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Energy Efficient Lighting---Compact Florescent Light Bulbs (C.F.'s) & Light emitting diodes (LED'S)

By Matt Seigel

Most of the regular screw in type incandescent light bulbs such as in lamps and overhead fixtures can be replaced with compact florescent bulbs that give the same amount of light yet use 1/4th of the electricity. (ie., a 100 watt incandescent bulb can be replaced with a 25 watt CF bulb) Incandescent light bulbs give off a lot of heat and if many are used, an extra load and cost is placed on air-conditioning units.

A totally solar home built in Asheville in 1993 put in over 50 CF's at a cost of about \$21.00/each. Three light bulbs have burnt out in 12 years. Over the past ten years, with improved technology and increased production the cost of CF bulbs has been reduced drastically. Today compact florescent light bulbs are also available as spot lights, flood lights, three-way, dimmable lights and in many wattages. Incandescent bulbs cost about \$1.00/each and have to be replaced quite often.

Recently while in St. Louis, for a home connected to the power company about 50 CF's were bought from Lowe's for about \$2.50/each and put in this home. There were at least a dozen bulbs missing from fixtures and another dozen that were burnt out. Now, not only will their electric lighting bill be one-fourth of what it was previously, but in a 32 page article on renewable energy in a recent issue of National Geographic Magazine, it was stated that for just putting in one CF bulb it will eliminate the need to burn 500 pounds of coal, over the life of the bulb. In addition to the savings this one home will eliminate the need to burn 25,000 pounds of coal. Burning coal puts mercury and other pollutants in the air. A recent article in the Asheville Citizen Times indicated that in a health study in Haywood County, one out of eight school children had asthma or breathing related illnesses.

If every building in North Carolina would put in CF bulbs where practical, the energy savings would be over a billion dollars. Since 60% of the electricity in North Carolina comes from coal and six billion dollars are spent on energy to states outside of North Carolina, this would result in much, much lower electric bills, an increase of dollars kept in our state economy and the elimination of a great deal of airborne pollution from the burning of millions of tons of coal.

The newer type of lighting is Light Emitting Diodes (LED's) that use 90% less electricity than an incandescent bulb, last over 50,000 hours and give off little heat. Currently these are relatively expensive yet the cost is coming down. LED's are being used in traffic lights and appear to be a bunch of bright dots. The U. S. Department of Energy predicts that this new technology could eventually save \$125 Billion in U. S. household electric bills per year.

For more information about green building or how to become a member or volunteer please visit our web site <http://www.wncgbc.org>. You can find upcoming events, links and information on modern building practices and energy related issues. Please contact us with any questions at: The Green Building Hotline-Call 828-232-5080 or email

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