

Outdoor Lighting and Energy Impact



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ANCHORAGE STREET LIGHTING CONFERENCE



Anchorage Convention Center
12/4/2008



Michael Seaman

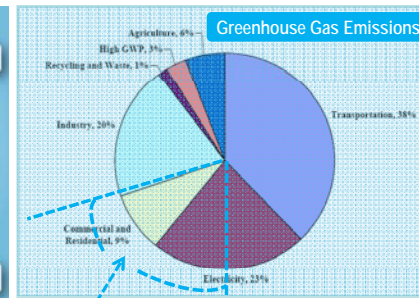
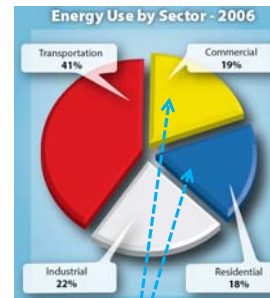


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Role of Buildings



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BUILDINGS ~ 37%
Source: CA Energy Commission, Integrated Energy Policy Report 2007, Dec. 2007

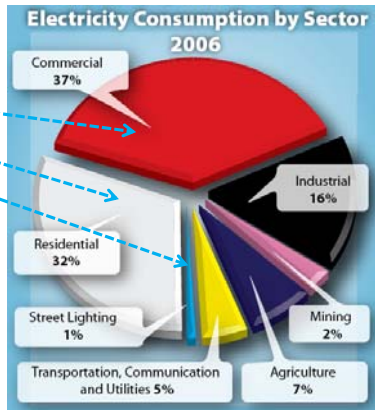
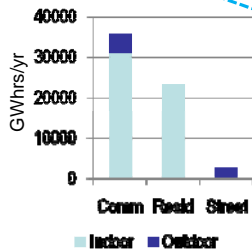
BUILDINGS ~ 27%
Source: CA Air Resources Board, Climate Change Draft Scoping Plan - A Framework for Change, June 2008

Lighting's Role in Electricity Consumption



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LIGHTING ~ 22% - 24%
39% of commercial
28% of residential
Plus street lighting



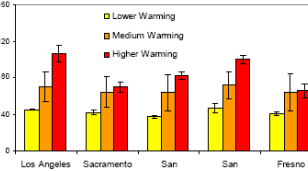
Source: CA Energy Commission, Integrated Energy Policy Report 2007, Dec. 2007

Climate Change and Peak Electric Use



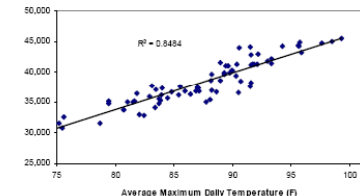
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Increase in # Extreme Heat Days/Yr



MORE HOT DAYS + HOTTER DAYTIME HIGHS = HEAT LASTING INTO NIGHT

Increase in Peak Electricity Demand (MW)



Source: Cayan, et al, CA Climate Change Center, "Scenarios of Climate Change in California: An Overview, February 2006", CEC-500-2005-186-SF

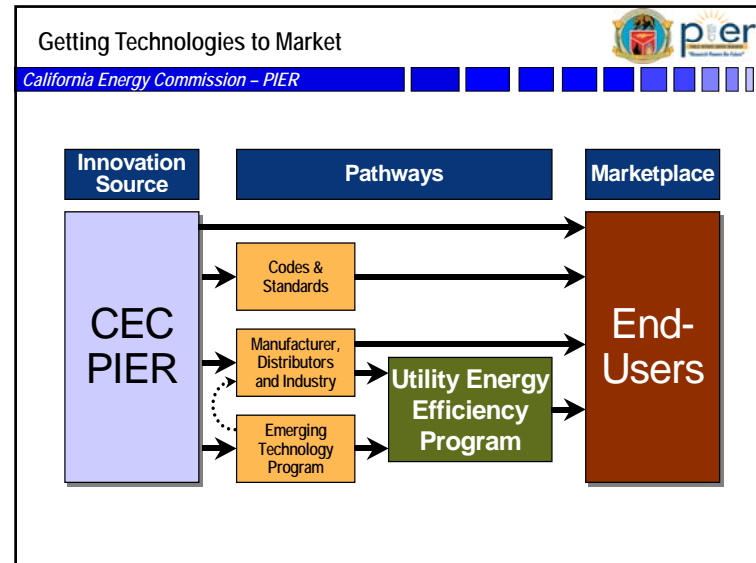
RD&D Delivery Process

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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	DEMONSTRATION	MARKETPLACE
<ul style="list-style-type: none"> Assesses project objectives Tests and evaluates energy efficient technologies Partners with manufacturers Builds solutions for the public 	<ul style="list-style-type: none"> Provides initial installations Validates onsite performance Creates confidence and receives feedback Broadens technology use 	<ul style="list-style-type: none"> 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



Outdoor Lighting Issues

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WHAT WE DON'T KNOW:

- Is white light better than yellow light?
- Is white light too blue?
- How much light is needed for safety?

WHAT WE KNOW:

- Too much light wastes energy
- Too much light contributes to sky glow, glare and light trespass
- Dobermans and pit bulls don't need light to find an intruder
- Motion sensors help cops

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Smart Outdoor Lighting for all Lamp Technologies

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Lithonia/Leviton **Everlast**

Hybrid Porch Wattstopper **LED Bollard Gardco** **Bi-level Outdoor Product development**

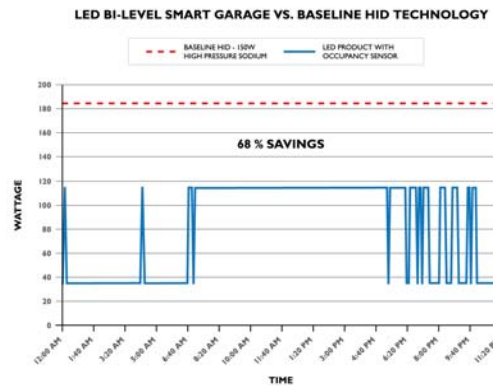
For big box retail market Commercial product / demos **Daybrite** **Gardco** **Wide-Lite**

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Smart Outdoor Lighting Saves Energy



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Importance of Partnerships



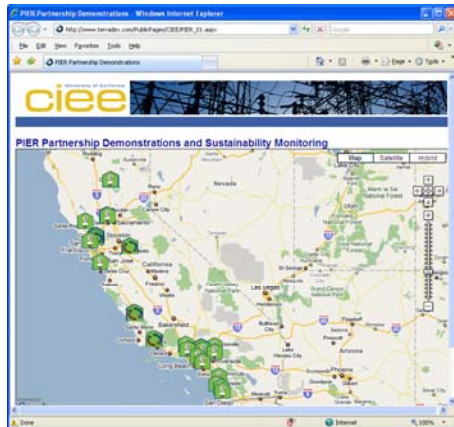
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Importance of Demonstrations



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FOR EACH PROJECT:

- Highlights of demonstration
- Data & results
- Specifications
- Google Earth link

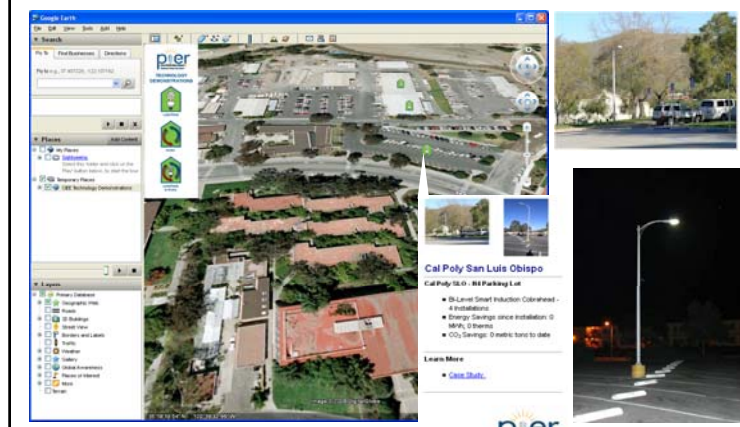
<http://pierpartnershipdemonstrations.com/index.html>

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Share Data on Projects



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Provide Access to Information



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LINKS TO:

- Case Study
- Product Specs
- Tech Briefs