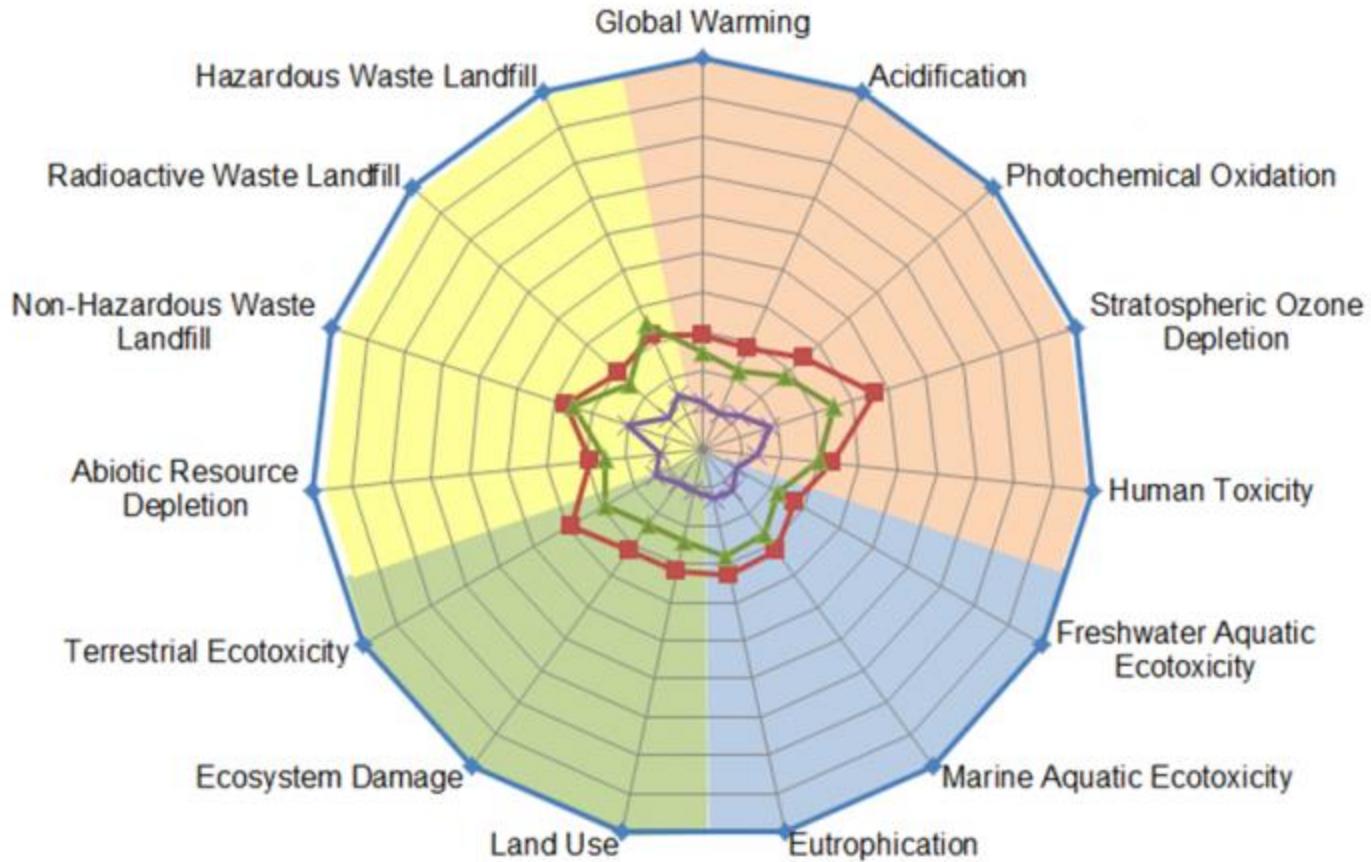


Things to know About LEDs

Resource Impacts

Air Impacts



Soil Impacts

Water Impacts

◆ Inc ■ CFL ▲ LED-2012 ✕ LED-2017

The Best Is Yet to Come



8 Things to know About LEDs

- ❖ **Light-emitting diode, or LED, is a type of solid-state lighting that uses a semiconductor to convert electricity into light.**
 - **Today's LED bulbs can be six-seven times more energy efficient than conventional incandescent lights and cut energy use by more than 80 percent**
- ❖ **A quality LED can have a life of 25K hours or more meaning they can last more than 25 times longer than traditional light bulbs.**
 - **That is a life of more than three years if run 24 hours a day, seven days a week**
- ❖ **Unlike incandescent bulbs which release 90% of energy as heat, LEDs use energy far more efficiently with little waste of heat**



8 Things to know About LEDs

- ❖ From traffic lights and vehicle brake to TVs and display cases, LEDs are used in a wide range of applications
 - Because of their unique characteristics, which include compact size, ease of maintenance, resistance to breakage, and the ability to focus the light in a single direction instead of having it go every which way
- ❖ LEDs contain no mercury, and a recent Energy Department study determined that LEDs have a much smaller environmental impact than incandescent bulbs.
 - They also have an edge over compact fluorescent lights (CFLs) that's expected to grow over the next few years as LED technology continues its steady improvement.



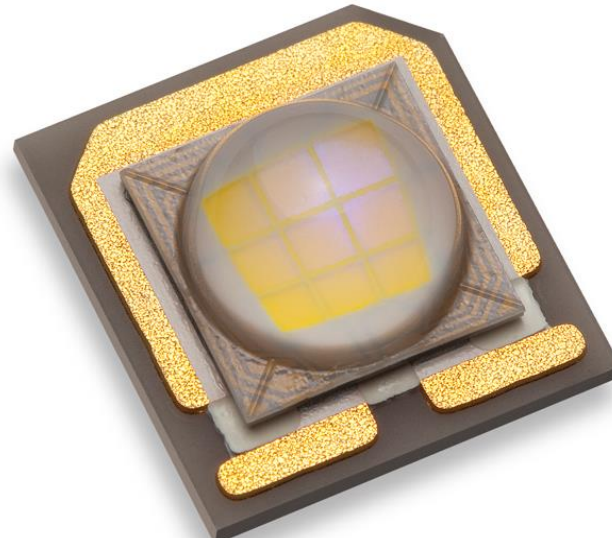
8 Things to know About LEDs

- ❖ **Since the Energy Department started funding solid-state lighting R&D in 2000, these projects have received 58 patents.**
 - **Some of the most successful projects include developing new ways to use materials, extract more light, and solve the underlying technical challenges.**
 - **Most recently, the Energy Department announced five new projects that will focus on cutting costs by improving manufacturing equipment and processes**
- ❖ **In 2012, about 49 million LEDs were installed in the U.S.**
 - **Saving about \$675 million in annual energy costs.**
 - **Switching entirely to LED lights over the next two decades could save the U.S. \$250 billion in energy costs, reduce electricity consumption for lighting by nearly 50% and avoid 1,800 million metric tons of carbon emissions**



8 Things to know About LEDs

- ❖ **1st visible-spectrum LED was invented by Nick Holonyak, Jr., while working for GE in 1962.**
 - **Since then, the technology has rapidly advanced and costs have dropped tremendously, making LEDs a viable lighting solution.**
 - **Between 2011 & 2012, global sales of LED replacement bulbs increased by 22%, cost of 60W LED bulb fell by nearly 40%.**
 - **By 2030, it's estimated that LEDs will account for 75 percent of all lighting sales**



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