



PG&E's Commitment to Advancing LED Technology:

A perspective for customers



“PG&E and other California utilities plan to create attractive customer incentives for cost-effective LED products that prove they can satisfy customer performance and energy-savings needs.”

David Alexander, Project Manager, PG&E



As a strong proponent of energy efficient innovations, PG&E shares the growing enthusiasm for light-emitting diodes (LEDs) and believes LED lighting has the potential to help customers save energy. To stay abreast of the rapid advances in LED technology, PG&E is actively investigating LED lighting technologies, and our Emerging Technologies and incentive program staff are working closely with the LED industry, Department of Energy (DOE), Environmental Protection Agency (EPA), and the standards and testing community.

Over the past few years, PG&E has shown its support for LEDs by providing incentives for specific LED products. We have offered incentives for LED exit signs and channel letter signage for several years, and in late 2007, we created a new incentive for LED refrigerated case lighting.

Nonetheless, PG&E is taking a cautious stance toward offering incentives for new applications of LED lighting. Below we discuss this perspective within the context of the near-term outlook for new general illumination LED products.

LED TECHNOLOGY TODAY

Simply wiring LEDs together with a power supply doesn't make an efficient fixture or lamp. LEDs are a completely different type of light source that require novel engineering strategies. Currently, most white LED technology is no more efficient than a compact fluorescent lamp (CFL). In some consumer products, LED lighting might be only slightly more efficient than incandescent.

The performance of LED lighting products varies greatly: some products perform very well, and some very poorly. In fact, many of the LED products tested in DOE's CALiPER program—designed to evaluate today's LED products—did not meet the manufacturer

claims for efficiency and light output (www.netl.doe.gov/ssl/comm_testing.htm). This discrepancy likely occurs because claims are based on the performance of LED modules as tested in the laboratory, rather than on the actual performance of the assembled LED product. Lack of testing standards may also contribute to the problem.

REASONS FOR OPTIMISM

Despite these issues, PG&E is optimistic about LED lighting. A few manufacturers have developed high performance LED lighting fixtures that take advantage of LED directionality and provide good thermal management. Reflecting these changes, the latest round of CALiPER testing showed several manufacturers closer to their performance claims—a promising development.

Further, work on LED components in the lab is advancing rapidly, raising expectations that manufacturers will be able to produce more high-performance products at lower cost.

Also encouraging are developments in the standards area. ENERGY STAR[®] efforts to develop standards have culminated in specifications that go into effect September 30, 2008 (www.netl.doe.gov/ssl/energy_star.html), and the first ENERGY STAR-labeled LED products are expected to be available on that date. PG&E fully supports these standards and is encouraging ENERGY STAR to extend the standards to emerging LED fixture categories.

PG&E'S INCENTIVE APPROACH

PG&E's goal is to ensure customers a positive experience with all products eligible for incentives. Experience has taught us the importance of first impressions in achieving this goal. For example, many early CFLs didn't perform as advertised—creating a lasting



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reputation of poor performance that has been difficult to overcome. PG&E is working with the LED community to avoid such problems, so that LED lighting will become a widely used option that provides long-term energy savings.

As ENERGY STAR labeling and industry-adopted testing standards come into effect, PG&E will work with the other California investor-owned utilities (IOUs) to develop new rebate programs for LEDs in specific applications. While these new rebates are being developed, PG&E will offer incentives through our Non-Residential Retrofit Customized Energy Efficiency Program [www.pge.com/biz/rebates/2007_incentive_application/index.html]. In addition, PG&E-supported third-party programs and partnerships may offer incentives for products that meet their program requirements.

SHOULD CUSTOMERS CONSIDER LEDS?

Yes—but potential users need to do their homework. DOE's Solid State Lighting website is an excellent source for understanding the current state of development. (www.netl.doe.gov/ssl). It's also important to sample the LED product being considered to ensure that it meets expectations.

NEXT STEPS

The Emerging Technologies program and incentive program teams of California's IOUs are collaborating and sharing in product assessments. This work will provide both IOUs and manufacturers the opportunity to evaluate new products with customer feedback on performance and satisfaction. We are eager to learn about LED products that are ready for product assessment. Please contact us at LED@pge.com if you have or know of an LED product that is a good candidate for evaluation.



Photo of LED task light courtesy of Finelite.