

Energy Savings Isn't Chicken Feed

By Walter Allread, *Living in South Carolina Magazine*

August 4, 2008 - When it comes to saving money with newer, more energy-efficient lighting, co-op members have some catching up to do with local "coop" members, you might say.

This year, Marlboro Electric Cooperative sent its residential members energy-saving compact fluorescent light bulbs, or CFLs, as part of its "Do the Light Switch" program. But the "residents" of the houses at Nikross Farms and Big Bidy Farms are way ahead of them. The chicken houses at the two neighboring farms, both served by Marlboro Electric Cooperative, are already switching to CFLs and the savings "ain't chicken feed," as the saying goes.

"I'm saving right at \$600 a month," Nikross Farms co-owner Richard Childers says. Power bills that previously averaged about \$1,100 a month plunged last November after he replaced the incandescent bulbs with CFLs, Childers says.

Nikross Farms switched about 288 lights to CFLs in its four 500-foot long houses. With automated controls for everything from the watering to lighting to cooling, the Nikross Farms houses are a far cry from the old-timey chicken coops. But Childers used good old-fashioned common sense by replacing standard, incandescent 100-watt bulbs in the houses with 23-watt CFLs.

The CFLs use 77 fewer watts of electricity to produce the same amount of light as a 100-watt incandescent, he realized. CFLs also last up to 10 times longer than incandescents.

Childers and his wife and business partner, Alicia, bought CFLs by the hundreds last fall on a shopping trip to Sam's Club. "I saw bulbs were on sale. I decided I'd try them out," he says.

They filled two buggies with eight-packs of 13-watt CFLs and six-packs of 23-watt CFLs, both on sale for about \$12 each. Another shopper commented, "Man, they must have a real good sale on light bulbs!" and the check-out clerk added, "You guys must have a lot of lamps," Childers notes.

Quartering the bill

Since the 23-watt CFL uses less than one-fourth of the electricity of a 100-watt incandescent bulb, the cost of lighting Nikross Farms' four chicken houses immediately dropped to one-fourth of what it used to be, according to Childers. "Instead of paying for four houses, I'm only paying for one house," he notes.

In addition to the 23-watt CFLs, Nikross Farms uses the 13-watt CFLs to replace 60-watt incandescent bulbs in the chicken houses. Each house is divided into three sections that are opened in succession to accommodate the growing birds. In the first section, called a brood chamber, lighting is used 23 hours a day, seven days a week for the birds' first week, Childers notes.

A different tack

Next door at Big Bidy Farms, the savings haven't been calculated, but then foreman is taking a slightly different tack on using

CFLs. Big Bidy Farms is using special, dimmable 5-watt CFLs, which create about the same amount of light as a 30-watt incandescent, instead of 40-watt incandescent bulbs.

The dimmables are cold cathode CFLs, which are designed for long product life, instant-on, operation in very cold conditions and full dimming capability. In some special applications, like theater marquees, cold cathode CFLs are desirable because of their ability to rapidly flash on and off.

In conventional CFLs, like the ones in use at Nikross Farms, a hot cathode made of tungsten wire coated with barium carbonate emits electrons. The electrons pass through mercury vapor and generate ultraviolet light. It doesn't take much energy to release these electrons, but the lamp can take a minute or two to reach full brightness.

The cathode in a conventional CFL wears out after about 8,000 to 10,000 hours of use. The Energy Star-qualified CFLs are conventional, hot cathode bulbs with an expected life of 10,000 hours of use. In contrast, a standard, incandescent bulb usually works for about 1,000 hours of use.

The dimmable 5-watt CFLs used at Big Bidy Farm have a projected life of 25,000 hours. However, they also cost much more – about \$11.40 each, although Big Bidy Farms purchased theirs for about \$5.50 each, Lenox says.

Friendly competition

Childers says he'll consider investing in the dimmable CFLs but for now, he's still coming out ahead on energy savings with non-dimmable CFLs. Because regular CFLs are not designed for use in a dimmable lamp, many of these CFLs will not last as long as they normally would. Childers isn't concerned, however. "Even with buying \$50 for replacements, which is not too often, I'm still saving \$600 savings a month on electricity," he notes.

Some CFL manufacturers caution against using regular CFLs in dimmable lamps due to fire hazards. However, Childers says he contacted Phillips, the manufacturer of the CFLs he purchased, and was told the only problem would be shorter bulb life. Childers has not had problems with his CFLs otherwise, he says.

Childers says the dimmable, 5-watt CFLs aren't bright enough to suit him but says he'll reconsider using them if Lenox's birds come in at a good weight. For his part, Lenox says he's pleased with the low-wattage CFLs, noting that chickens are extremely light sensitive – a point he proves by brightening the lights briefly inside the house. Right away, the birds respond noisily – almost as if Lenox is controlling the volume on a stereo.

He likes the dimmable CFLs. "I leaning to these. I enjoy these. I think this is a good idea," Lenox says. "I'm liking what I'm seeing so far."

Like Nikross Farms, Big Bidy Farm uses computerized control system, and Lenox says a key indicator of good chicken growth – water use – is right on target since the switch to CFLs. "According to the computer, it's doing the job," he says. "Water seems to tell you a lot about birds."