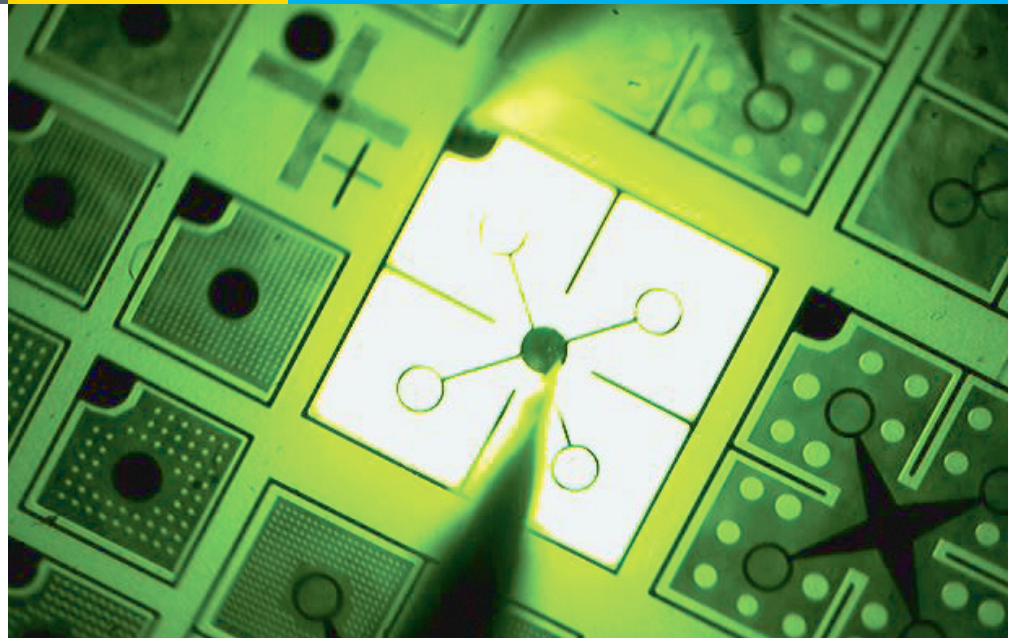


SOLID-STATE LIGHTING:**Doing Business with
DOE's Solid-State
Lighting Program**

Solid-state lighting (SSL) is an emerging technology that promises to make a significant impact on solving our nation's energy and environmental challenges.

With the promise of being more than ten times as efficient as incandescent lighting and twice as efficient as fluorescent lighting, SSL products using light-emitting diodes (LEDs) and organic light-emitting diodes (OLEDs) will mean "greener" homes and businesses that use substantially less electricity, making them less dependent on fossil fuels.

The U.S. Department of Energy conducts a comprehensive R&D and market development support program to systematically accelerate this groundbreaking technology. The overriding purpose of DOE's involvement

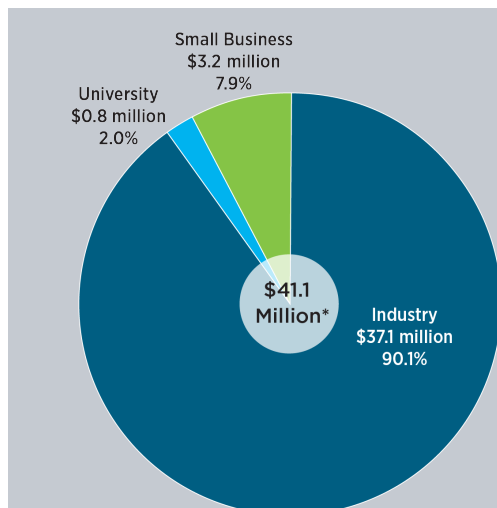


DOE funding of SSL research and development projects is awarded through competitive solicitations. *Photo courtesy of Rensselaer Polytechnic Institute.*

is to encourage higher levels of SSL efficiency and quality than might otherwise be achieved. By 2025, DOE's R&D goal is to develop advanced SSL technologies that—compared to conventional lighting technologies—are much more energy efficient, longer lasting, and cost competitive, targeting a product system efficiency of 50 percent with lighting that closely reproduces the visible portion of the sunlight spectrum.

**Different Phases, Different
Funding Mechanisms**

As an SSL technology matures, different funding mechanisms are available to support its development. Research partners and projects are selected based on such factors as energy savings potential, likelihood of success, and alignment with the SSL R&D plan. Funding mechanisms used in the DOE SSL program are shown in the table on the next page.



*Values may not add to \$41.1 million due to rounding

**Recipients of DOE
SSL Funding**

DOE funds solid-state research in partnership with industry, including small and large entities, academia, and national laboratories. As of December 2013, R&D funding went to 8 projects on light-emitting diodes (LEDs) and 9 projects on organic light-emitting diodes (OLEDs). DOE funding was \$23.5 million and applicant cost-share was \$17.6 million. All projects are subject to peer review by DOE.

**From Laboratory
to Marketplace**

Each year, DOE expects to issue competitive solicitations related to SSL: Core Technology Research, Product Development, and Manufacturing R&D.

- **Core Technology Research** is typically longer-term in nature, focusing on the applied research needed to advance the technical knowledge base of SSL for general illumination applications. DOE funds these efforts primarily for small businesses, universities, national laboratories, and other research institutions.

Funding Mechanisms Relevant to SSL Technologies

Mechanism	Purpose	What It Does
Basic Research	Precedes the mission of the DOE SSL R&D program	Supports basic energy science through annual solicitation by DOE's Office of Science. See sc.doe.gov/grants/grants.html for more information.
Core Technology and Product Development	Advances state-of-the-art SSL technologies for general illumination purposes	Provides the foundation of technological advancement for SSL with an emphasis on efficiency and performance. Funding opportunities are posted on ssl.energy.gov/financial.html and announced through SSL UPDATES.
Manufacturing Research and Development	Achieves cost reduction of SSL for general illumination through improvements in U.S. manufacturing, while maintaining or enhancing performance	Advances the technology's adoption by making SSL competitive with existing technologies on a first-cost basis. Funding opportunities are posted on ssl.energy.gov/financial.html and announced through SSL UPDATES.
Small Business Innovation Research (SBIR)	Seeks to increase participation of small businesses in federal R&D	Supports annual competitions among small businesses for Phase 1 (feasibility of innovative concepts) and Phase 2 (principal research or R&D effort) awards, and includes topics related to SSL. See science.energy.gov/sbir for more information.

- **Product Development** proposals are submitted by interested companies for projects that focus on the development or improvement of commercially viable SSL source, component, or integrated luminaire products. Technical activities are focused on a targeted market application with fully defined price, efficacy, and other parameters necessary for success of the proposed product.
- **Manufacturing R&D** proposals focus on achieving significant cost reductions and enhancing quality through

improvements in U.S. manufacturing equipment, processes, or monitoring techniques. Selected projects address the technical challenges that must be overcome before prices fall to a level where SSL will be competitive with existing lighting on a first-cost basis.

For general information on current and completed projects, visit ssl.energy.gov/projects.html.

For More Information

For more information on DOE funding opportunities within the SSL program, see ssl.energy.gov/financial.html.

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