Left to right, an early incandescent bulb, the compact fluorescent, the LED — and who knows what's even greener to come?

One great idea after another

Story by Roy Nollkamper, Glacier Electric Cooperative

For those of you who love the soft glow of the conventional incandescent light bulb and hate the new compact fluorescents, stand by for a shock. Under the new U.S. energy policy, incandescents will soon be taking the route of the dinosaurs, eight-track tapes and 1954 Studebakers.

By 2012, just around the corner, incandescent bulbs will be phased out. The trend has already started in Europe.

The phase-out is to be complete in 2014, but don't be surprised if some manufacturers move even more quickly.

A good CF costs around three bucks and will save you 75 percent on your electric consumption, plus it lasts five years instead of a few months. If the nation could save just 60 to 70 percent on its total lighting load by changing to CFs, that would amount to the electricity used by all the homes in Texas, and there are lots of homes there — just ask any Texan.

I know what you are thinking now: "But, there are so many things I don't like about CF bulbs." Yes, there are, or were, some definite drawbacks to the CFs. Let's look at a few and consider what's being done.

First, the color of the light — it's too white. That has been true in the past, but much improvement has been made recently to get the light closer to the warm yellow-red color of the traditional incandescent bulb.

There's mercury in the CFs. That's true, but studies have found that, if you happen to break one of the bulbs, it's not cause to call a hazmat team into your kitchen. Just sweep it up and dispose of it.

True, the incandescent bulb is mercury-free, but where coal is used for generation, the additional power needed to light the bulb is over twice that of a CF.

CFs don't really last the 20,000 hours, as advertised. Early versions certainly had burn-out problems. Now, if you buy an EnergyStar rated bulb they have a five-year warranty, and will be replaced if defective.

What's even better than compact fluorescent? What will save the world's energy problems? Drum roll. Enter the Light Emitting Diode.

LEDs have been around since the 1960s, almost as long as the transistor. Due to technical limitations, not much has been done with LEDs until recently, when you have probably seen some really bright flashlights hitting the market and your eyes.

In the last year or so, several manufacturers have also developed commercial and residential LED lighting fixtures that are truly amazing.

Here's the LED story in a sentence: they have a huge variety of colors, some nearly duplicating the rich gleam of your favorite light bulb, they are non-heat producing, they are nearly unbreakable, they contain no mercury, they are amazingly efficient and (best of all) they last for at least 60,000 hours.

While that short list is impressive, think about the last part: 60,000 hours.

Let me do the math so you don't have to get up from that warm armchair and chase down a calculator. If you happened to leave your new LED light on 24 hours a day, it would last 6.8 years.

But, since not many of us use lights 24/7 let's figure it out for just 10 hours a night. At that rate, the light should burn for a total of just over 16 years. Plus, the LED bulb that is the equivalent of a 50 watt incandescent dinosaur, eats up only 6.5 watts.

No one can doubt that the incandescent bulb has had a great run. They haven't changed that much since their introduction in 1879 when Thomas Edison invented the filament by carbonizing a piece of cotton thread from his wife's sewing box. But, what we will be seeing in just the next decade will be truly amazing and the energy savings will be incredible.

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