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A Defense of the Incandescent Light Bulb

By [Leora Broydo Vestel](#)



Concerninglight.com “The quality of light from the compact fluorescent is about the worst of the major light sources manufactured today,” said Howard Brandston, a lighting designer.

Howard Brandston, an award-winning lighting designer, has worked on a number of high-profile projects in his career — from a makeover of the [Statue of Liberty](#) in the 1980s to helping to develop the nation’s first standards for energy-efficient building design.

Now, amid a [growing raft of legislation around the globe aimed at phasing out the standard incandescent light bulb](#) (and in some corners, [popular resistance to that idea](#)), Mr. Brandston is stepping out of retirement and into the [debate over energy-efficient lighting](#).

Specifically, Mr. Brandston accuses “energy zealots” of using faulty science to determine the efficiency of light bulbs, and he says that simplistic lumens-per-watt comparisons obscure questions of how well different bulbs do what they’re supposed to do: light up a room.

The government, manufacturers and efficiency advocates, in pushing the adoption of compact fluorescents, are “forgetting the lamp has to serve a purpose for the area it’s lighting,” Mr.

Brandston said in a recent series of chats with Green Inc. “It has to work within a system which includes the luminaire — the fixture — and it has to work within the room. The room is part of that system. And when you ignore the fixture, the room and the purpose, you’re going to come up with something that is not going to serve well.”

“The system efficiency is really what counts,” Mr. Brandston added, “not lumens per watt, not how much light per watt is produced, but how much of that produced light is actually put to purposeful use.”

Excerpts from an interview with Mr. Brandston follow.

Q.

You’re not happy with [the direction the government is going](#) with respect to setting efficiency mandates for lighting products. Why not?

A.

I think the government's use of lumens-per-watt as a metric is a mistake. It doesn't follow lighting practice. It's one tiny part of what lighting design is all about. And by using that one metric, you are limiting the choices of all lighting designers and not following good lighting practice.

Q.

But is lumens-per-watt an accurate measure of efficiency?

A.

It's not even an accurate measure of efficiency because in order to make their case they are to some extent misrepresenting the value of these lamps that they're suggesting, which are compact fluorescents to replace incandescents. That is the biggest issue.

The quality of light from the compact fluorescent is about the worst of the major light sources manufactured today. And, aside from that, they don't say anything about the problems of disposing of these lamps, nor do they talk about the additional power that it costs to manufacture these lamps. When you look at how they work, the entire process they are suggesting is filled with errors. And it's misleading.

Q.

What's a more accurate way to measure efficiency, in your opinion?

A.

The only way to really look at efficiency in a lighting system is to do a system analysis. It is the installed working operation of the system, not the lumens-per-watt of the lamp. You have to do a total holistic system evaluation to tell the true cost and the true energy savings.

Q.

This doesn't sound like something everyday people can figure out. Are you saying we need to hire lighting designers to find the best solution for lighting our homes?

A.

You don't need to hire a professional. Your basic subjective judgment is all you need. What really would be nice is if the federal government would not mislead the public and seduce them into doing things which are really inappropriate.

But the average person's subjective judgment that they utilize when they buy their clothes, when they buy their furniture, when they buy whatever, is more than adequate.

Q.

Are you saying that if people like incandescents, it's the smarter choice in terms of efficiency?

A.

I'm saying that in all probability, in a residential application, I think they would be more efficient. Using my home system as an example, I have literally dozens of incandescent lights in here. The quality of light in this house is superb, as one would expect from a lighting designer like me, but the interesting thing is, since I put a 1,250 square foot addition on here 12 years ago, I've been tracking the life of the lamps. And in that 12 years I've replaced 3 lamps. This is under normal residential use, and a fully occupied dwelling.

The calculations used by the government and others promulgating or promoting use of compact fluorescents is strictly mathematical conjecture and nothing to do with reality.

Q.

How do dimmers and other devices factor into all this?

A.

That is a big factor. My house does have dimmers on almost all of the lights. And that is part of the reason why we've replaced so few lamps.

If someone really wanted to do a green household, they could use dimmers, they could use occupancy sensors to turn off the lights in case they forgot to. Control of the light is really the most energy efficient way to gain benefit. If you dim an incandescent lamp from 120 volts to 110 volts you will increase its life by approximately three times. If you dim it a little more, you increase it even more. And then they will surpass the lifespan of a compact fluorescent lamp.

Q.

You take particular issue with the way government is pushing efficiency, but it is fueling the development of new technologies such as LEDs. Isn't this positive?

A.

The biggest boost in new light sources came during the energy crisis when all kinds of progress was made and that has been continuing nonstop because this is an important issue.

But hoping that lighting is going to make a major contribution borders on ridiculous. The real areas that should be looked at that would make big gains are in all commercial office buildings if they raised the temperature in the summer that they would cool to and lowered the temperature that they would heat to, and gave everybody a sweater or allowed them to come lightly dressed in the summer, we would save more energy in a few months than all the lighting watts per square foot baloney that's going on now.

Q.

Don't you think it's worthwhile to attack the problem from all angles?

A.

I think we should be attacking this from all angles, but not change the light bulb. ... Control the amount of time you have the lights on, and you will do well. People leave the lights on all the time. We've got to get new habits. We'd be better off promoting occupancy sensors and dimming controls and recommending all dimmers be set to only provide 95 percent of the power to the light sources. Then we would be making real headway.