# Brainstorm: Optoelectronics

*What is your opinion on the incandescent ban?*

**Don Mulvey, ROAL Electronics,** www.roallivingenergy.com **[1]**

The incandescent ban is both good and bad at the same time. As the head of sales for an LED Driver manufacturer, I think I welcome the ban because it could make my job a little bit easier. There are so many manufacturers (good and bad) trying to push product through the traditional lighting sales channel that the message gets a bit blurry and misshaped by the time it reaches the end customers. The ban has brought proper emphasis on the key benefits such as efficiency and life.

As an individual, I do not welcome the ban. I am not a supporter of increased government action of any form that restricts individual choices. Banning any device that does not pose an immediate danger to the consumer is a dangerous step in the wrong direction for government policy. If the governments' intentions are to truly protect the consumer, and help this fledgling technology, perhaps it should ban all the low quality, low performance "garbage" LED bulbs as well. They are damaging SSL expectations daily. This would of course be less than ideal because someone still needs to segregate the "garbage" from the good stuff. We should leave such outcomes to the free market.

I think the best way for government to get involved and influence the outcome is through subsidies. Through subsidization, the SSL adoption process could be accelerated safely and democratically without the need for enacting new laws.

**Richard T. Halliday, Lumex,** www.lumex.com **[2]**

The advantages of alternative technologies like LEDs with reduced energy consumption and waste heat are widely known. At Lumex, we are supportive of the current gradual implementation of banning incandescent lighting. However, the incumbent replacement technology to incandescent is the CFL, which has both performance and hazardous materials challenges. LED lighting is the next logical

step in commercial, industrial, municipal and residential lighting.

The ban on incandescent creates two real opportunities for LED lighting. First, there is an opportunity to provide LED technology to replace existing lighting infrastructure. Secondly there exists an opportunity to use a new generation of technology to get more creative in our approach to the use of light.

LED technology offers almost limitless options for planning how to light a space, from high brightness light panels to sensor driven auto-dimming directional LED arrays. Value-added LED solutions include optics, thermal management, variable brightness intensity and color temperature options and are well suited for these more innovative applications. The ban being implemented on incandescent bulbs has given us all an opportunity to not just to reduce energy consumption but also to be creative about how and where illumination is being used.

**Steve Bowling, Microchip, www.microchip.com** [3]

The Energy Independence and Security Act of 2007 set in motion a plan that will phase out standard incandescent bulbs in the U.S. between 2012 and 2014.  Most of the incandescent bulbs in my home have already been changed to CFL technology, so I probably won't notice the ban.  My new CFL bulbs consume a fraction of the energy of incandescent bulbs, so I can't imagine going back.

However, I am not satisfied with the quality of light provided by CFL bulbs.  Most of the bulbs in my home take a long time to warm up and produce full light output. And, the color rendering provided by these bulbs leaves a lot to be desired.

I hope that LED technology will provide a better solution, but we still have a long way to go in technology development.  A good quality LED bulb costs a lot more than the incandescent or CFL equivalents.  Some of the low-cost LED bulbs released to the market have done nothing to help the reputation of LED technology with consumers. I support the ban on incandescent bulbs, as long as it drives lighting suppliers to develop better solutions than the alternatives we have now.

**Dan Jacobs, TT electronics OPTEK Technology, [www.optekinc.com](http://www.optekinc.com)**
[4]
The incandescent ban will be a step in the right direction for energy efficiency because incandescent bulbs are no longer economical. We can compare initial and long-term cost between the incandescent, CFL, and LED products by looking at usage.  Today the 40-watt incandescent bulb costs roughly $0.50 to consumers and produces about 600 lumens. Comparable CFL products consume 15 watts and cost about $2.50, and 600-lumen LED products use 10 watts and cost $15. Two years is a reasonable period to compare return on investment. For low-use applications such as in bathrooms that require bulbs be on for only one hour per day, a CFL bulb ends up costing less than the incandescent bulb after just over two years assuming electricity costs $0.10 per kWh. Moderate-use applications such as kitchen lighting require about six hours of operation per day, and CFL bulbs are easily the most cost effective. For extremely carbon-conscious consumers, the LED source also will be cheaper than an incandescent bulb within two years and saves the most energy. For high-use applications approaching 24-hour per day operation, LED products are the most cost effective of all three within two years. Since CFL and LED products last much longer than two years, the economic and environmental savings get better from there.

**Susan Anderson, OSRAM SYLVANIA, [www.sylvania.com](http://www.sylvania.com)**
[5]

OSRAM SYLVANIA supports the Energy Independence and Security Act of 2007 because it helps America be more energy efficient and reduce greenhouse gas

emissions through new lighting efficiency standards.

We intend to address the phase out of incandescent lamps with a phase in of more energy-efficient lighting choices.

An annual poll called the SYLVANIA Socket Survey tracks awareness and opinions about the incandescent phase out. Results from the 2009 survey indicate 66 percent of Americans plan to switch to halogen, compact fluorescent or LED lamps when the first phase of the legislation takes effect in 2012.

Users who are ready to switch have more choices than ever. A good example is our new line of halogen lamps, which meets the 2012 lighting efficiency standards today. SYLVANIA Halogen SUPERSAVER® lamps are direct replacements in all applications and deliver the lighting quality that end users experience with incandescent lamps, while providing up to 29 percent energy savings.

In addition to halogen lamps, we're introducing next-generation compact fluorescent and LED retrofit lamps to replace incandescent lamps. These innovations will give users affordable and energy-efficient lighting choices, even after old fashioned light bulbs have gone away.

**Gary Trott, Cree, www.cree.com** [6]

The ban of the incandescent bulb brings an opportunity to drive more innovative and energy-efficient lighting alternatives, such as LED lighting, to the forefront of the market.

Retrofits and new installations are already taking place in all types of venues from residential kitchens and fast food restaurants to hotel lobbies and landmark office buildings. In all cases the owners and occupants are experiencing a better quality of light, reduced energy consumption, and reduced maintenance costs.

But one of the biggest barriers to adoption right now is awareness. The ENERGY STAR program is helping this, but consumers almost have to be re-educated about energy-efficient lighting.  That's because today, most lighting is categorized by

Watts consumed—not by light output, color quality or lifetime.  I mean, do you know how many lumens your 60 Watt lightbulb puts out?  So the incandescent ban is accelerating general awareness about these qualities. And that's a good thing.

But this ban really marks an exciting and long-awaited transition from traditional, inefficient lighting to energy-efficient next generation technologies. So don't be afraid. Good quality, energy-efficient LED lighting is here. And think of other things that have been banned…DDT, lead paint, smoking in airplanes. None of those were good for us and really, does anyone miss them?



**Links:**
[1] http://www.roallivingenergy.com/
[2] http://www.lumex.com/
[3] http://www.microchip.com/
[4] http://www.optekinc.com/
[5] http://www.sylvania.com/
[6] http://www.cree.com/