SOLID-STATE LIGHTING:

Guiding Market Introduction of High-Performance SSL Products

Realizing the maximum energy- and cost-saving potential of SSL hinges on broad market acceptance—and, in turn, on ensuring a good match between consumer expectations and product performance.

From independent product testing and demonstrations to competitions and consumer education, DOE and its partners implement an array of strategies to lay the foundation for successful SSL market introductions. *Photo courtesy of Lithonia Lighting.*

The U.S. Department of Energy has developed a comprehensive national strategy to guide market introduction of solid-state lighting (SSL) for general illumination. DOE's market development support plan draws on key partnerships with the SSL industry, research community, standards-setting organizations, energy efficiency groups, utilities, and others, as well as on lessons learned from the past. DOE's role is to:

- Help consumers, businesses, and government agencies differentiate good products and applications.
- Widely distribute objective technical information.
- Coordinate SSL market development activities among federal, state, and local organizations.
- Communicate performance targets to industry.

Pathways to Market

Market development support activities are closely coordinated with research progress to ensure appropriate application of SSL products and avoid buyer dissatisfaction and delay of market development. Activities include:

LED Lighting Facts. DOE's LED Lighting Facts® program is a product verification program to assure that LED lighting performance is represented accurately. Participation in LED Lighting Facts is voluntary and open to all who manufacture, sell, or promote the best in LED lighting. Those who take the pledge become part of a growing community of LED Lighting Facts partners across the lighting supply chain committed to supporting continuous improvement of SSL product quality. lightingfacts.com

GATEWAY Technology Demonstrations. Demonstrations showcase high-performance LED products for general illumination in a variety of commercial and residential applications. Demonstration results provide real-world experience and data on SSL product performance and cost effectiveness. Performance measures typically include before-and-after light levels, energy use, and light quality. Projects often include user and installer experiences, discussion of interface/control issues, lumen and color maintenance, and other key measures of how well the new luminaires perform their intended tasks. ssl.energy.gov/gatewaydemos.html

Municipal Solid-State Street Lighting Consortium. To help cities and other LED street lighting buyers make better, more informed purchase and installation decisions, DOE supports the Municipal Solid-State Street Lighting Consortium. The Consortium collects, analyzes, and shares technical information and experiences related to LED street and area lighting demonstrations. Membership is open to municipalities, utilities, and energy efficiency organizations. ssl.energy.gov/consortium.html

CALiPER. DOE's testing program provides unbiased information on the performance of a widely representative array of commercially available SSL products for general illumination. Test results guide DOE planning for research and development, design competitions, and other activities; furnish objective product performance information to the public; and inform the development and refinement of standards and test procedures for SSL products. ssl.energy.gov/caliper.html

L Prize. DOE's L Prize® competition challenges industry to develop products that meet "reach" performance goals and set leading-edge benchmarks for the industry. Winning products represent significant technology leaps forward, and aim to substantially accelerate America's shift from inefficient general lighting products to innovative high-performance lighting. lightingprize.org

Next Generation Luminaires. The Next Generation Luminaires™ competition recognizes excellence in the design of energy-efficient LED commercial lighting luminaires. Sponsored by DOE, the Illuminating Engineering Society of North America, and the International Association of Lighting Designers, NGL expanded in 2012 to include separate indoor and outdoor competitions. www.ngldc.org

Technical Support for Standards. DOE provides national leadership and support for the development of new test procedures and standards for SSL, working closely with the Illuminating Engineering Society of North America, the National Electrical Manufacturers Association, the American National Standards Lighting Group, and other organizations to accelerate the standards development process, facilitate ongoing collaboration, and offer technical assistance. ssl.energy.gov/standards.html

TINSSL. DOE's Technical Information Network for Solid-State Lighting (TINSSL) increases awareness of SSL technology, performance, and appropriate applications. A coalition of representatives from energy efficiency organizations and utilities participate in monthly meetings to share information and updates, working closely with DOE to produce SSL outreach materials and support outreach events and activities. ssl.energy.gov/technetwork.html

After rigorous testing and evaluation, an LED replacement bulb from Philips was awarded the first L Prize. *Photo courtesy of Midwest Energy Efficiency Alliance.*

Providing objective technical information is one way DOE helps consumers, businesses, and government agencies make sound decisions about whether, when, and how to apply solid-state lighting.

For More Information

For more information on the DOE SSL program, see ssl.energy.gov.

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