Harrison Rural Electrification Association, Inc.

RR 6, Box 502
Clarksburg, WV 26301-0502
304-624-6365

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Energy efficiency: Helping you lower your energy bills

Manager's Corner
by Gary Jackson, CEO/General Manager

When I go to the grocery store, I carry a list with me. Otherwise, I'm bound to forget something.

The same thing goes for the hardware store when I want to undertake some projects around the house. What materials do I need? And if the work involves weatherization, will it really help me save money on my energy bills?

Generally, the answer to that last question is a resounding "yes." Even small energy efficiency measures will save money. For as little as $2, the cost of an outlet and switch plate insulator kit, you can begin to drastically improve comfort around your residence.

What areas should you focus on? Start with the basics: applying weather stripping and caulk around doors and windows; replacing traditional incandescent light bulbs (CFLs); and insulating your water heater and hot water pipes. Then look at some bigger expenditures: adding insulation to your attic, installing a programmable thermostat and sealing ductwork. You can find even more ways to save on the U.S. Department of Energy's EnergySavers.gov

We at HREA are committed to doing everything possible to keep your energy bills affordable. And we're controlling costs through innovation – our energy efficiency programs are just one way we can help you manage your energy use.

Treat power tools with care

Before you fire up that power tool for your next do-it-yourself home project, remember that these electrical devices must be treated with care. Even though many tools are equipped with safety mechanisms, it's still important to heed precautions. Keep in mind these tips from the U.S. Occupational Safety & Health Administration (OSHA) when using power tools:

- Do not carry tools by their cords.
- Pull the cord out of the outlet by the plug, not by pulling on the cord.
- Do not use in wet or damp job sites, unless the tool is specifically approved for those conditions. Store them in a dry place when not being used.
- While carrying a tool, do not touch the switch or trigger that operates it to avoid accidental starts.
- Ensure your work area is well-lit.
- Unplug tools when cleaning or fixing, while changing other parts of the tool such as blades or bits, and when not in use.
- Ensure that all extension cords are not worn or frayed.
- Wear proper clothing — no ties, jewelry or other loose items that could get caught.

"Whether you're on the job or working at home, staying safe around power tools is a must," says afety Coordinator Harold Gains. "Following a few rules could mean the difference between a successful project and an accident."

Beyond swirly bulbs

Federal regulations spur new lighting options

BY MEGAN MCKOY-NOE, CCC

On hot summer evenings children love chasing fireflies, often catching them in jars. Then the real magic begins, as the intermittent glow captivates the captors.

That same sense of wonder can be found in labs as scientists refine the process of making light-emitting diodes (LEDs) — highly-efficient light bulbs comparable to a fireflies' glow. LEDs have been commonly used as solitary sensor lights in electronics; now manufacturers are searching for economical ways to contain a colony of LEDs in a single lighting shell. Just as children attempt to gather enough fireflies to make a lamp, an LED "jar" would create enough light output (lumens) to match that of traditional incandescent bulbs.

This research is part of a national effort aimed at redefining household lighting. Starting in January 2012, 100-watt (W) incandescent bulbs — a technology developed in the United States by Thomas Edison in 1878 and largely untouched since — must become more energy efficient.

Prolific inventor Thomas Edison likely would be surprised to know no improvements would be made to his creation for 130 years!
Source: Library of Congress

Federal mandate

Why is the government shining a light on — well, lighting? The U.S. Energy Information Administration (EIA) estimates we use 13.6 percent of our nation's energy supply to keep the lights on, and a lot of that power is wasted. If you've ever touched a traditional light bulb when it's on, you realized much of the energy (90 percent) is released as heat (ouch!). This leaves a lot of room for improvement.

To tackle this issue, Congress passed the Energy Information and Security Act of 2007 (EISA). By 2014 household light bulbs using between 40-W to 100-W will need to consume at least 28 percent less energy than traditional incandescents, saving Americans an estimated $6 to $10 billion in lighting costs annually. The law also mandates light bulbs become 70 percent more efficient than classic bulbs by 2020 (LEDs already exceed this goal.)

"With shifting lighting options and consumers looking for every opportunity to save, navigating lighting solutions has never been so important," declares David Schuellerman, GE Lighting's public relations manager.

Look for labels

Such a massive product change means consumers must switch from thinking about light bulbs in terms of watts (amount of energy used) to lumens (amount of light produced.)

"Lumens, not watts, tell you how bright a light bulb is, no matter the type of bulb," explains Amy Hebert at the Federal Trade Commission (FTC). "The more lumens, the brighter the light."

The consumer-focused agency has designed a "Lighting Facts" label and shopping guide that compares a bulb being purchased with traditional incandescent light bulbs based on wattages and equivalent lumens. Beginning in 2012, labels on the front and back of light bulb packages will emphasize a bulb's brightness in lumens, annual energy cost and expected lifespan.

Is this a bulb ban?

Contrary to popular belief, the federal Energy Information and Security Act of 2007 does not ban incandescent bulb technology; it requires bulbs use less energy.

"It's equivalent to standards passed in the 1980s to make refrigerators more energy efficient, and we're reaping those benefits," remarks Brian Sloboda with the Cooperative Research Network (CRN), a division of the National Rural Electric Cooperative Association, the national trade arm of local electric co-ops. "Refrigerators use less than one-third of the electricity today than they did in the mid-1970s, but consumers can't tell a difference in how their food is cooled. The premise is, why not do the same for light bulbs?"

EISA halts the manufacture of inefficient light bulbs, but stores will not remove tried-and-true incandescent bulbs from shelves come New Year's Day. Current inventory will still be available for sale until exhausted. And the improved efficiency requirements only apply to screw-based light bulbs; specialty bulbs for appliances, heavy-duty bulbs, colored lights and three-way bulbs are exempt.

Explore your options

Once traditional incandescents go the way of the passenger pigeon, residential bulbs will largely fit in three categories, each stacking up a bit differently:

• Halogen incandescents: Use 25 percent less energy, last three times longer than regular incandescent bulbs

• Compact fluorescent lamps (CFLs): Use 75 percent less energy, last up to 10 times longer

• LEDs: Use between 75 and 80 percent less energy, last up to 25 times longer

"CFL, halogen, and LED technologies all offer energy savings, but at different intervals, and all with their own pros and cons" says Schuellerman.

For consumers comfortable with their old incandescent bulbs, halogen incandescents will be an easy first-step. Featuring a capsule of halogen gas around the bulb's filament, they're available in a variety of familiar colors and can be dimmed.

"Halogen offers a big efficiency advantage over standard incandescent bulbs," says John Strainic, global product general manager, GE Lighting. "It consumes fewer watts while delivering a precise dimming capability and a bright, crisp light."

The most familiar options on the market today — and most economical — are CFLs. The technology operates the same as fluorescent lighting in offices or the kitchen. The bulbs are now available in a wide array of colors and some can be dimmed. Always check the package to make sure a bulb meets your needs.

According to Schuellerman, CFLs are generally best used anywhere where lighting is left on for extended periods and full brightness is not immediately necessary, such as family rooms, bedrooms and common areas. As with all fluorescent bulbs, each CFL contains a small amount of mercury (five times less than a watch battery) and should be recycled. Many retailers offer free CFL recycling; visit www.epa.gov/cfl for details.

The final choice (remember the fireflies?) is LEDs. Although still developing, you can find LED lights, recessed fixtures and some lower wattage replacement bulbs on store shelves.

"LEDs are the up-and-coming solution," predicts Schuellerman. "As they come down in price, homeowners will embrace them. Currently, most residential LEDs are used for outdoor lighting where fixtures are left on for extended periods and changing bulbs is not easily done. LEDs are also great for linear applications like under-cabinet lighting, where light sources with thin profiles are needed."

LEDs are more expensive than other options: an LED replacement for a 60-W incandescent bulb costs between $30 and $60. But costs will fall as manufacturers respond to growing consumer demand.

For example, in 2008 LEDs comprised 10 percent of the output from CREE Inc., a Durham, N.C-based lighting manufacturer. Fast-forward three years and LEDs are responsible for 70 percent of the company's businesses, and bulb efficiency has doubled. Innovations like a new production line last year are driving down costs.

LEDs are not without their problems — they have to stay cool to operate efficiently, and when several bulbs are placed together for a brighter, more consumer-friendly light, lifespan decreases. However, many manufacturers are accounting for this by adding cooling elements to LED bulbs. Some bulbs feature a spine design to allow air to flow around the base; other models have fans built into the ballast.

Can you see a difference?

Some consumers believe more efficient bulbs won't provide the same warm look and feel as classic bulbs, but Schuellerman disagrees.

"Lighting technologies are advancing at such a rate that consumers won't notice a marked difference in the color of light from different technologies or how that light is dispersed. You also won't necessarily see a difference in bulb shape. Some consumers don't like the look of twist-shaped CFLs, for example, so we offer covered CFLs that look just like incandescent bulbs. We also have an LED bulb that is a replacement for a 40-watt incandescent, as well as halogen bulbs, that both are housed in incandescent-shaped shells."

The difference will be found on your monthly electric bill — more efficient bulbs use between 25 and 80 percent less energy than traditional incandescents, and last much longer. The U.S. Department of Energy claims each household can save $50 a year by replacing 15 traditional incandescent bulbs.

"With these new technologies, homeowners will be spending less on electricity bills for lighting and changing fewer bulbs," says Schuellerman.

To learn about lighting options, visit energysavers.gov/lighting. For details on the change and shopping tips visit ftc.gov/lightbulbs.

Energy Efficiency
Tip of the Month

Is your washing machine more than 10 years old? According to the U.S. Department of Energy, families can cut related energy costs by more than a third — and water costs by more than half — by purchasing a clothes washer with an ENERGY STAR label. Choose a front-load or redesigned top-load model.

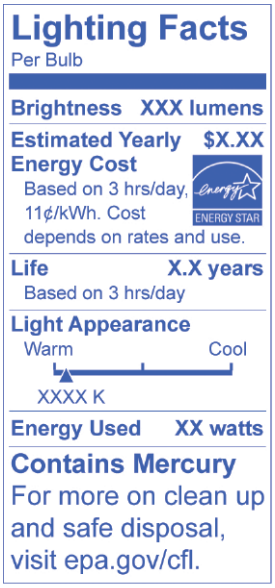
Source: U.S. Department of Energy

Shopping for lights? Look for lumens, not watts

When you're shopping for light bulbs, compare lumens to be sure you're getting the amount of light, or level of brightness, you want. A new Lighting Facts Label will make it easy to compare bulb brightness, color, life and estimated annual operating cost.

Buy Lumens, Not Watts

We typically buy things based on how much of it we get, right? When buying milk, we buy it by volume (gallons).



So why should lighting be any different? But for decades, we have been buying light bulbs based on how much energy they consume (watts), not how much light they give us (lumens). With the arrival of new, more efficient light bulbs, it's time for that to change.

What's a Lumen?

Lumens measure how much light you are getting from a bulb. More lumens means a brighter light; fewer lumens a dimmer light.

Lumens are to light what pounds are to bananas or gallons are to milk — they let you buy the amount of light you want. So when buying new bulbs, think lumens, not watts.

The brightness, or lumen levels, of lights in your home may vary widely, so here's a rule of thumb:

- To replace a 100-W traditional incandescent bulb, look for a bulb that gives you about 1,600 lumens. If you want something dimmer, go for less lumens; if you prefer brighter light, look for more lumens.
- Replace a 75-W bulb with an energy-saving bulb that gives you about 1,100 lumens
- Replace a 60-W bulb with an energy-saving bulb that gives you about 800 lumens
- Replace a 40-W bulb with an energy-saving bulb that gives you about 450 lumens.

What should I look for? The Lighting Facts label

To help consumers better understand the switch from watts to lumens, the Federal Trade Commission will require a new product label for light bulbs starting in January 2012. The labels will help consumers buy bulbs that are right for them.

Like the helpful nutrition label on food products, the Lighting Facts Label will help consumers understand what they are really purchasing. The label clearly provides the lumens — or brightness — of the bulb, estimated operating cost for the year and the color of the light (from warm/yellowish, to white to cool/blue).

To learn more about lighting options and other ways to save energy at home, visit TogetherWeSave.com.

Source: Energy Savers, U.S. Department of Energy

You CAN dim efficient lights

U.S. retailers will soon begin switching out traditional incandescent light bulbs with more efficient options because of new regulations under the federal Energy Independence and Security Act of 2007. Compact fluorescent lamps (CFLs) are the most widely available technology that meets the law's provisions.

As consumers rely more heavily on CFLs, they will encounter misconceptions — myths that the Electric Power Research Institute (EPRI), a non-profit research consortium made up of electric utilities, including electric cooperatives, wants to dispel.

Myth #1. CFLs cannot be used in 3-way fixtures.

Several manufacturers have developed 3-way CFLs that provide performance equivalent to traditional 3-way incandescent lamps and also operate in standard 3-way sockets.

Myth #2. Dimmable CFLs do not work with standard line dimmers.

While dimmable CFLs are available today, not all dimmable CFLs are compatible with every dimmer. Read the package before purchasing to determine if the CFL dims.

Myth #3. CFLs do not last as long as advertised.

Installing CFLs in recessed can fixtures not rated for its use will likely shorten the lamp's life. The life of a CFL also depends on how frequently the consumer turns it on and off.

Myth #4. CFLs are too expensive, and energy savings are outweighed by disposal costs.

The cost of CFLs has dropped significantly, and it's easy to recycle used or damaged bulbs. To learn more, visit www.epa.gov/cflcleanup.

To learn more about lighting changes in 2012 and beyond, visit www.energysavers.gov/lighting.

Sources: Electric Power Research Institute