

# Frequently Asked Questions About DOE's Solid-State Lighting Technology Demonstration Program

January 16, 2008

## What is the DOE Solid-State Lighting (SSL) Technology Demonstration Program?

A number of solid-state lighting (SSL or light-emitting diode, LED) products intended for general illumination applications offering significant improvements over conventional lighting technologies are poised for near-term commercialization. The DOE SSL Technology Demonstration program is intended to identify and assist in the early adoption of those high performance products that offer users real value through significant, rather than merely incremental, improvements over the current best competing products.

DOE intends to assemble a number of Technology Demonstrations for this purpose. A limited number of advanced LED products suitable for demonstration will be identified. Eligible products will be those either recently introduced to the market or on the verge of introduction. Eligible products will be installed at demonstration host sites, where their performance can be evaluated, and project results can be widely shared.

DOE's SSL Technology Demonstrations are open to all participants for FY 2008, subject to certain limitations (see "Who Can Participate in DOE's SSL Technology Demonstrations?"). Potential participants are encouraged to submit their expressions of interest using the application forms available at:

<http://www.netl.doe.gov/ssl/techdemos.htm>

Please download the appropriate "Intent to Participate" form for your organization, answer all questions, and save a copy for your records. Send completed application and any questions to:

[techdemos@pnl.gov](mailto:techdemos@pnl.gov)

Requested information from potential participating manufacturers, host sites, and utilities or energy efficiency organizations by the use of the "Intent to Participate" forms is limited only to details that will facilitate the initial evaluation of product and project suitability, and can be submitted electronically. In order to better respond to these expressions of interest, Pacific Northwest National Laboratory (PNNL), on DOE's behalf, will review submissions as they are received, and will only request additional information as needed. Demonstrations will be implemented on a "first-come, first-served" basis. **In order to be considered for DOE's SSL Technology Demonstrations in the first half of 2008, your "Intent to Participate" form must be received no later than close of business on May 30, 2008.** A solicitation for the rest of 2008 will be released on or before July 1, 2008.

## Who Can Participate in DOE's SSL Technology Demonstrations?

The DOE SSL Technology Demonstration program is open to the following eligible participants:

- Manufacturers or product teams nearing commercialization with their SSL products intended for residential, commercial and industrial lighting applications;
- Demonstration host sites;
- Utilities; and
- Energy Efficiency organizations.

Notes on Participant Eligibility:

1. Eligible manufacturers or product teams are limited to US companies. U.S. companies are defined in EPAct 2005 as those companies that are U.S.-owned or incorporated or companies organized under the laws of any state and having a parent company which is incorporated or organized under the laws of a country that affords treatment to United States-owned companies that is comparable to treatment the United States affords foreign-owned companies in the following areas: access to government-supported joint ventures in energy research and development, general investment opportunities, and protection of intellectual property rights.
2. Eligible demonstration sites are limited to US sites only.

On behalf of DOE, PNNL will seek to establish a demonstration team for each project. Each team will typically consist of a product manufacturer (or a collaboration between component manufacturers/product teams), a host site, an energy efficiency organization/utility local to the host site (as applicable), and PNNL. The number of individual teams and demonstration projects will be guided by the number of suitable products available and host sites in which to demonstrate them, as well as available resources. Both private sector and government host sites will be considered.

Manufacturers or product teams can also apply, at their option, with host sites identified for their particular products/applications. Likewise, host sites and utilities or efficiency organizations, especially those with on-going or new efficient lighting programs are also encouraged to apply, with or without specific applications or manufacturer/product partners.

## How Do I Apply? (or "How Do I Tell DOE That I Am Interested in Participating?")

Interested participants can find application ("Intent to Participate") forms for manufacturers, host sites, and utilities/energy efficiency organizations on DOE's SSL website:

<http://www.netl.doe.gov/ssl/techdemos.htm>

Please download the appropriate form, answer all questions, and save a copy for your records. Send completed application and any questions to:

[techdemos@pnl.gov](mailto:techdemos@pnl.gov)

You will receive a confirmation of your submission within 24 hours. Do not send any confidential supporting materials or information. Following an initial screening, applicants will be notified within two to four weeks of their submission of the availability of teams and locations. Manufacturers must be ready to submit, upon request, their products for evaluation as well as any available test results or other technical information, if available.

## **What is the Demonstration Process?**

The overall project consists of six phases, some of which run concurrently:

- 1) **Initial Screening:** Products and host sites will be screened based on the contents of the submitted applications. Prospective products and host sites deemed appropriate and eligible by the screening process will be contacted within two weeks of their submission, at which time they will be informed of their eligibility for participating in DOE SSL demonstrations, or be requested to provide additional information.
- 2) **Participant Team Identification:** Host sites and team members will be identified to carry out the actual demonstration of products satisfying the selection criteria.
- 3) **Laboratory Testing:** Testing (both short- and longer-term) of samples of each product submitted after passing the initial screening will be carried out to establish or verify important measures of product performance. This step is performed concurrently with the team identification process.
- 4) **Installation:** Products will be installed with appropriate pre-and post measurements, and the demonstration steps carried out, including any publicity and education events.
- 5) **Evaluation:** PNNL will conduct evaluations of the results, including energy and cost savings and related economic analyses, as well as qualitative occupant and user responses to the installed LED light source.
- 6) **Results Reporting:** Results of successful demonstrations will be widely publicized as part of DOE's SSL commercialization efforts, subject to DOE's restrictions on commercial endorsement, with results from long-term testing to be released as they become available. While no sales of demonstrated products is assured, DOE expects large-scale product purchases or promotions by demonstration team members will also occur at this stage for products that have sufficiently performed to buyers' satisfaction.

## **What Are Demonstration Team Member Responsibilities?**

A teaming agreement will be developed for each demonstration project. DOE will be responsible for evaluating proposed products for suitability, conducting product performance testing, assisting in identifying and evaluating suitable host sites, providing coordination of the overall activity, evaluating and reporting the results (both quantitative and qualitative), and supporting demonstration publicity and outreach, as well as subsequent project information dissemination. DOE intends for each of the other team members in a particular collaboration to make an essential contribution, subject to negotiation, as follows:

- Lighting Manufacturers (including collaborations) – loan/make available products to be demonstrated, and at their option, participate further in identification/nomination of host sites, assisting in application reviews and site installation.
- Host site Organizations – offer locations for product demonstration, installation support, along with a willingness to participate in demonstration-related activities to promote user awareness (such as tours, web casts, photographs, etc.); assist in the evaluation/measurement process.
- Energy Efficiency Organizations (or Utilities) – provide contacts with potential host site organizations and support to host sites as needed to ensure that demonstrations may proceed smoothly; provide/assist with outreach/promotional activities, information dissemination about the demonstration, and reviewing/communicating the results.

Team members are not restricted to a single team or a particular project; a large hosting organization might demonstrate products from more than one manufacturer or a single manufacturer might participate with multiple products designed for different applications and locations. The responsibility for any lighting design and installation services will be determined on a project specific basis.

At the time each team is formed, roles and responsibilities will be clarified and documented in a Teaming Agreement. A key component of each teaming agreement is that no contractual agreement exists between DOE (or its contractors) and any of the team members. Each team member agrees to act in good faith and bears its own costs needed to reach the mutually desired end goal. The universally advantageous outcome of demonstrating the benefits of SSL is the primary motivation behind the team.

### **What's Involved in the Selection Process?**

Products chosen for demonstration will be selected based on their potential to demonstrate the advanced state of the art in LED technology, while being economically sound investments for the building owner/investor. DOE is interested in products that will be economically justifiable and that can eventually impact a large segment of the lighting market.

An important factor in determining the suitability of products for field demonstration is their expected commercial availability date. Manufacturers must assure that products intended for a field demonstration site will be commercially available within three months of the start of the project, and must be ready to submit samples of their products for evaluation upon approval of their application to participate.<sup>1</sup>

Host site locations and utilities/efficiency organizations will be considered based on their geographical location, application suitability, and willingness to participate in

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<sup>1</sup> Products not meeting this requirement will not be put into a field demonstration site, although they might be selected for individual demonstration with other prototypes, or put into a queue for site demonstration at a later date.

demonstration-related activities to promote user awareness (such as tours, web casts, photographs, etc.), as well as information dissemination about the demonstration and communication of the results. The interest of the utility/efficiency organization in assisting PNNL with the measurement and evaluation process is also welcomed.

### **How Long Will a Typical SSL Technology Demonstration Take?**

DOE SSL Technology Demonstrations are designed to provide users with an opportunity to evaluate SSL products' performance and gain experience with their daily operations, as well as creating additional public exposure for the intended applications. As such, the Demonstrations do not have a fixed length. However, there are a number of factors that will affect the implementation period, including:

- The time required for the team to agree on members' individual roles, responsibilities, contributions, and start dates.
- The availability of products from manufacturers for evaluation and installation
- The time required to conduct measurements before and after product installation, and applicable user surveys

When team members and products are prepared for implementation, the demonstration process can quickly take place, and may only require four to six months from start to finish. Some additional time may be required in the preparation of demonstration Results Reports, as some test results (such as lumen depreciation) may take longer than the demonstration period. Additional time may also be required for outreach and public education events if the application, location, and participants agree on the importance of such activities.

### **Are There Other Ways of Participating in the DOE SSL Technology Demonstration Program?**

For parties conducting their own demonstrations and interested in widely sharing results, or for demonstrations already under way and wanting to access available resources, DOE is developing a Demonstration Checklist. Demonstrations meeting the Checklist requirements and/or developed using the Checklist may be able to access DOE support on a case-by-case basis. Successful demonstrations developed through this approach will be promoted via the DOE SSL website, events, and other appropriate venues and means. The Demonstration Checklist will be posted on the DOE SSL website in early 2008.

### **How Will the Information From Demonstrations Be Used?**

DOE Technology Demonstrations are intended to introduce new lighting technologies into appropriate applications in order to provide users an opportunity to evaluate product performance and gain experience with their daily operations, as well as to increase the public's awareness of advanced lighting technologies.

The demonstration process provides the users with a basis for evaluating and refining their lighting requirements, and ultimately for developing a sound understanding of the new technology before a decision is made to enter into the formal acquisition process. There is valuable information to be gained and shared through demonstrations in which commercial or soon-to-be commercial SSL products are installed in "real world" applications, often side-by-side with similar applications using other light sources. DOE

intends to capture and share this information through its SSL website, SSL Technology Demonstration “Results Reports,” and other updates.

DOE is also interested in working with team members and/or host site organizations, and other entities with the interest and capability to assist in the formation of “users’ groups” for the purpose of information sharing among users with similar needs. Participants in these “users’ groups” can also join or initiate procurement efforts for high efficiency applications using information gained from demonstration projects, which can result in large scale purchases and/or promotion of featured products.