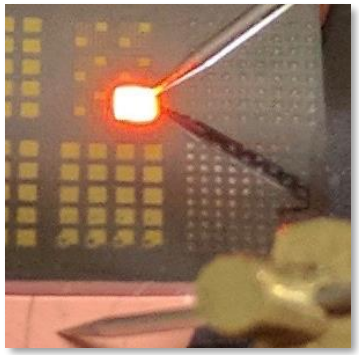
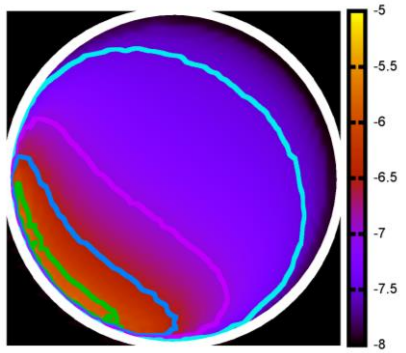
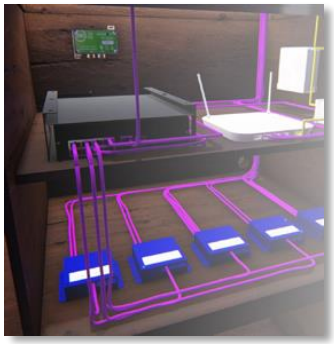
U.S. DEPARTMENT OF ENERGY

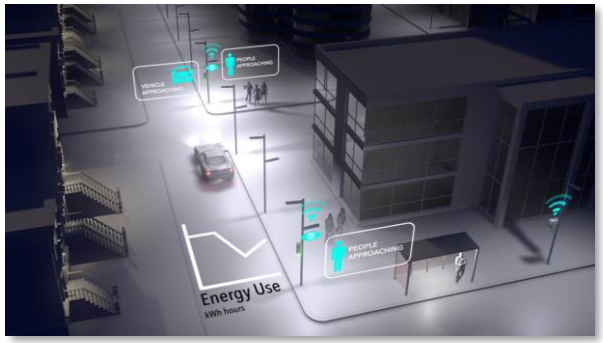
Office of ENERGY EFFICIENCY & RENEWABLE ENERGY

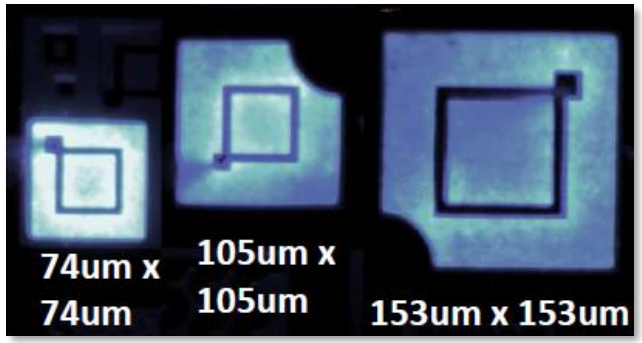
DOE Solid-State Lighting Research and Development











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Strategic Approach

Key DOE Roles

CONVENE

DOE roundtables and workshops bring innovators together to identify priority challenges

PLAN

Based on those priorities DOE sets technology milestones and creates an annual SSL R&D Plan

CO-FUND

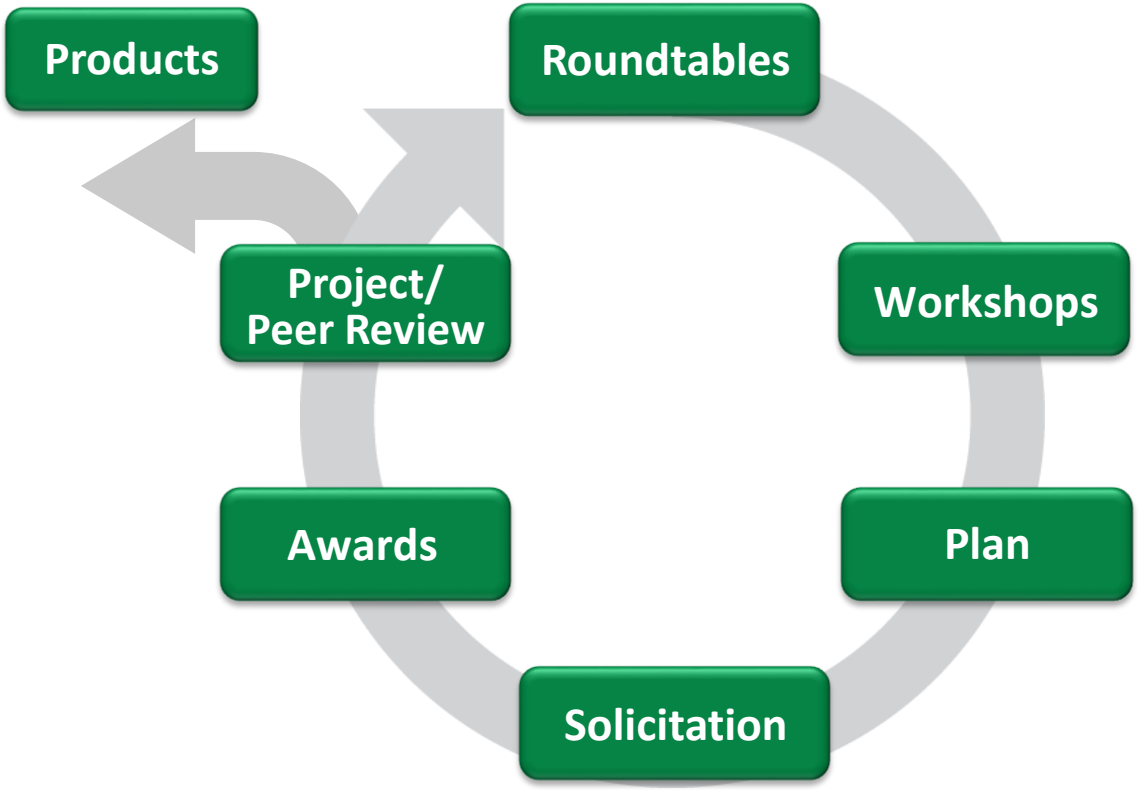
DOE funds competitively awarded and cost-shared projects aligned with the plan

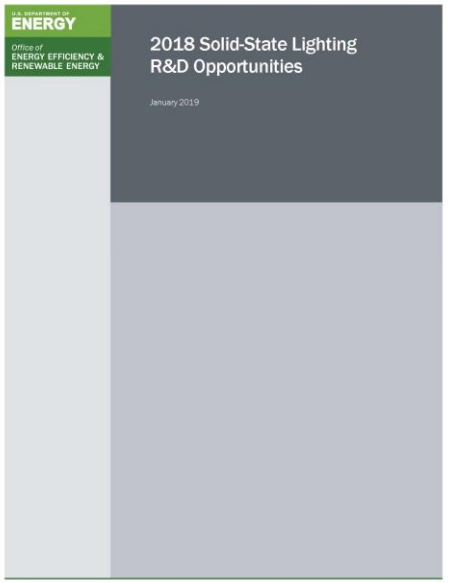
SHARE

DOE ensures open information flow and provides analyses that spur technology advances and inform future R&D priorities

DOE R&D Plan Process

SSL community input from roundtables and workshops shape R&D priorities and DOE solicitations



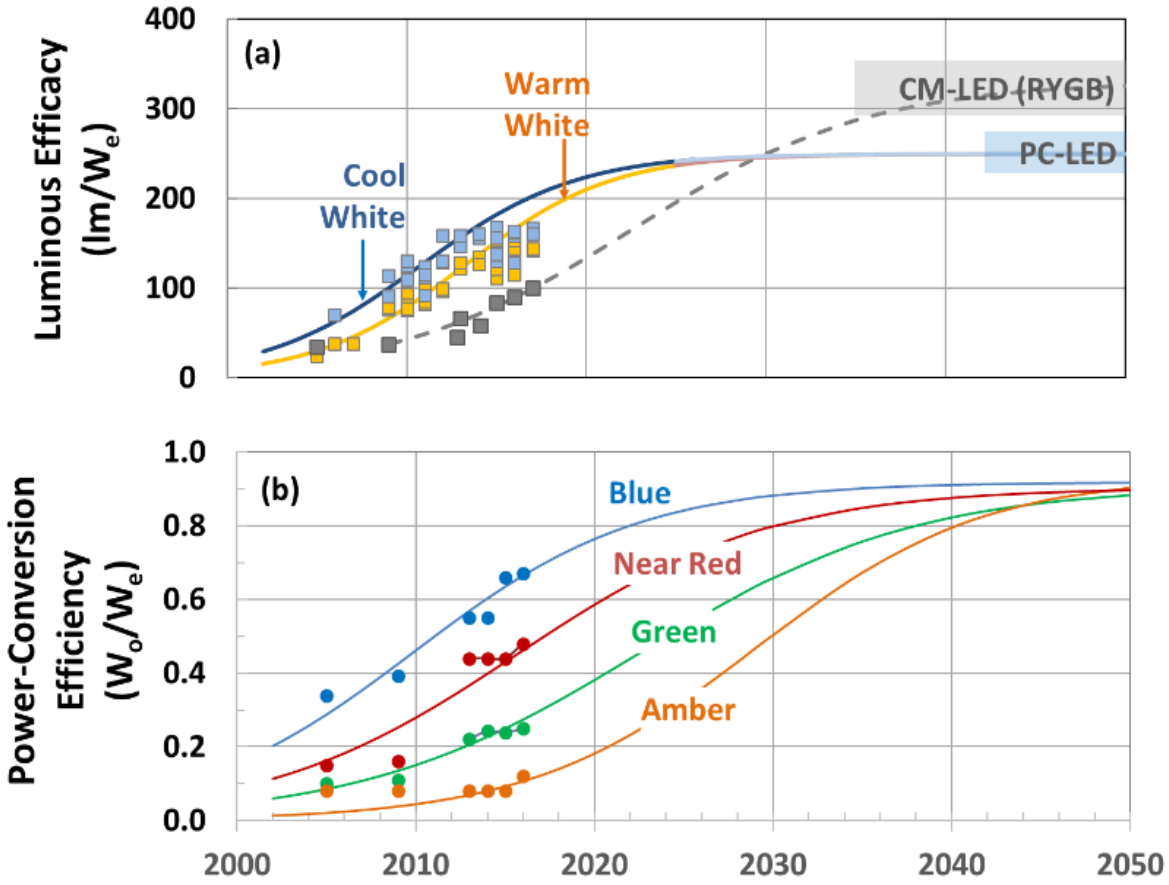


DOE targets push industry to levels of efficacy and performance that might not otherwise be achieved.

Analysis of emerging products prompts improvements, informs R&D priorities.

https://energy.gov/eere/ssl/research-development

2018 LED Program Targets



Best performing LEDs are only halfway to ultimate DOE goals

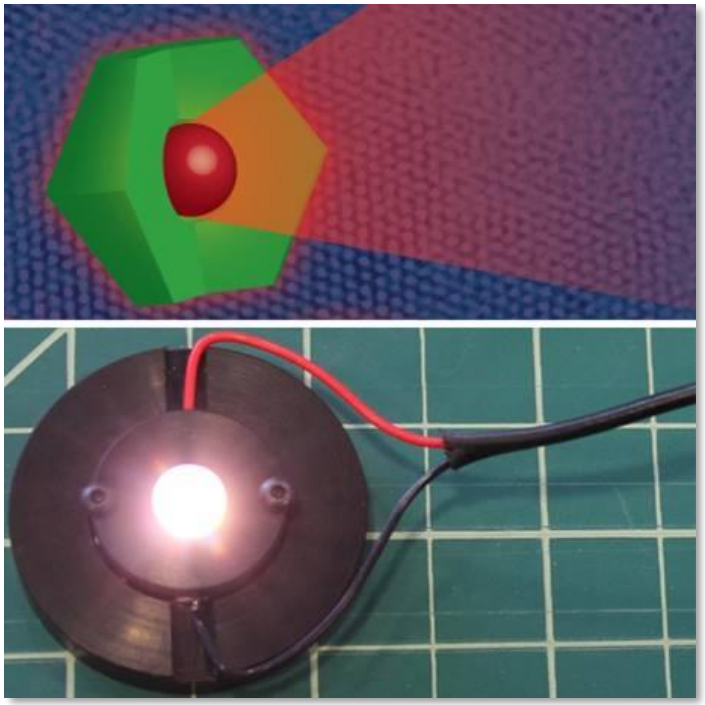
Significant technology development headroom remains

https://www.energy.gov/eere/ssl/downloads/2018-SSL-RD-Opportunities

Broad Mix of R&D Partners

R&D Challenges for lighting

- Emitter materials and architectures
- Down converters
- Encapsulation
- Package/module integration into luminaires
- Novel luminaire systems
- Emerging applications: agriculture, health, information technology
- Lighting services: performance metrics, integration with other technologies



Los Alamos National Laboratory is advancing the use of quantum dots as LED narrow-band downconverters.

Invited SSL Projects

Time	Project Title	Organization	PI
11:40 a.m.	Emerging Lighting Science	Pacific Northwest National Laboratory	Bob Davis
1:30 p.m.	Connected Lighting	Pacific Northwest National Laboratory	Michael Poplawski
2:00 p.m.	Lighting Systems Challenge	Pacific Northwest National Laboratory	Ruth Taylor
2:30 p.m.	AlInP-based LEDs for Efficient Red and Amber Emission	National Renewable Energy Laboratory	Kirstin Alberi
3:00 p.m.	Tunneling-Enabled High-Efficiency High-Power Multi Junction LEDs	Sandia National Laboratories	Andy Armstrong
5:00 p.m.	Lighting and Grid Integration	Pacific Northwest National Laboratory	Michael Poplawski
5:30 p.m.	Application Specific Lighting	Pacific Northwest National Laboratory	Bruce Kinzey/ Kelly Gordon

Join us at 4:00 p.m. for a special discussion on the Lighting GEB Technical Report