



# The Blog



## Life After the Incandescent Ban: Choosing the Best LEDs

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Toshiba LED lamp - green house plans



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Is your country set to implement a bulb ban in the near future? Energy efficiency lighting is all the rage in [green house planning](#) these days, and legislations that require manufacturers to produce more energy-efficient lamps certainly will help.

A quick policy rundown:

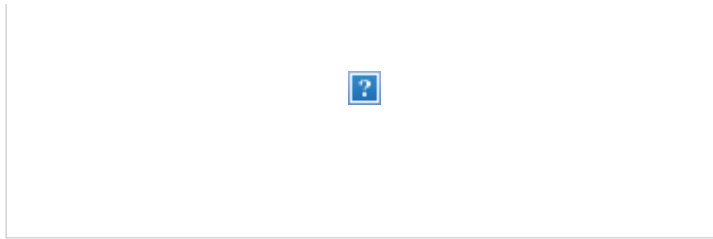
- The Canadian government has banned the sale of 100 and 75 watt incandescent bulbs by January 2014
- The state of California has a similar regulation that will see these bulbs phased out of use by 2018.
- In the US, regulations will set maximum wattage requirements for screw-in 100-watt to 40-watt incandescent bulbs (known alternatively as Edison or A19 lamps) starting in October 2012. The bulbs will need to use 27% less energy to produce the same lumens, with efficiency standards jumping again in the coming years. A bulb ban may still be in the works for Americans, though arguments are still raging over the issue.

So, what's a consumer to do? Invest in light emitting diodes (LEDs), of course! LEDs are one of the most cutting edge lighting solutions being used in green designs today, saving huge sums of energy. The US Department of Energy estimates that if every American home were to replace just one incandescent with an ENERGY STAR LED (or CFL), the country would save enough energy to light 3 million homes annually, cutting greenhouse gas emissions by 9 billion pounds every year. And the technology supporting LEDs is becoming more sophisticated and cost-effective every year. Here's a quick guide to choosing good LEDs for your eco-friendly home.

### **Learn Lumens, Not Watts**

Unlike incandescent bulbs which are generally

measured according to how much energy they consume (watts, that is), LEDs work on a different metric: lumens. As the measure of how much light is produced (the brightness), a lumen number gives you how much light will be produced per watt, or lumens per watt (lpw). Here's a simple comparison:



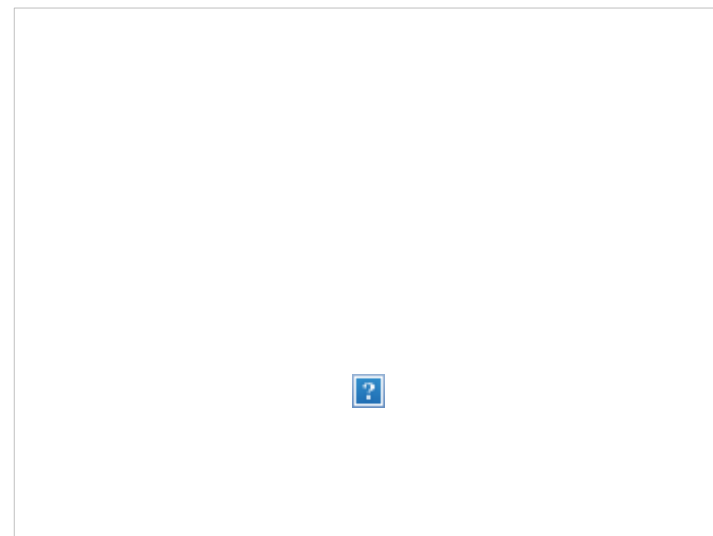
- **Standard 60 watt incandescent bulbs:** On average, these bulbs consume 60 watts to generate 800 lumens, which calculates to 10 to 17 lpw.
- **The GE energy smart A-19 LED (dimming) medium lamp:** This consumes 13 watts while producing 800 lumens, which is 61.5 lpw.

As you can see, this LED is almost 4 times more energy efficient for producing the same lumens. If you want to learn more about the technological aspects of solid-state lighting like LEDs, check out the US Department of Energy's [Standards Development for Solid-State Lighting](#) page where you'll find a whole list of white papers on developments in this field.

### Characteristics for Green Home-Worthy LEDs

Choosing LEDs will require that you learn a little about new lighting terminology. These tips should help you navigate the landscape:

- **Omni directional:** Individual LEDs produce very focused, pin-point kind of light, making them more suitable to a laser



pointer than a desk lamp. But each incandescent-replacement LED lamp is composed of many individual

LEDs, so look for bulbs that are designed with individual LEDs shining in multiple directions so that you receive even lighting.

- **Colour temperatures:** Look for a bulb with the right colour temperature for your rooms. The LED 3000K corresponds roughly to warm white light, while higher temperatures like 4000K and 3500K are cooler blue, and lower temperatures like 2700K are warmer.
- **ENERGY STAR:** Look for ENERGY STAR qualified bulbs to ensure you're getting the most energy efficient option. These are required to meet minimum requirements, such as 50 lpw, 25,000 hour rated lifespan, and colour rendering index (CRI) over 80. They also must come with a three-year warranty.

Keep in mind that it will cost you more per bulb to purchase LEDs. Some, like the Philips' 940 lumen EnduraLED, will cost something like \$40. But there are those, such as the Lighting Science Group's ENERGY STAR 40-watt replacement LED sold through the [Home Depot](#) for \$10. And with the much higher efficiency, these bulbs will pay for themselves in electricity savings.

And don't forget that your local government or utility company may offer rebates and incentives for purchasing greener lighting products – check out or [US Green Energy Saving Tax Incentives, Rebates, & Programs list](#) for information in your local area.

Images via Flickr ([oskay](#)), [Toshiba](#) and [GE Lighting](#).



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