U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Solid-State Lighting Program Strategy

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U.S. Department of Energy

Solid-State Lighting

TECHNICAL

- Young/new
- Changing
- Promising attributes

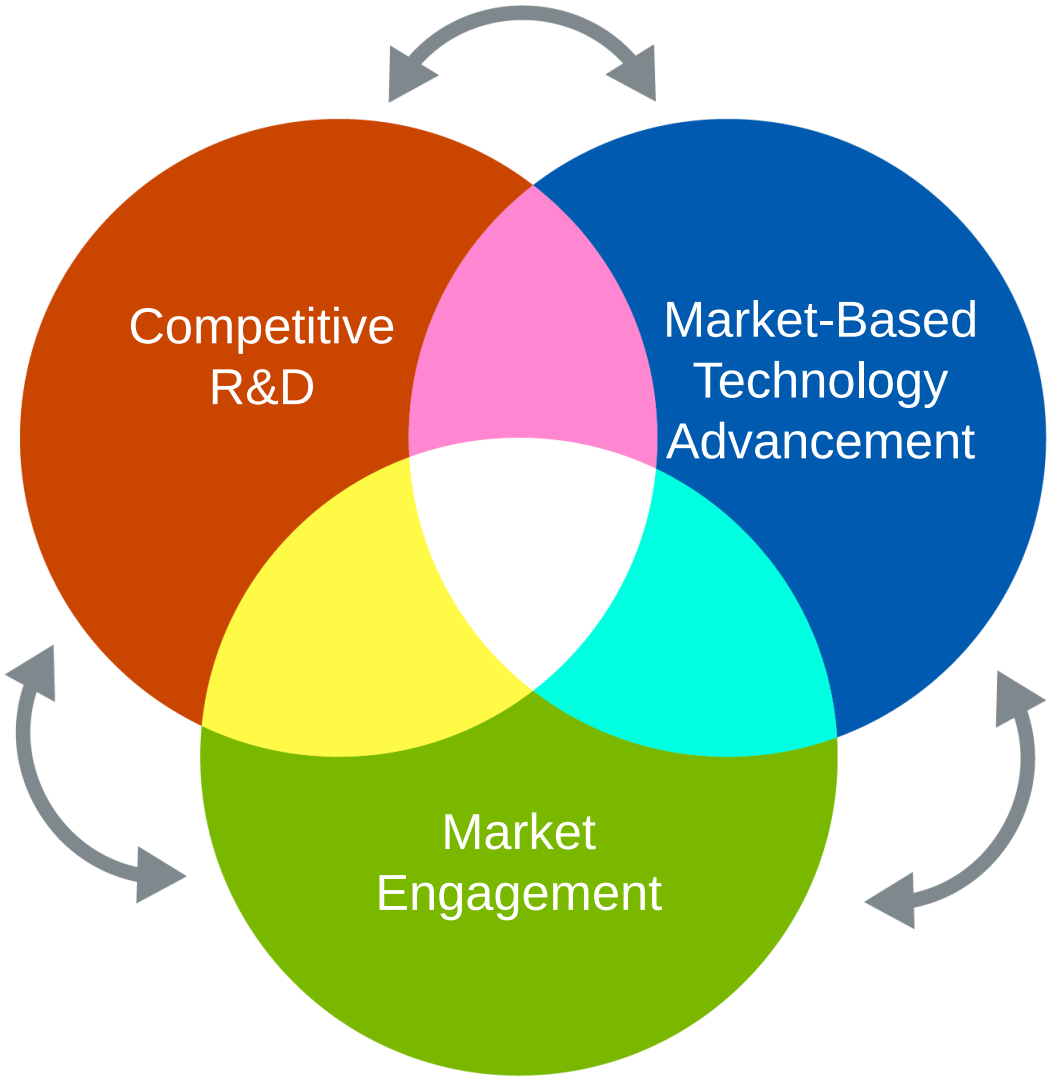
MARKET

- Many companies
- Semiconductors :: Lighting
- Large business potential
- Buyers—Unfamiliar and uninformed
- Products—Meet needs?

Classical Hypothesis

- Separated actions
- Valley of Death
- Mature technology and market

SSL Program Strategy

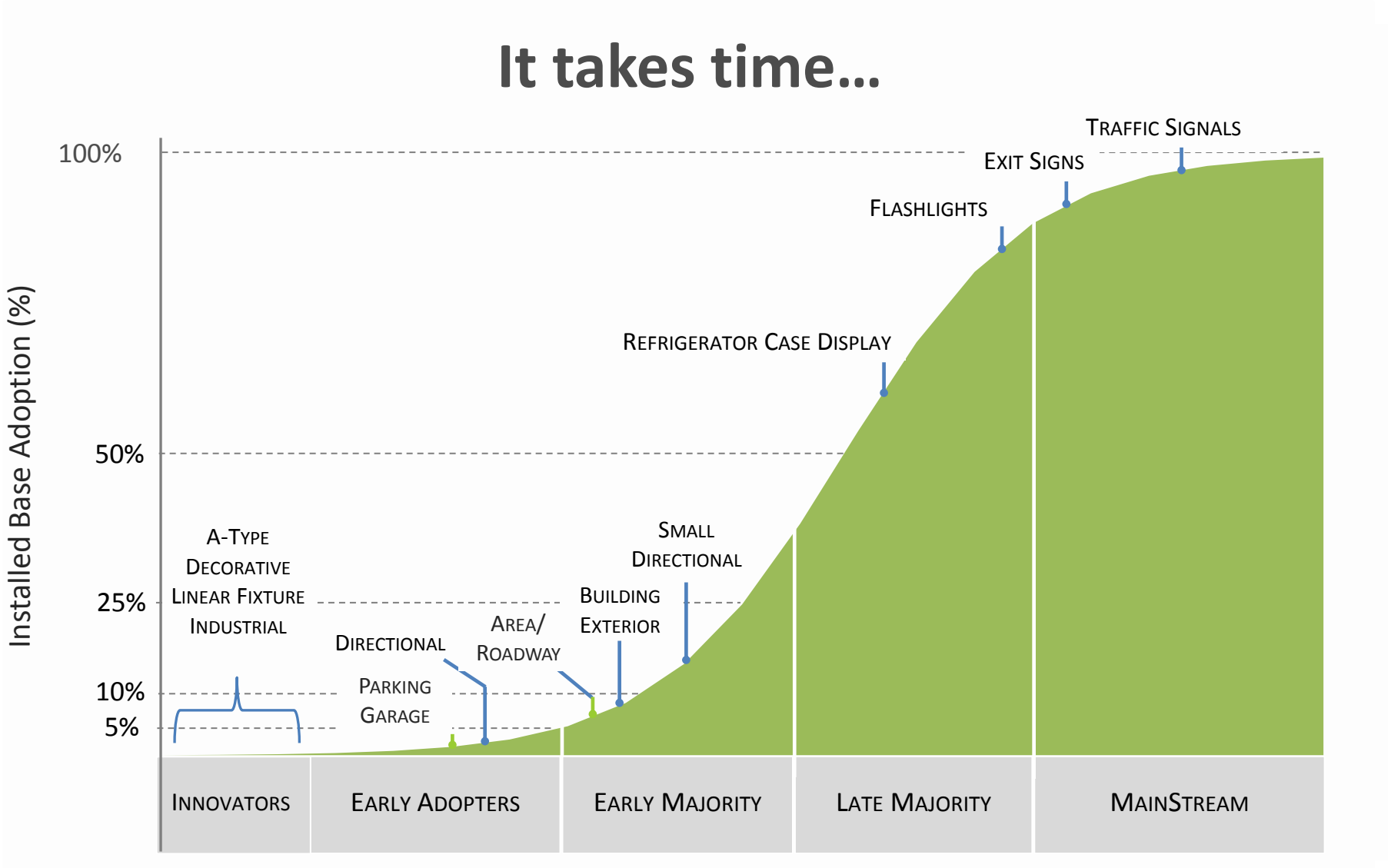


- Projects and activities implemented in highly integrated way
- Feedback loops among elements improve and focus activities

Successful technology development is not a linear process, separate from market

It's complicated

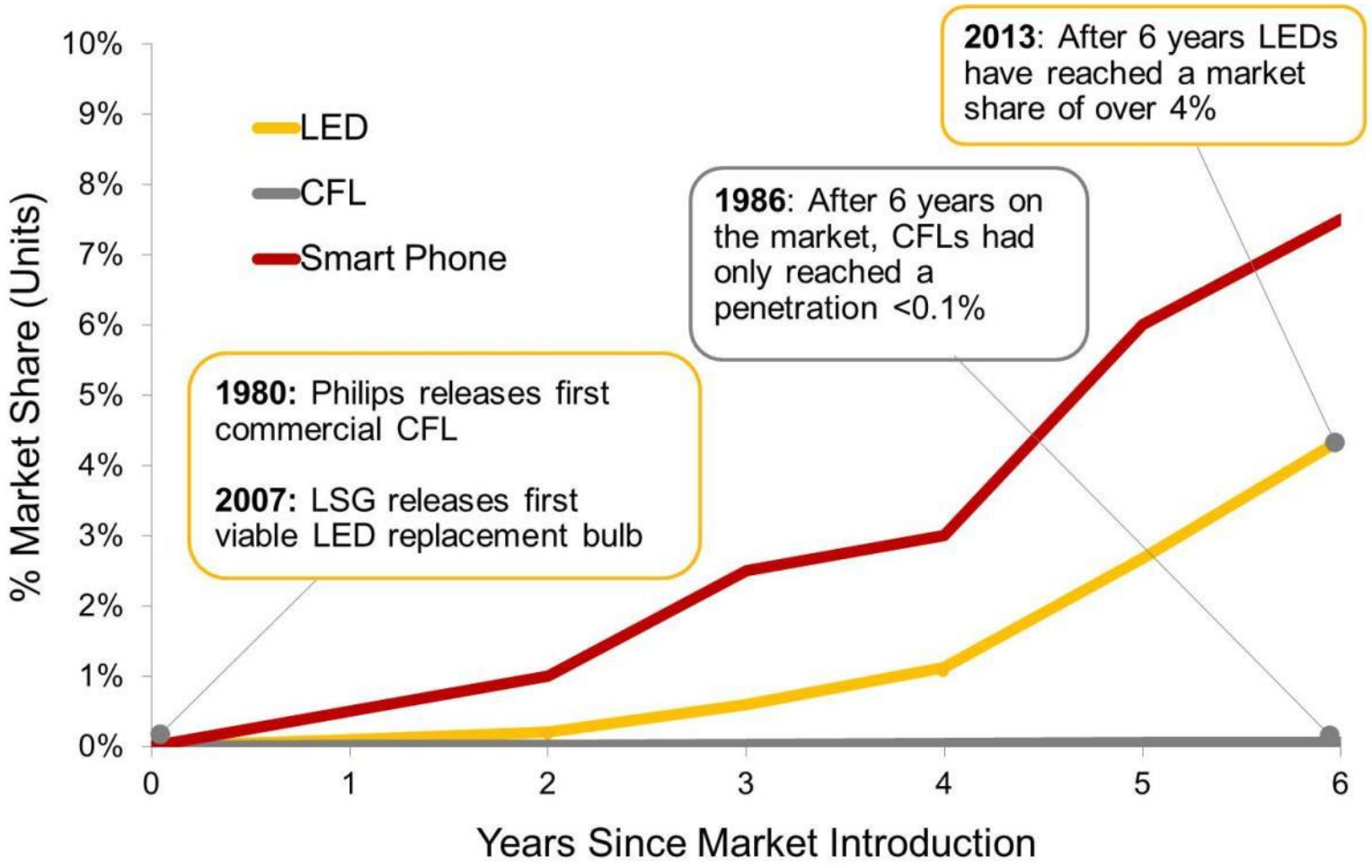
The Evolution of Adoption



Source: Navigant Consulting

LEDs Tracking Ahead of CFLs

Market growth not mimicking that of the typical household product



Source: Navigant Consulting

Program Impact

DOE has done **an impressive job** in leveraging a relatively small level of funding to play a leading role nationally and internationally in stimulating the development of SSL.

–National Academy of Sciences review committee

The collaboration here in the U.S. of government-industry partnership has been **a beacon all over the world** for what it should be like. . . . It has accelerated and directed the work of academics, of national labs, and of companies.

–Makarand Chipalkatti, OSRAM SYLVANIA

The Department of Energy Solid-State Lighting program has turned out to be the **core of collaboration** amongst all the parties involving this domain.

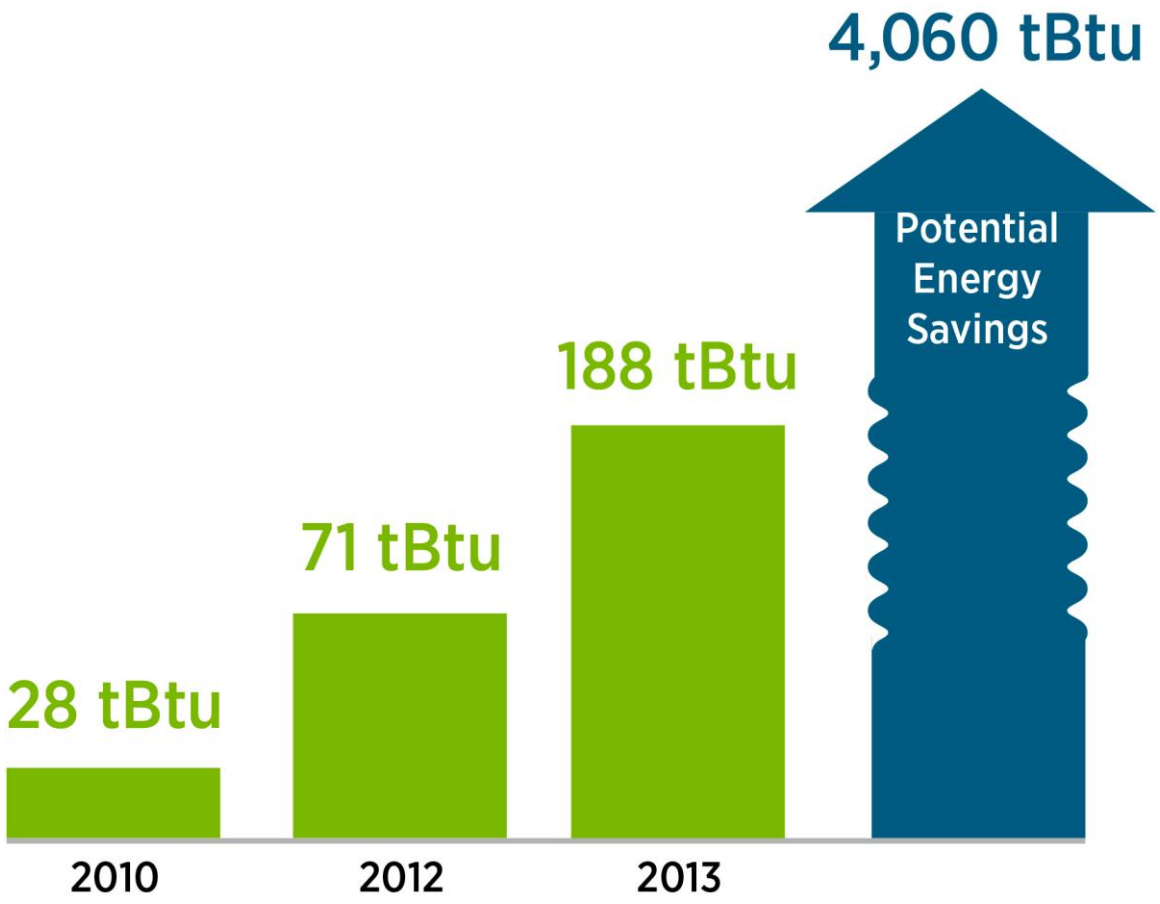
–Jeff Miller, International Association of Lighting Designers (IALD)

The DOE program for LED is probably the **most coherent technology development and introduction program** I've seen out of the federal government.

–Fred Gordon, Energy Trust of Oregon

SSL Saving Energy Today

Total potential energy savings: 4.1 quads



Source: Navigant Consulting

Today's Presentations

L Prize® Competition

LED Lighting Facts®

Municipal Street Lighting Consortium

Marc Ledbetter, Pacific Northwest National Laboratory

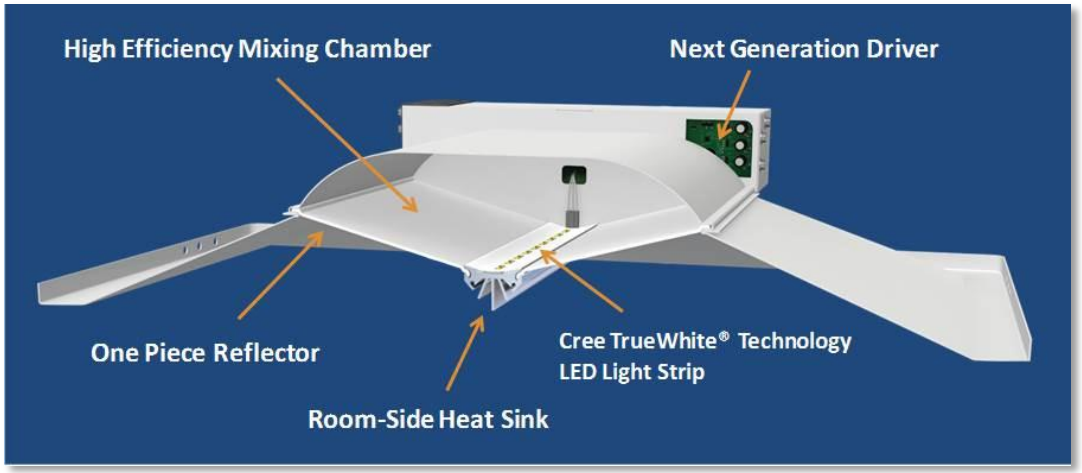
Today's Presentations

High Efficiency and Stable White OLED Using a Single Emitter

Jian Li, Arizona State University

Low Cost LED Luminaire for General Illumination

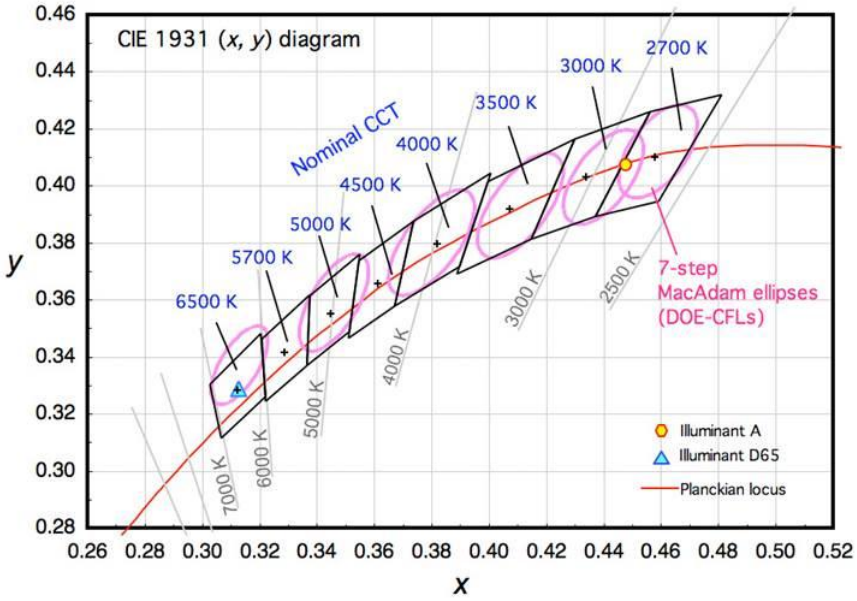
Paul Fini, Cree



Today's Presentations

High Throughput, High Precision Hot Testing Tool

Richard Solarz, KLA Tencor



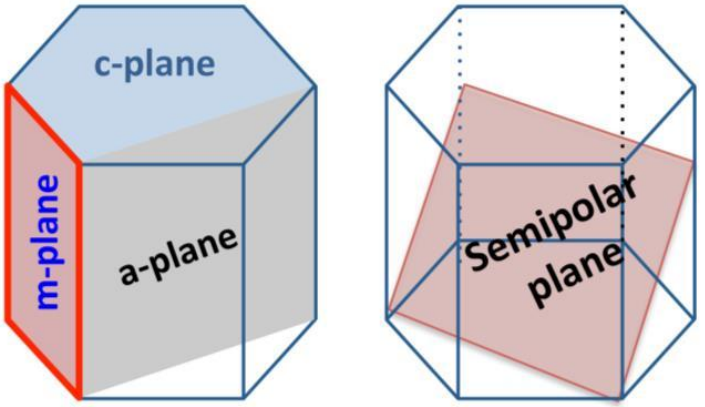
System Reliability Model for SSL Luminaires

Lynn Davis, RTI International

Today's Presentations

Light Emitting Diodes on Semipolar Bulk GaN Substrate

Arpan Chakraborty, Soraa



NEXT:

L Prize Competition

Marc Ledbetter