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Save the Light Bulb!

Compact fluorescents don't produce good quality light.

By HOWARD M. BRANDSTON

The Energy Independence and Security Act of 2007 will effectively phase out incandescent light bulbs by 2012-2014 in favor of compact fluorescent lamps, or CFLs. Other countries around the world have passed similar legislation to ban most incandescents.

Will some energy be saved? Probably. The problem is this benefit will be more than offset by rampant dissatisfaction with lighting. We are not talking about giving up a small luxury for the greater good. We are talking about compromising light. Light is fundamental. And light is obviously for people, not buildings. The primary objective in the design of any space is to make it comfortable and habitable. This is most critical in homes, where this law will impact our lives the most. And yet while energy conservation, a worthy cause, has strong advocacy in public policy, good lighting has very little.

Even without taking into account people's preferences, CFLs, which can be an excellent choice for some applications, are simply not an equivalent technology to incandescents in all applications. For example, if you have dimmers used for home theater or general ambience, you must buy a compatible dimmable CFL, which costs more, and even then it may not work as desired on your dimmers. How environmental will it be for frustrated homeowners to remove and dispose of thousands of dimmers? What's more, CFLs work best in light fixtures designed for CFLs, and may not fit, provide desired service life, or distribute light in the same pleasing pattern as incandescents. How environmental will it be for homeowners to tear out and install new light fixtures?

None of these and other considerations appear to have been included in the technical justification for this law. Instead, the decision appears to have been made entirely based on a perception of efficiency gains. Light-source efficacy, expressed as lumens of light output per watt of electrical input, has been used as a comparative metric justifying encouragement of CFLs. But this metric is flawed for one simple reason: It is a laboratory measurement and a guide, not a truth, in the field; actual energy performance will depend on numerous application characteristics and product quality.

If energy conservation were to be the sole goal of energy policy, and efficacy were to be the sole technical consideration, then why CFLs? If we really want to save energy, we would advocate high-pressure sodium lamps—those large bulbs that produce bright orangish light in many streetlights. Their efficacy is more than double what CFLs can offer. Of course this would not be tolerated by the public. This choice shows that we are willing to advocate bad lighting—but not horrible lighting.

Not yet, at least. Energy regulations pending in Washington set aggressive caps on power allowances for energy-using systems in commercial and residential buildings. These requirements have never been tested.

Here's my modest proposal to determine whether the legislation actually serves people. Satisfy the proposed power limits in all public buildings, from museums, houses of worship and hospitals to the White House and the homes of all elected officials. Of course, this will include replacing all incandescents with CFLs. At the end of 18 months, we would check to be certain that the former lighting had not been reinstalled, and survey all users to determine satisfaction with the resulting lighting.

Based on the data collected, the Energy Independence and Security Act and energy legislation still in Congress would be amended to conform to the results of the test. Or better yet, scrapped in favor of a thoughtful process that could yield a set of recommendations that better serve our nation's needs by maximizing both human satisfaction and energy efficiency.

As a lighting designer with more than 50 years of experience, having designed more than 2,500 projects including the relighting of the Statue of Liberty, I encourage people who care about their lighting to contact their elected officials and urge them to re-evaluate our nation's energy legislation so that it serves people, not an energy-saving agenda.

Mr. Brandston (www.concerninglight.com) is a lighting consultant, professor and artist.

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