must reach full brightness in less than three minutes.
- SAFETY. Bulbs must be UL listed for fire safety.
- RELIABILITY. Bulbs must pass tests that show that they can withstand voltage surges and frequent on/off cycling.

NEW! ENERGY STAR CFL Criteria 4.0 Effective December 2, 2008

Candelabra base CFLs new to the ENERGY STAR family.

- High heat protection. Indoor reflector CFLs must pass a high heat test to ensure more reliable performance in recessed can applications.
- Candelabra base CFLs are now eligible for qualification.
- Color consistency. Bulbs must fall within the range of one of the six designated color temperatures (2700K, 3000K, 3500K, 4100K, 5000K, or 6500K), which must be listed on product packaging so consumers can find the color they prefer.
- Mercury and recycling information on all product packaging. Manufacturers must have a commitment form on file with National Equipment Manufacturers Association Voluntary Commitment on Mercury in CFLs (www.cfl-mercury.org). Product packaging must include the Hg symbol for mercury and one of the approved Web site addresses for locating lamp recycling facilities.

ENERGY STAR SAVINGS

INCANDESCENT LIGHT BULB (WATTS)	ENERGY STAR QUALIFIED LIGHT BULB (WATTS)	ANNUAL SAVINGS[12]		LIFETIME SAVINGS[13]			
				6,000 HOURS	8,000 HOURS	10,000 HOURS	15,000 HOURS
40	11	32 kWh	$3	$19	$25	$31	$47
60	13	51 kWh	$5	$30	$41	$51	$76
75	20	60 kWh	$6	$36	$48	$59	$89
100	26	81 kWh	$9	$48	$64	$80	$120

	13-WATT ENERGY STAR QUALIFIED LIGHT BULB	60-WATT INCANDESCENT LIGHT BULB
PURCHASE PRICE	$3.00	$0.50
LIFETIME	6,000 HOURS	1,000 HOURS
NUMBER OF REPLACEMENTS IN 5 YEARS	0	5
COST OF REPLACEMENT LIGHT BULBS	$0.00	$2.50
OPERATION COST (ELECTRICITY COST)[12]	$8.42	$38.88
TOTAL COST	**$11.42**	**$41.88**

END NOTES

[1] An average household consumes 10,660 kWh per year in electricity total, including an average of 1,950 kWh for lighting. Cost assumes an average electric rate of 10.6¢ per kWh.

[2] Assumes three hours of use per day. The minimum lifetime of an ENERGY STAR qualified light bulb is 6,000 hours. The average lifetime of an incandescent light bulb is 1,000 hours.

[3] Assumes the replacement of a 60-watt incandescent light bulb with a 13-watt ENERGY STAR qualified bulb, qualified bulb purchase price of $3.00 and lifetime of 6,000 hours, incandescent purchase price of $0.50 and lifetime of 1,000 hours, and an average electric rate of 10.8¢ per kWh over the life of the qualified bulb.

[4] EPA ENERGY STAR Fact Sheet on CFLs and mercury.

[5] The average ENERGY STAR qualified clothes washer consumes 195 kWh of energy each year. This assumes electric water heating, and an average use of 392 loads.

[6] An average household consumes 1,950 kWh per year for lighting.

[7] An average string of 100 mini incandescent holiday lights consumers 40 watts. Based on five hours of use per day for 30 days.

[8] Based on an average cost of $2.00 per cone.

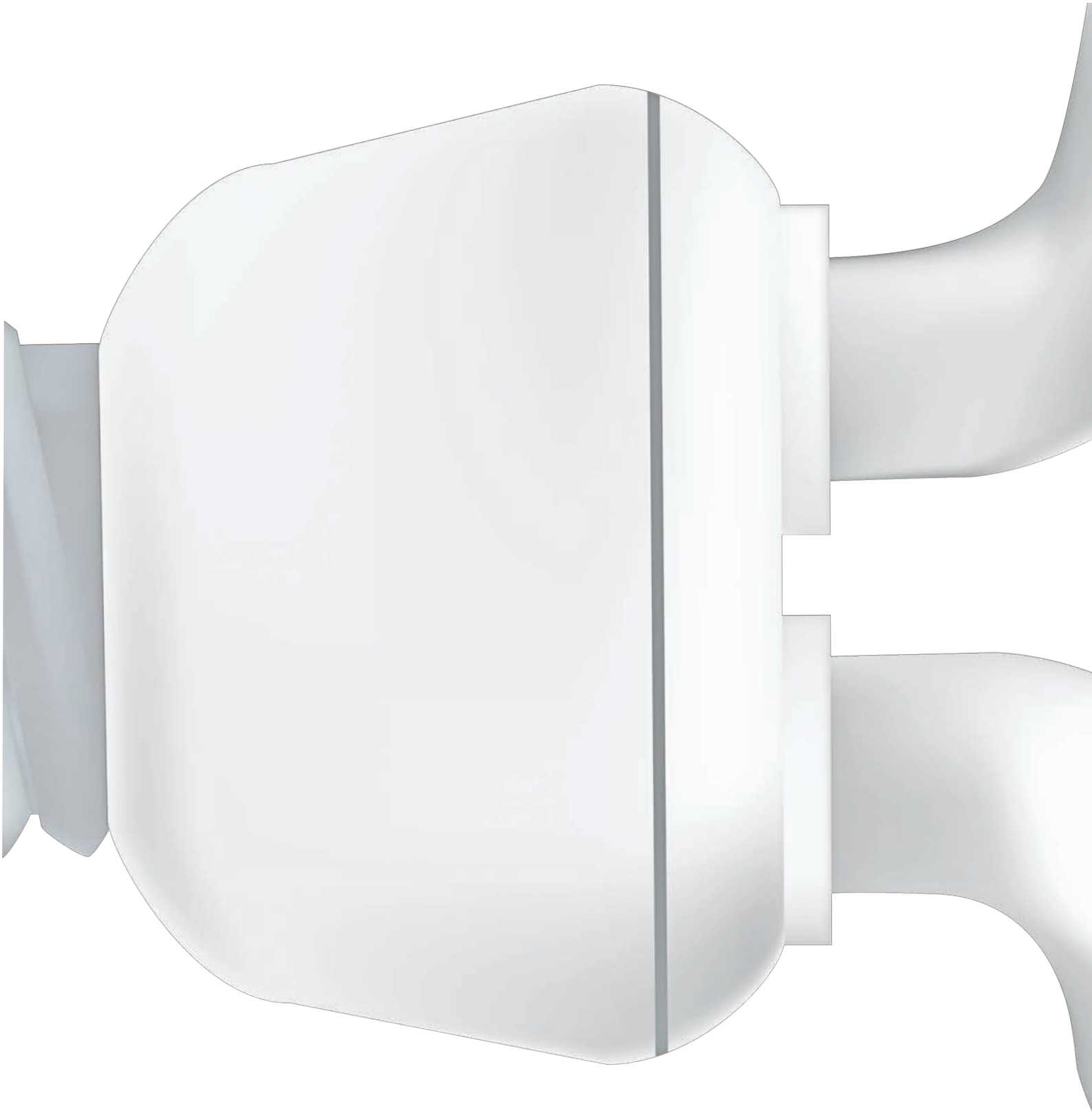
[9] Based on an average cost of $2.00 per candle, and assuming two candles are used per dinner.

[10] U.S. International Trade Commission import statistics.

[11] National Electrical Manufacturers Association.

[12] Based on bulb use of three hours per day and an average utility rate of 10.6¢ per kWh.

[13] Based on average utility rate of 10.8¢ per kWh.



U.S. DEPARTMENT OF ENERGY

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