



U.S. Department of Energy
Energy Efficiency and Renewable Energy

DOE Solid-State Lighting Program Overview

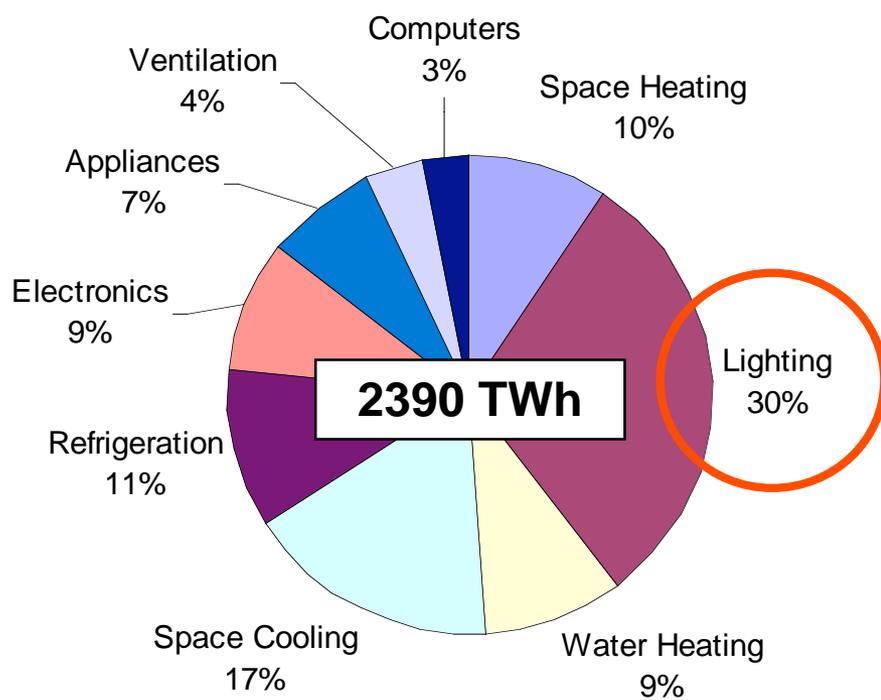
James R. Brodrick, Ph.D.
U.S. Department of Energy

Voices for SSL Efficiency Workshop
Pasadena, CA
April 23, 2007

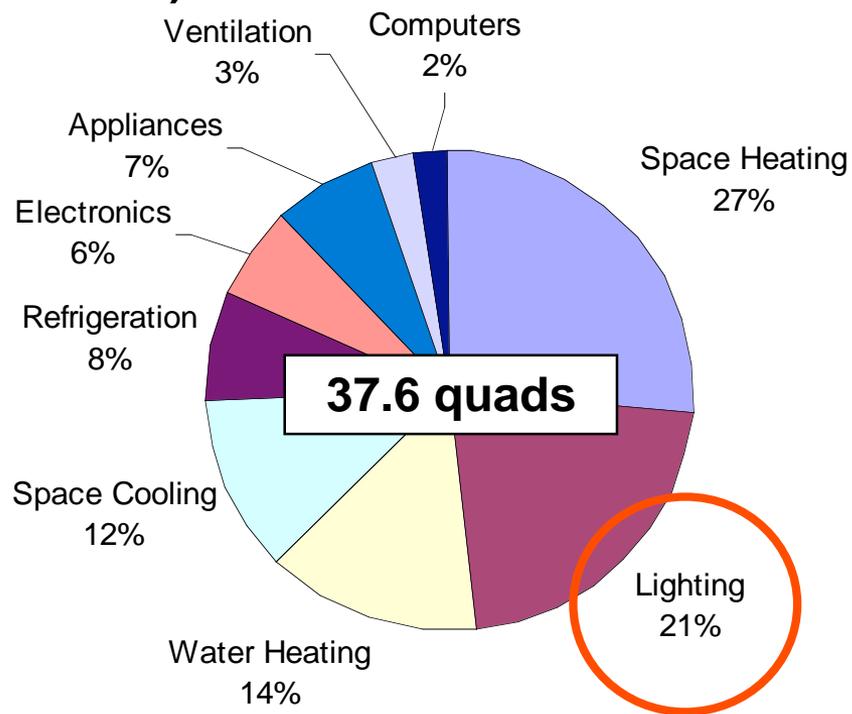


U.S. Buildings Energy End-Use Breakdown, 2001

Site Electricity Consumption



Total Primary Energy (all fuels)





The Legislative Authority

Domenici-Barton Energy Policy Act of 2005

Section 912

“The Secretary shall carry out a Next Generation Lighting Initiative in accordance with this section to support research, development, demonstration, and commercial application activities related to advanced solid-state lighting technologies based on white light emitting diodes.”



SSL Partnership Next Generation Lighting Industry Alliance MOA

“The Parties will conduct activities in support of research, demonstration and deployment of solid-state lighting (SSL) technologies for general lighting applications.”

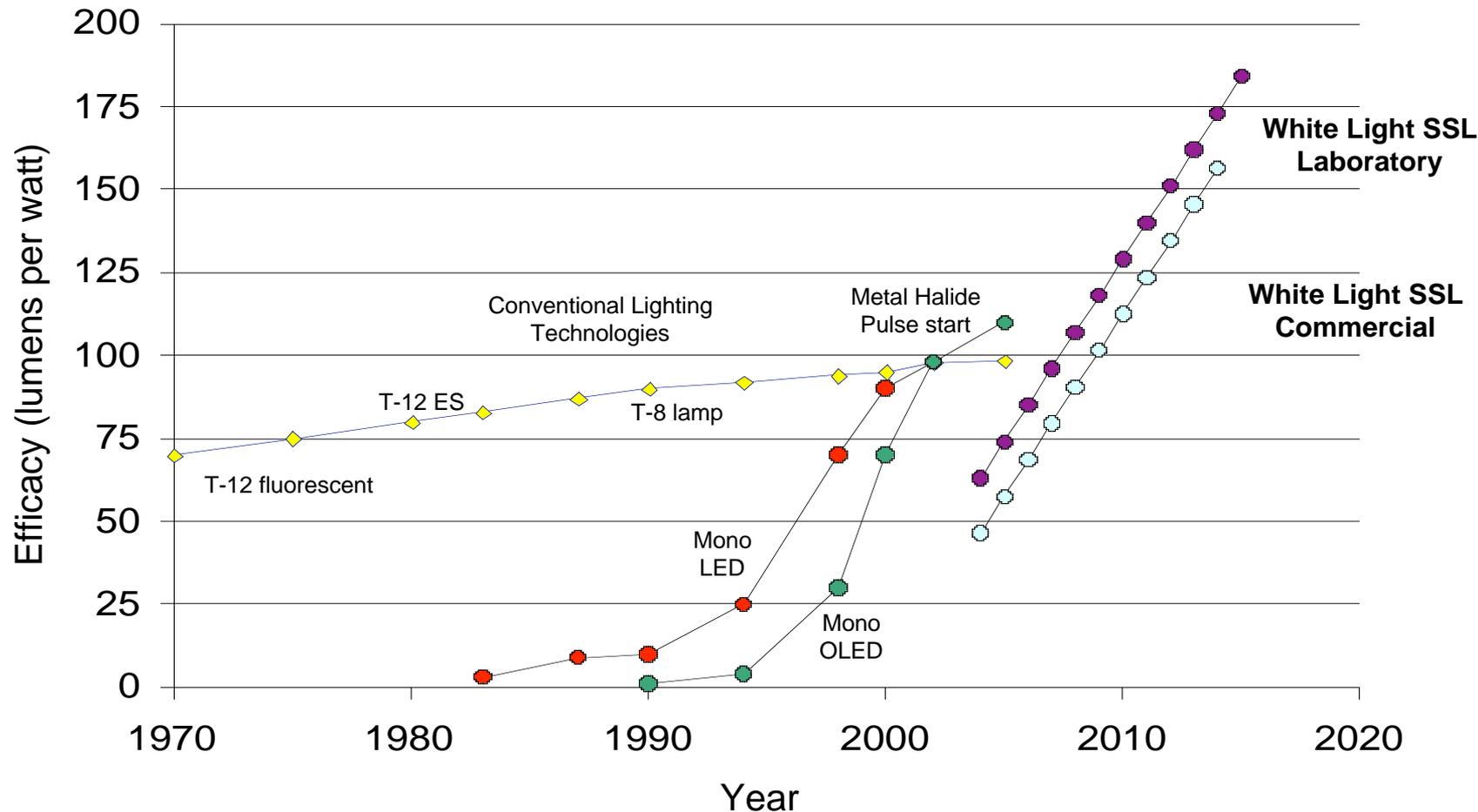
“...create criteria for voluntary market conditioning programs, such as ENERGY STAR®”

Members:

Acuity Brands Lighting ◇ Air Products & Chemicals ◇ CAO Group ◇ Color Kinetics ◇ Corning ◇ Cree ◇ Dow Corning ◇ Eastman Kodak Company ◇ GELcore LLC ◇ General Electric Company ◇ Light Prescriptions Innovators LLC ◇ OSRAM Sylvania ◇ Philips Electronics North America ◇ QuNano ◇ Ruud Lighting ◇ 3M



Accelerated R&D for White Light SSL



SSL Laboratory and Commercial Curves, revised April 2007



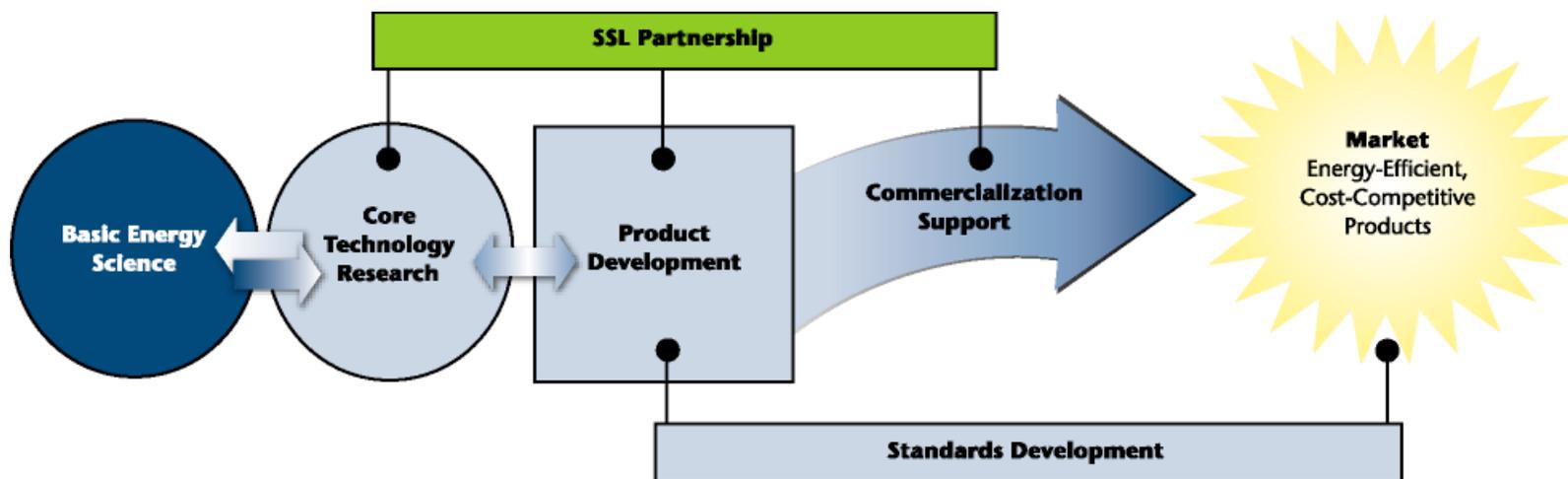
Unique and Potentially Better Technology

- Heat transfer
- Low voltage DC
- Small emitter
- Directional
- Shades of white light





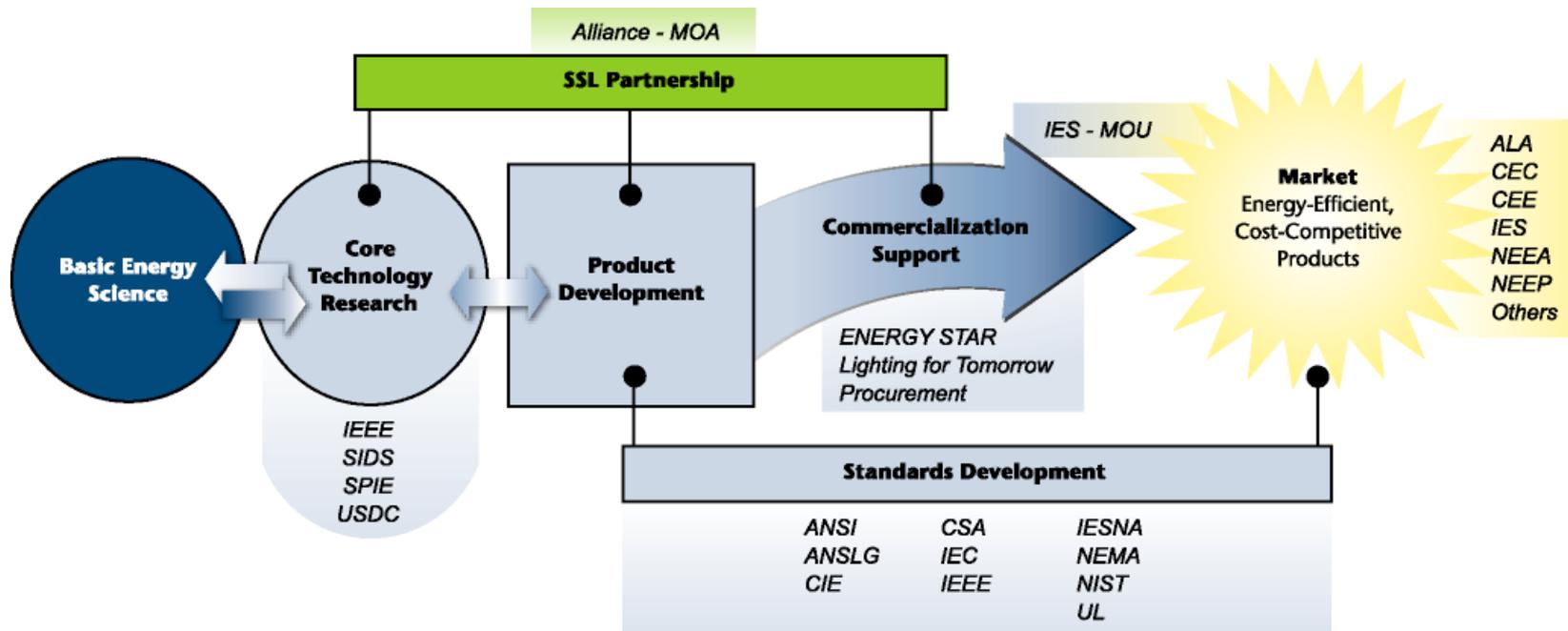
DOE Solid-State Lighting 5 Thrust – Total Program



Guiding technology advances from laboratory to marketplace



DOE SSL Technology & Market Partners





Illuminating Engineering Society of North America MOU

“Developing and maintaining guides and procedures to assist the lighting measurement and application community in the photometric measurement of solid state lighting devices and other technologies to (i) support DOE programs, including development of ENERGY STAR® criteria for SSL...”

IESNA:

IESNA is the recognized technical authority on illumination, and communicates information on all aspects of good lighting practice to its members, the lighting community, and consumers.

www.iesna.org



Other Federal Agency Involvement – Research

- NIST
 - ATP
 - Optical Technology
- DOD – DARPA
- National Science Foundation
- National Academy of Sciences



Other Federal Agency Involvement – Market Deployment

- USDA
- Commerce
- Defense
- Education
- GSA
- HHS
- DHS
- HUD
- Interior
- Justice
- Labor
- NASA
- USPS
- SSA
- State
- DOT
- Treasury
- Veterans Affairs



DOE SSL Technical Information Network

- Purpose: Increase awareness of SSL technology, performance, and appropriate applications
- CEE and NEEP competitively selected as lead organizations to establish network in 2007
- Network will meet on regular basis to share information, disseminate to end-users
- Opportunity to participate

Participants

- Energy efficiency organizations
- Utilities
- State and local energy offices
- Lighting trade groups

Target Audiences

- Builders
- Lighting contractors
- Building owners and managers
- Energy efficiency program managers



DOE Market Introduction

- Lighting for Tomorrow: SSL design competition for fixture manufacturers
- Commercial Product Testing Program: Hard data on available products
- SSL Fact Sheets: “Learn the trade”
- Standards and Test Procedure Development: Laying foundation for organized market
- DOE ENERGY STAR[®] for SSL: Designates the better performing products
- Demonstrations and Procurement: Downlights in Summer 2007



***“Even if you’re on the right track
you’ll get run over
if you just sit there.”***

Will Rogers

