

SOLID-STATE LIGHTING:**GATEWAY
Demonstrations
Showcase SSL
Product Performance**

Through demonstrations, potential solid-state lighting (SSL) buyers can evaluate and refine their lighting requirements before making large-scale purchases.

The U.S. Department of Energy (DOE) GATEWAY Solid-State Lighting Technology Demonstration program features high-performance SSL products in general illumination applications. Results provide real-world experience and data on product performance and cost effectiveness. Performance measures include energy consumption, light output/distribution, and installation/interface/control issues. Qualitative performance is investigated via surveys of relevant user communities.

DOE assembles demonstration teams that match host sites with appropriate products and partners. Teams typically include a product manufacturer, a host site, and an energy efficiency organization or local utility where applicable.



GATEWAY demonstrations, such as this one at The Smithsonian American Art Museum in Washington, equip potential buyers with real-world data to support informed decisions about SSL. *Photo courtesy of Smithsonian American Art Museum.*

- **Manufacturers** provide products for demonstration and may assist in site selection and installation.
- **Host sites** provide locations for demonstrations, assistance with installation and evaluation/measurement, and a willingness to participate in activities related to the demonstrations, such as site visits, photography, and publicity.
- **Energy efficiency organizations and utilities** provide contacts with potential host site organizations and assist with related outreach and promotional activities.

GATEWAY attempts to identify projects that meet the three general criteria of saving energy, matching or improving illumination, and offering cost-effectiveness relative to the standard competing light source. Projects are typically identified by one or more non-DOE team members who are already interested in investigating LED lighting, and participation is entirely voluntary. Team members are neither restricted to a single team nor one particular project.



LED luminaires installed outside a newly constructed Walmart Superstore in Leavenworth, Kansas, achieved significant energy savings when compared to a theoretical baseline. The installation was based on the LED Parking Lot Performance Specification developed by the DOE Commercial Building Energy Alliances. *Photo courtesy of Walmart.*

GATEWAY Demonstrations Procedure



- **Application Screening:** Once products and sites are screened to ensure a suitable match, a “go/no-go” decision is made regarding the project based on preliminary energy and economic evaluations.
- **Team Formation:** Host sites and other team members are identified to carry out the demonstration. All roles and responsibilities are detailed in a consensus “teaming agreement.”
- **Laboratory Testing:** Concurrent with team formation, testing of sample products is conducted to establish or verify important measures of performance.
- **Installation:** Products are installed with appropriate pre- and post-measurements; additional demonstration steps are carried out, including any publicity and education events.
- **Evaluation:** Results are evaluated based on actual measured values, including energy and cost savings and related economic analyses, as well as qualitative occupant and user responses to the installation.
- **Reporting:** Results of successful demonstrations are widely publicized; results from long-term testing are released as they become available. While no sales of demonstrated products are assured, DOE expects large-scale product purchases or promotions by demonstration team members will also occur for products that have performed to buyers’ satisfaction.

Sharing Results

Results from DOE GATEWAY demonstrations enable users to evaluate and refine their lighting requirements before making large-scale purchasing decisions. Demonstration project results are shared through the DOE SSL website, workshops, webcasts, articles in trade publications, and other related activities. Final reports on GATEWAY demonstration projects are available for download at ssl.energy.gov/gatewaydemos_results.html.

How to Participate

Any member of a potential team can propose projects for consideration by GATEWAY. A manufacturer may identify a site that is interested in an independent product evaluation, for example, or a utility may be interested in comparing a number of products across a given application. Program information is available at ssl.energy.gov/gatewaydemos.html. The GATEWAY

program cannot pursue all inquiries, but when submissions are selected, the evaluation follows the general procedure outlined above.

Demonstrations are also conducted through the Municipal Solid-State Street Lighting Consortium, established by DOE to leverage the efforts of cities evaluating LED street lighting. The Consortium collects, analyzes, and shares technical information and experiences related to LED street lighting demonstrations, enabling participants to tap into a vast body of field data and knowledge. Learn more about the Consortium at ssl.energy.gov/consortium.html.



LEDs (middle two fixtures) replace high-pressure sodium lighting in this parking garage at the Providence Portland Medical Center. Photo courtesy of Pacific Northwest National Laboratory.

For More Information

For more information on the GATEWAY program, see ssl.energy.gov/gatewaydemos.html.

EERE Information Center

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