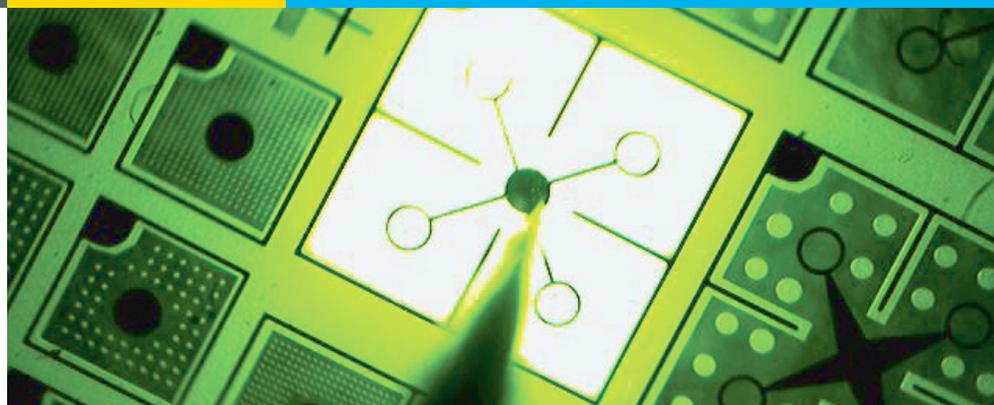


Doing Business with DOE's Solid-State Lighting Program

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 program to systematically accelerate this groundbreaking technology. The overriding purpose of DOE's involvement 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



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

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.

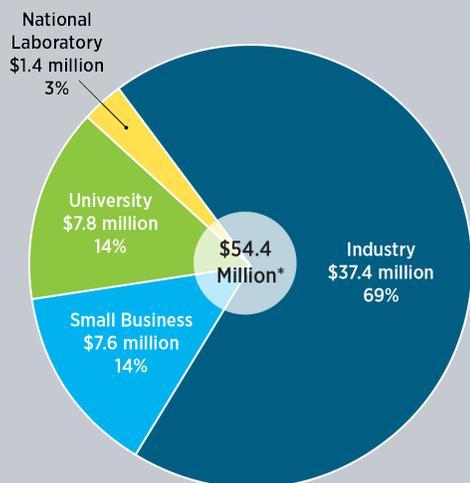
Three Focus Areas

The DOE SSL program funds competitive R&D projects in three focus areas: Core Technology Research, Product Development, and Manufacturing R&D. 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.

- **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.
- **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 more information on current and completed projects funded by the DOE SSL program, visit energy.gov/eere/ssl/research-development.



*Values may not add to \$54.4 million due to rounding

Recipients of DOE SSL Program Funding

DOE funds solid-state research in partnership with industry, including small and large entities, academia, and national laboratories. As of October 2015, R&D funding went to 15 projects on light-emitting diodes (LEDs) and 10 projects on organic light-emitting diodes (OLEDs). DOE funding was \$34.6 million and applicant cost-share was \$19.8 million. All projects are subject to peer review by DOE.

Additional Funding Opportunities

A variety of additional federal funding sources are available that may be applicable to SSL. For example, DOE’s Office of Science provides basic research grants through its annual solicitation process, and supports fundamental, longer-term energy research through Energy Frontier Research Centers. Both DOE and the National Science

Foundation (NSF) fund Small Business Innovation Research (SBIR) grants to foster increased participation of small businesses in federal R&D. In addition, DOE’s Advanced Research Projects Agency-Energy (ARPA-E) and Advanced Manufacturing Office (AMO) invest in projects related to SSL. For more information on SSL funding opportunities, see the table below.

Funding Mechanisms Relevant to SSL Technologies

Mechanism	Purpose	What It Does
Core Technology, Product Development, Manufacturing R&D	Advances state-of-the-art SSL technologies for general illumination purposes Achieves cost reduction of SSL for general illumination through improvements in U.S. manufacturing, while maintaining or enhancing performance	Provides the foundation of technological advancement for SSL with an emphasis on efficiency and performance. Advances the technology’s adoption by making SSL competitive with existing technologies on a first-cost basis. Funding opportunities are posted on energy.gov/eere/ssl/financial-opportunities and announced through SSL UPDATES.
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. Learn more at science.energy.gov/grants/ .
Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) grants	Increases participation of small businesses in federal R&D	Supports annual competitions among startups and small businesses. Includes topics related to SSL. Funding opportunities are available through DOE and NSF. See science.energy.gov/sbir and www.nsf.gov/eng/iip/sbir for more information
Energy Frontier Research Centers (EFRCs)	Support fundamental, longer-horizon energy research	Accelerates transformative discovery and disruptive advances in the atomic and molecular fields of energy science. Learn more at science.energy.gov/bes/efrc
Advanced Research Projects Agency—Energy (ARPA-E)	Advances high-potential, high-impact energy technologies that are too early for private-sector investment	Focuses on transformational energy projects that can be meaningfully advanced with a small investment over a defined period of time. Learn more at arpa-e.energy.gov
Advanced Manufacturing Office (AMO)	Seeks to fill the innovation gap between research and full scale industrial production	Invests in innovative technology, shared infrastructure and facilities, and education and workforce development. Learn more at energy.gov/eere/amo/advanced-manufacturing-office