

A VIEW ON ENCOURAGING THE USE OF NEW LIGHT SOURCES AND PERFORMANCE

Don't light my home with toasters; don't toast my bagel with LEDs.



By David Bergman

We can all cite examples of inefficient government rules and policies and easily cite counterpoint examples of regulations that have saved lives and lowered costs. We can also point to inefficient business policies and failures. That is to say, government isn't always wrong and the so-called free market isn't always right.

In a perfect world, the free market can be a wonderful mechanism, but for all its strengths and accomplishments, capitalism has a bunch of flaws. Perhaps its biggest has to do with accounting for usage and destruction of public goods – what economists love to call externalities.

Where am I going with this dry Economics 101 lecture? Well, there's been a lot of (misplaced in my opinion) criticism of EISA, aka the incandescent light bulb "ban."

STYLE AND SUSTAINABILITY

David Bergman's Fire & Water™ studio (www.cyberg.com) creates lighting, furniture, and other furnishings dedicated to sustainable principles. He makes use of the latest light source technology and is always in search of interesting recycled and repurposed materials.

For the cycLED design, Bergman employs a salvaged bicycle wheel adorned with panels of recycled glass pebbles. Built to order, the chandelier can be fitted with color-changing or white LEDs as well as MR16s. With a 25-inch diameter, it can also be customized by height.



I look at this from a somewhat unique vantage: that of an architect, light fixture designer, environmentalist, and (if you count my ancient undergraduate degree) economist. I want to present a flip side to Marty Glantz's recent columns on the effects of EISA. In his columns, Glantz creates the impression that the passage of EISA was over the opposition of the lighting industry and represented a failure of the industry's influence – points which I think are wrong.

It may be the circles I travel in, but among the folks I speak with, most agree the goals of EISA are sound. Furthermore, its methods – achieving them through performance standards rather than specific bans – is the right way to do it. One example of this industry support is the Designers Lighting Forum of New York's editorial "Ban the Bumbling" at <http://dlfny.org/editorial.htm>. (Full dis-

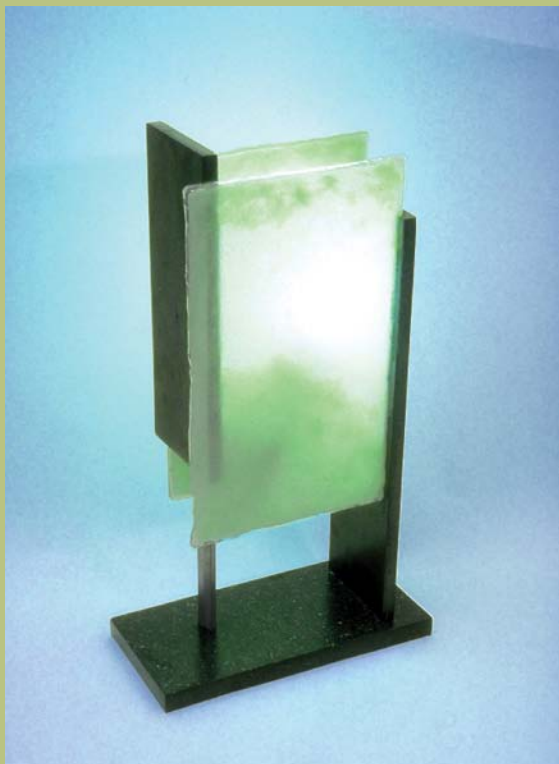
closure: I'm on the DLFNY executive board, but did not write the editorial.)

The most egregious claims of opponents are that it is a ban and represents an overreach of government, intruding in the market and restricting our freedom. I don't need to address the mischaracterization of the regulations as a ban, since incandescents (or any other light source) are not banned – no more than was there anything in car fuel efficiency standards that banned internal combustion engines.

The analogy to car fuel efficiency is a helpful one. The justifications for standards are quite similar: diminishing consumption of fossil fuels in the interest of national security and decreasing environmental degradation in the interest of public health and its costs. I also have a deep-seated antipathy to heavy-handed government and unnecessary bureau-

cracy, but one of the primary and essential purposes of government is to look out for the public good. For instance, when regulations are put in place, it is usually because industry does not have adequate incentive to protect workers or the public. When environmental limitations are created, generally it is because the free market isn't taking relevant costs like pollution into account. It's pretty obvious, for example, that fossil fuel prices do not include the costs of pollution, climate disruption, or other impacts. The same could well be said of light bulbs.

That kind of situation is exactly where government intervention is needed. Without regulations or pollution fees, industries' costs are understated and consumers are making decisions based on misleading prices. If all those pesky external costs were included, then the prices we pay at the pump or the store



The Frankie Goes Fluorescent series features dimmable CFLs with integral ballasts. The family of table lamps, pendants, and sconces shows off sustainable materials with artistic grace. The diffusers are made from recycled glass (although art glass may be specified) and the solid material is a bio-composite of soy flour and recycled paper.



The Flipster portables, sconces, and ceiling fixtures include the Vivid group in striking colors. The resin, steel, and Environ® bio-composite contain 40 percent post-industrial recycled material. All are lamped with 26-watt GU24 CFLs.

would automatically reflect health and pollution costs. Obviously, some things would cost more, but other things, such as health care or taxes to pay for pollution clean ups, would go down.

Although lighting's energy consumption certainly doesn't rival transportation, it's far from insignificant. According to the U.S. Energy Information Agency (www.eia.gov), 14 percent of residential electricity consumption is due to lighting. Of that, the majority (says the DOE EERE) is consumed by incandescent lamps. (It's somewhat less, though still not insignificant, in commercial buildings as they have less reliance on incandescents.) So we have a significant portion of our energy being consumed by a light source that is less than 10 percent efficient and functionally not much better than lighting our homes with toasters. (Toasters are slightly better at making heat.) That sounds like low hanging fruit to me.

This is where the government needs to intervene, setting the market right. Is that bad for the lighting industry? Not at all. Historically, industries have initially resisted all sorts of safety and environmental standards, fearing they would be too expensive or consumers wouldn't want them and that businesses would consequently fail. Air bags are a classic example. Car makers fought the requirements for years, saying it would be too expensive. Not only did the costs prove to be much less than they predicted, air bags turned out to be a major selling point.

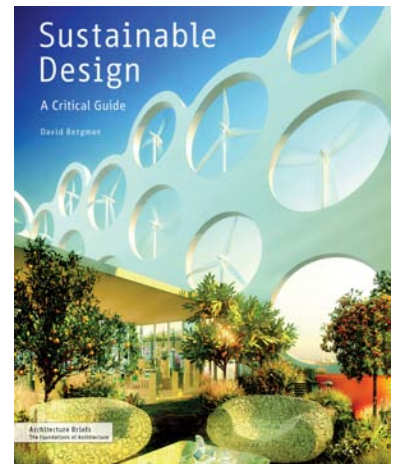
Efficiency standards such as ENERGY STAR and CAFE have not stifled industries or diminished progress. They have not restricted liberties in some undemocratic way. It's doubtful we'd have hybrid or electric cars

or refrigerators vastly more efficient than we used to if not for those "market interventions." Arguably, they've resulted in *more* choices, not fewer. In the case of lighting efficiency standards, the new regulations jump-started LED and OLED research and development. There's no doubt that we wouldn't be seeing LED prices falling to a fraction of what they were a couple of years ago if manufacturers didn't know there was a huge market on the very near horizon.

This has also created a very exciting time for our industry. After a century of relying on basically the same technology, we now have the opportunity to reinterpret and reinvent lighting. It's not only a matter of gaining efficiency. We're just beginning to see the arrival of a flood of not merely new designs, but new *types* of designs: ways of creating and delivering light that were unimaginable only a decade ago. These also represent the potential of new businesses and jobs, replacing and perhaps exceeding those lost in the transition.

Would we have gotten there without government policies pushing and pulling? Perhaps, but it certainly would have taken much longer and would have, in the intervening time, incurred far more environmental costs.

I agree with Marty Glantz on this point: the idea of creating a regulation and then removing funding for its enforcement is political machination at its worst. I wouldn't call this a stay of execution, however. We should really use it as a sort of seventh-inning stretch, a breathing period during which we can take stock of the part our industry will have in improving our world and then work on communicating all the benefits of that role, both to ourselves and the public. ❖



David Bergman runs a New York City-based multi-disciplinary design studio embracing commercial and residential architecture and interior projects, as well as product design and research. With 25 years of experience, his work has evolved to support sustainable and ecological design principles. Fire & Water, Bergman's lighting company, was created 15 years ago to produce custom designs and has grown to include several eco-conscious lines. Bergman teaches at Parsons the New School for Design, where he has developed core sustainable design courses in four departments. He is currently working on several books on eco design. Sustainable Design: A Critical Guide has just been released by Princeton Architectural Press.

Bergman is on the executive board of the Designers Lighting Forum of New York. He received a Master in Architecture from Princeton University, and a Bachelor of Arts in architecture and economics from Yale University. He is a New York State-registered architect and a LEED-Accredited Professional®.