

Shedding light: New bulb law goes into effect in 2012

April 7 2011, By Mary Beth Breckenridge

When it comes to the new lighting law, a lot of people seem to be in the dark.

Recently I've encountered quite a bit of misunderstanding and flat-out fear about the new federal lighting standards that will be phased in starting next year.

For the record:

-No, the government is not banning all incandescent light bulbs.

-No, you're not being forced to switch to fluorescent lighting.

-No, you won't have to change all your lamps and light fixtures.

Now, I'm not saying we won't notice the changes or have to make adjustments. And I'm not venturing into the issue of whether the government is overstepping its bounds. That's a different topic for a different forum.

But I do think it's important to have the facts straight - both so we can discuss the matter intelligently and so we know what to expect when we go shopping for light bulbs.

Here, then, are some questions and answers that I hope will shed light on the issue.

Q: Why is the government regulating light bulbs?

A: The new lighting standards are part of the Energy Independence and Security Act of 2007, which was signed into law by President George W. Bush. The purpose of the law, in short, was to reduce our [energy consumption](#) and our dependence on foreign [energy sources](#).

Since lighting accounts for about 14 percent of the electricity used in buildings in this country, the law targeted lighting as one of the areas where improving energy efficiency could make a significant difference.

Q: Why are incandescent bulbs being singled out?

A: Conventional incandescent lighting - the kind we're most familiar with - uses energy much less efficiently than other kinds. Only 10 percent of the electricity used by a conventional [incandescent light bulb](#) goes into producing light. The rest becomes heat.

The government wants to improve those numbers, at least in general-service bulbs, the kind we use most often.

Under the new law, it's requiring those bulbs to be roughly 25 percent more efficient.

Q: Does that mean all incandescent bulbs are being banned?

A: No. The law applies only to general-service bulbs, the pear-shaped, screw-in bulbs with a medium base that fit most standard lamps and lighting fixtures. What's more, the law affects only 40-, 60-, 75- and 100-watt general-service bulbs.

Even with that type of bulb, you'll still have incandescent options. Manufacturers are coming up with more efficient types of incandescent

light bulbs that will meet the new standards.

These more efficient bulbs are called halogen incandescent bulbs. Halogen is a form of incandescent lighting that uses halogen gas in addition to a metal filament.

Q: Won't those halogen bulbs produce light that's more harsh?

A: At full power, halogen bulbs produce a brighter, crisper, whiter light than conventional incandescent bulbs. That's good for tasks such as reading, but not everyone likes it for ambient lighting.

But here's a nifty thing about them: The light of halogen bulbs can be made softer and warmer by turning them down with a dimmer, said Terry McGowan, director of engineering for the American Lighting Association.

Dimming the bulb reduces its Kelvin rating, which measures the color of light, McGowan explained. A halogen bulb can range from a bright, white 2,930 Kelvins to 1,850 Kelvins, the color of candlelight.

So in effect, a halogen incandescent bulb gives you a variety of lighting options in one bulb.

Q: Will I still be able to buy incandescent bulbs for things like appliances and chandeliers?

A: Yes. The law does not apply to appliance bulbs or candelabra-base bulbs, the kind with narrow screw-in bases that are often used in chandeliers and electric window candles.

Nor does the law apply to medium-base bulbs other than the specific general-service bulbs I mentioned earlier. Among the bulbs it excludes

are three-way bulbs, 150-watt bulbs, black light bulbs, bug lights, colored lights, plant lights, rough-service bulbs and shatter-resistant bulbs.

Q: When do the changes take place?

A: The changes will be phased in. They'll affect general-service, 100-watt bulbs on Jan. 1, 2012, 75-watt bulbs a year later and 60- and 40-watt bulbs on Jan. 1, 2014.

Now, here's where the issue gets a little complicated. It's not entirely correct to say the government is banning those light bulbs. What's actually happening is the government is limiting the amount of energy a bulb can use to produce a certain amount of light.

Q: Huh?

A: OK, here's a quick lesson in Lighting 101.

Although we've gotten used to thinking about a light bulb's brightness in terms of watts, that's an inaccurate measure. Watts measure the amount of electricity a light bulb uses - or any electrical device, for that matter. Brightness is measured in lumens.

A conventional incandescent light bulb uses 100 watts of electricity to produce about 1,600 lumens. Under the new standards, general-service bulbs won't be permitted to use more than 72 watts to produce that amount of light. Different wattage limits apply to bulbs of other brightness levels.

Q: That sounds pretty complicated. How will I know what to buy when I go shopping for light bulbs?

A: By the middle of this year, light bulb packages will be required to

bear a lighting facts label designed to help consumers choose bulbs. The label is similar to the nutrition facts label found on food packages.

The label will show the number of lumens the bulb produces, the number of watts it uses, and the lumens per watt - a measure of the bulb's efficiency. It will also tell how warm or cool the light is and how true colors appear under the light. If the bulb contains mercury, the label will note that, too.

Eventually we'll get used to thinking in terms of lumens when we're choosing bulbs. For now, here's a conversion guide from the Department of Energy:

-Replace a 100-watt incandescent bulb with one that gives you about 1,600 lumens.

-Replace a 75-watt bulb with one that gives you about 1,100 lumens.

-Replace a 60-watt bulb with one that gives you about 800 lumens.

-Replace a 40-watt bulb with one that gives you about 450 lumens.

Q: Will the new bulbs fit my old lamps and light fixtures?

A: For the most part, yes, assuming your lamps and fixtures are designed to fit general-service bulbs. All three types of energy-saving bulbs - compact fluorescent bulbs, halogen incandescent bulbs and LED bulbs - have screw-in bases that are the same size as general-service incandescent bulbs. The bulbs are roughly the same size as the old ones, too, although some may be a bit bigger or smaller than what you're used to.

If you're in doubt, the Energy Department recommends taking one of

your old bulbs with you when you shop so you can compare or get assistance from a salesperson.

You can even buy those twisty compact fluorescent bulbs with coverings that give them the shape of more conventional bulbs, so you can use them in fixtures where the bulb shows or with lampshades that clip onto the bulb.

Q: Aren't these efficient bulbs more expensive?

A: Yes. But they cost less to operate, and some of them last significantly longer than conventional incandescent bulbs. So in the long run, you'll pay less to buy and operate the efficient bulbs than conventional incandescent bulbs, the Energy Department says.

Let's look at the upfront cost first. A conventional, 100-watt incandescent bulb will cost you about 60 cents to buy. To get the same amount of light, you'd pay about \$3 for a compact fluorescent bulb, \$3 for a halogen incandescent bulb or \$40 for an LED bulb.

(Bulb prices can vary significantly, depending on the quality, wattage, retailer and other factors, but I'm using averages from the American Lighting Association for the sake of simplicity.)

But consider the costs of lighting those bulbs. That standard incandescent bulb will cost you around \$4.80 a year to run, according to the Energy Department. A good-quality compact fluorescent bulb would cost you \$1.20; a halogen incandescent bulb, \$3.50; and a good LED, \$1.

With LEDs and compact fluorescent lights, you'll save even more because you won't have to replace them as often. A compact fluorescent bulb lasts about 10 times longer than a conventional incandescent bulb, the Energy Department says. An LED bulb lasts up to 25 times longer.

Halogen incandescent bulbs, on the other hand, won't give you a longevity bonus. They last about as long as conventional [incandescent bulbs](#), the lighting association says.

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