CALIFORNIA LIGHTING TECHNOLOGY CENTER

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Lighting is Largest Single Consumer: 
¼ of California’s Electricity Usage
(appliance plug loads are also significant)

Source – California Energy Commission, “California Energy Demand 2003-2013 Forecast”
STATEWIDE AVERAGE ELECTRICITY USE PER HOUSEHOLD

*SOURCE: CALIFORNIA LONG TERM ENERGY EFFICIENCY STRATEGIC PLAN, 2008

LIGHTING (EST.) 22%
REFRIGERATORS & FREEZERS 19%
TV, PC & OFFICE EQUIPMENT 15%
AIR CONDITIONING 10%
POOLS & SPAS 6%
LAUNDRY 5%
SPACE HEATING 4%
WATER HEATING 3%
MISCELLANEOUS 11%
DISHWASHING & COOKING 5%
Per Capita Electricity Sales (not including self-generation) (kWh/person) (2005 to 2008 are forecast data)

\[ \Delta = 4,000 \text{kWh/yr} \]
\[ = \$400/\text{capita} \]

California

United States

A. Rosenfeld California Energy Commission
Efficient Lighting Opportunity
New partnership approach
Lighting Center Established at UC Davis

1. Research and development
2. Teaching
3. Industry partnerships
4. Codes and standards
PIER PROGRAM RESEARCH AND DEVELOPMENT SYSTEM

FINDING MARKET-BASED SOLUTIONS WITH MANUFACTURERS • BUILDING PARTNERSHIPS FOR DEMONSTRATIONS INTEGRATING FEEDBACK FOR PRODUCT IMPROVEMENT • CREATING A RAPID, ECONOMIC PATH TO MARKET

RESEARCH
- Assesses project objectives
- Tests and evaluates energy efficient technologies
- Partners with manufacturers
- Builds solutions for the public

DEMONSTRATION
- Provides initial installations
- Validates onsite performance
- Creates confidence and receives feedback
- Broadens technology use

MARKETPLACE
- Provides emerging technologies and incentives for utilities
- Creates early adoption momentum for other businesses and market success
- Stimulates suppliers to provide additional distribution of technology
- Increases technology adoption and public benefits

RESEARCH POWERS THE FUTURE OF ENERGY EFFICIENCY

ENERGY.CA.GOV
Partnerships

Manufacturers

CA Utilities

Large End Users

FINELITE

AcuityBrands

WattStopper

Legrand

tendris

SACRAMENTO MUNICIPAL UTILITY DISTRICT

The Power To Do More.

Pacific Gas and Electric Company

CSU The California State University

WORKING FOR CALIFORNIA

LLF

PGE

LLUMENYTE INTERNATIONAL CORPORATION

SOUTHERN CALIFORNIA EDISON

National Park Service

ESKATON

Senior Residences and Services

3M

Day-Brite|Capri|Omega

PROGRESS LIGHTING

OSRAM Opto Semiconductors

SAMSUNG ELECTRO-MECHANICS

VU

Convergence Wireless

B-K LIGHTING

CONVIA

CREE LED Light

BIRA
“State of the art” lighting laboratories
Research and develop new technologies
Demonstrations with Utilities
Residential Lighting Design Guide

Residential Lighting Design Guide:
Best practices and lighting designs to help builders comply with California's 2005 Title 24 energy code.
Collaborations with Universities and Colleges- Controls Initiative
Education and research

• Undergraduate
• Graduate
• Classes
• Research
Undergraduate Lighting Program
UC Davis

1. Lighting Fundamentals
2. Lighting Design
   - Sponsored by Perm Light in 2006
   - Sponsored by Color Kinetics in 2007
3. Daylighting Fundamentals
4. Daylighting Design
5. Advanced Lighting seminar (summer only)
Graduate Lighting Program

- Master of Arts
  - Design Department

- Master of Science
  - Electrical Engineering
  - Design Department
Daylighting Academy

14 IIDA contact hours (1.4 CEU/HSW)
14 AIA/CES Learning Units (HSW)

The California Lighting Technology Center at UC Davis is sponsoring a seven-session intensive course taught by nationally recognized leaders in daylighting.

Course Sessions

1. Daylighting design, codes & standards
2. The nature and metrics of daylight
3. Daylight effects & introduction into architectural spaces
4. Fenestration systems & integration with electric lighting
5. Daylight measurement and simulation methods and tools
6. Case studies in integrated daylighting
7. Daylighting practice & technology showcase
Current CLTC Funding by Source

- **PIER FUNDING**: 1,830,343.48
- **INDUSTRY FUNDING**: 584,893.51
- **RFP COMPETITIVE FUNDING**: 1,027,237.34
- **UC FUNDING**: 438,279.90
- **INDUSTRY MATCHING FUNDS**: 506,359.00
Questions & Contact Information

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