



Energy Saving Tips

Lighting

Always turn off the lights when you leave the room.

It is a myth that it costs more energy to turn the lights back on rather than leave them on, even for fluorescent tubes.

If you use a particular light for an average of four hours or more a day then replace it with an energy-saving equivalent.

A Compact Fluorescent Lightbulb (CFL) uses around a quarter of the electricity and lasts up to 12 times longer than a standard incandescent bulb. Energy efficient bulbs cost around £5 each, but will give you a saving on your bills of £10 over the year. Turning a CFL on and off frequently can shorten its life.

Much is made of the energy inefficiencies of incandescent (filament) bulbs. Around 60% of the electrical energy in a filament bulb is lost in “waste” heat. Whilst this matters a lot during summer months, when the emphasis is on cooling, and where a bulb is used outdoors (just heating the atmosphere), when used in winter inside a house the heat is not wasted as it goes to help warm up the room. However gas central heating is much more efficient. If you heat your home with gas central heating, the efficiency is upwards of 90% with a modern boiler. If the same gas was used to generate electricity that was sent to your home to heat it with a light bulb, the efficiency would be worse than 50%.

Energy saving bulbs vary in warm-up time and light quality.

It takes a little time for the mercury in CFL bulbs to vaporize and reach its operating temperature. Some bulbs reach full brightness in a few seconds, while others can take up to a minute. The slower warm-up is due to an additive called “amalgam” that is used in bulbs with a wide temperature range, including most enclosed bulb styles (reflector floods, globes, A-lamps) and some outdoor bulbs. The benefit of bulbs using amalgam is that they produce full-light output over the range of temperatures. The disadvantage is the slower warm-up.

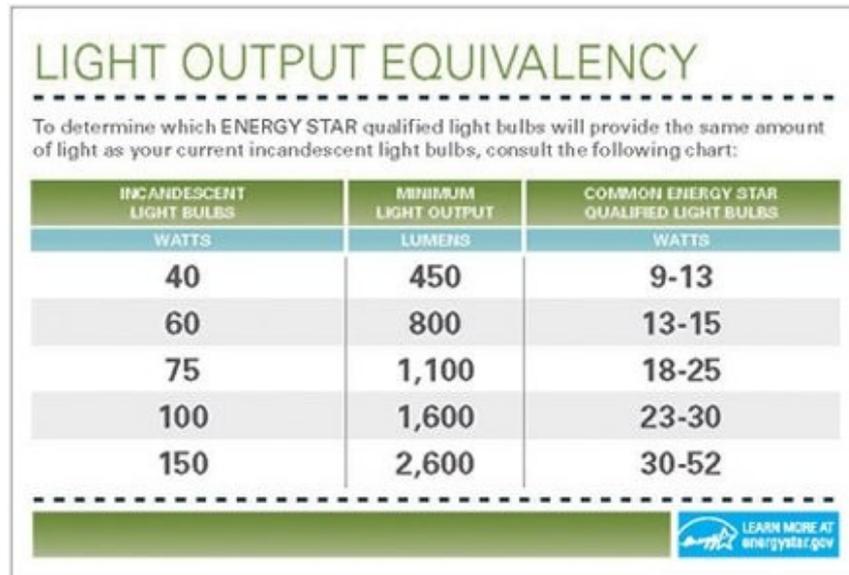
CFLs without amalgam used in colder locations (e.g. porch lights or those in a garage), also take longer to reach full brightness. They may come on quite dim but will brighten as they self-heat.

You may have heard that CFLs use a lot of energy when turning on and off.

While there is a brief surge in energy use when a CFL is turned on, with today's starting technology, that surge usually lasts about a tenth of a second and consumes about as much energy as five seconds of normal operation. So, even when turned on and off frequently, a CFL uses less energy than its incandescent equivalent. But because turning a CFL on and off more frequently can shorten its life and CFLs are more expensive than incandescents, it is recommended to use CFLs in applications where they are on for at least fifteen minutes.

Many issues with CFL lightbulbs and their perceived poor light output are to do with incorrect replacement wattages.

The replacement equivalent for a 100W incandescent bulb is a 23-25W CFL. Most of the bulbs on sale are 11W (40W equivalent) or 15W (60W equivalent). Those sent out free by energy companies are often the 40 or 60W equivalents, so are inadequate as replacements for 100W bulbs used in corridors and landings. Always use the correct wattage replacement.



The chart is titled "LIGHT OUTPUT EQUIVALENCY" and provides a guide to match incandescent bulb wattage with CFL wattage based on light output (lumens). It includes a table with three columns: Incandescent Light Bulbs (Watts), Minimum Light Output (Lumens), and Common Energy Star Qualified Light Bulbs (Watts). The data is as follows:

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

The chart also includes a logo for Energy Star and a link to learn more at www.energystar.gov.

Safe rule of thumb of 3:1 for incandescent to CFL wattage can be applied when determining appropriate replacement CFLs for incandescent bulbs.

Not sure which bulb to choose in which situation ?

Use the ENERGY STAR bulb selector <http://drmediaserver.com/CFLGuide/index.html>

Matching the right CFL to the right kind of fixture helps ensure that it will perform properly and last a long time.

For example:

- CFLs perform best in open fixtures that allow airflow, such as table and floor lamps, wall sconces, pendants, and outdoor fixtures.
- For recessed fixtures, it is better to use a reflector 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 socket fixture**, you'll need to use a special ENERGY STAR qualified CFL designed to work in these applications. Make sure to look for CFLs that specify use with dimmers or three-way fixtures.

source: ENERGYStar website 2008

Environmental Hazards – Don't CFLs contain Mercury which is hazardous?

The extra coal burnt to keep an incandescent light bulb alight releases three times more mercury into the environment than is contained within a compact fluorescent lamp.