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Georgia Interfaith Power & Light engages communities of faith in stewardship of God's creation as a direct reflection of our faithfulness through worship, education, and the sustainable generation and efficient use of energy.

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## Compact Fluorescent Lights vs. Incandescent Bulbs ENERGY and \$\$\$ SAVINGS

**Q. What is a Compact Fluorescent Light Bulb (CFL)?**

**A.** A compact fluorescent light bulb (CFL) is fluorescent lighting designed to be used in a standard (incandescent) light bulb socket. Fluorescent lighting works by passing a current through a gas-filled tube. Incandescent light works by heating up a metal filament until it is white-hot. Incandescent bulbs produce mostly heat, which is why a fluorescent using only 13 watts of electricity can produce light comparable to an incandescent hogging 60 watts.

**Q. How does a CFL benefit the environment?**

**A.** Each 13-watt CFL, over the expected 10,000 hour life of the bulbs, will save 470 kilowatt-hours (kWh) of electricity as compared to 60-watt bulbs. This translates to a global warming-fighting reduction of over 730 pounds of carbon dioxide. It also means a reduction of 1.6 pounds of nitrogen oxides (which contribute to ozone and acid rain) and 4.3 pounds of sulfur dioxide (which contributes to haze and acid rain), and makes significant reductions in other impacts of coal-produced power such as mercury pollution and destruction of forest and stream habitats in mining areas.

**Q. Where can I use the CFL's?**

**A.** The 13 watt Micro-CFL is only ½ inch longer than a standard bulb. Though thicker near the base, it is smaller in maximum diameter. Therefore, it will physically fit almost anywhere an old bulb would. However, it **cannot be used in a fixture that is recessed and enclosed, on a dimmer, or anywhere it would be exposed to moisture**, without greatly shortening its lifespan. Desk, table, and floor lamps are ideal locations as are many indoor ceiling fixtures.

**Q. Don't CFL's cost more?**

**A.** Although a single CFL costs more initially, over the life of the bulb you actually save money. Here's a comparison of costs based on 10,000 hours of light (nearly 7 years if the light is on 4 hours per day):

|                                    | <u>CFL</u>          | <u>Incandescent</u>   |
|------------------------------------|---------------------|-----------------------|
| Energy Input (watts)               | 13                  | 60                    |
| Light Output (lumens)              | 810                 | 830                   |
| Useful life (hours)                | 10,000              | 1,500                 |
| # Bulbs for 10,000 hours           | 1                   | 6.7                   |
| Bulb Costs                         | 1 @ \$4.00 = \$4.00 | 6.7 @ \$0.32 = \$2.14 |
| Electricity Used (kilowatt hours)  | 130                 | 600                   |
| Electricity Cost (@ \$.08 per kwh) | \$10.40             | \$48.00               |
| Total Cost (Electricity + Bulb)    | \$14.40             | \$50.14               |

**Cost saving in using a CFL - \$35.74, or 71%!**

**Q. This all seems too good to be true. What criticisms have been leveled against CFL's?**

**A.** The following points have been raised.

1. The above cited limitations: no use in recessed and enclosed, dimming, or outdoor fixtures. Actually, specialty fluorescent lights exist for these situations, but you may have to look a little harder to find them.
2. Some people dislike the noticeably “cooler” light spectrum of older fluorescents. These CFLs produce warm white” light.
3. Some poor-quality CFLs do not live up to claims of longevity. The Autocell brand provided was carefully selected by Georgia Interfaith Power and Light (GIPL) and comes with a seven-year warranty.
4. Some fluorescent lights have a lag time after the light switch has been turned on. These CFLs are “instant-on”, with a delay less than a second.
5. Some people say they detect a “flicker” in traditional fluorescent bulbs. These CFLs are described as “flicker-free”.
6. There is a concern about mercury, which is present in all fluorescents. The amount of mercury sealed in each CFL is less than 1/100 that in a mercury thermometer. It is also less than the amount of mercury the CFL spares the environment because of coal not burned. Theoretically we should be disposing of all our used mercury-containing products by appropriate hazardous waste methods. So after the long, long useful life span of a CFL is over, we recommend disposal through hazardous waste handling systems, but it is not obligatory to do so. A few progressive recycle facilities have found reclamation markets for fluorescent lights.

### **Other ways to save on lighting**

Saving lighting costs goes way beyond turning off the light switch when you leave the room - although that's still a good idea! Besides replacing your incandescent lights with CFL's, here are other low-cost actions you can take to save energy and money:

- When buying bulbs, look for the highest lumens-per-watt ratio. Lumens measure the amount of light a bulb gives off, while watts measure how much energy a bulb uses. A typical lumens-per-watt ratio for an incandescent bulb is 15:1. This compares to 60:1 for a fluorescent bulb.
- Use brighter bulbs in areas where you do close-up work such as reading, cooking and home projects. Use dimmer light in other areas.
- Keep light bulbs and fixtures clear of dust and other particles. Clean bulbs give off more light than dirty ones.
- Use natural light whenever you can. Make the most of natural light by moving desks, reading chairs and workbenches closer to windows. Keep in mind that lighter colors for walls, ceilings and floors reflect more light.
- Replace outdoor floodlights with halogen lamps, or use motion detectors. A 50- or 90-watt halogen lamp can replace a standard reflector bulb that has twice the wattage. Motion detectors save energy and money by turning on lights only when needed.

**For more information on how you can conserve energy and get your faith community involved please contact Georgia Interfaith Power & Light.**

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