

# 2012 STREETLIGHT PRESENTATION

Presented to City of San Bernardino

Southern California Edison (SCE)

Local Public Affairs

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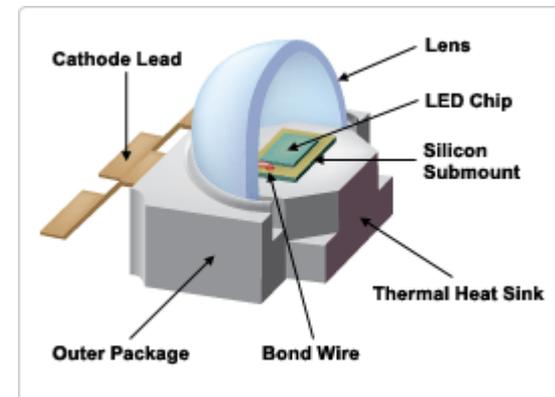
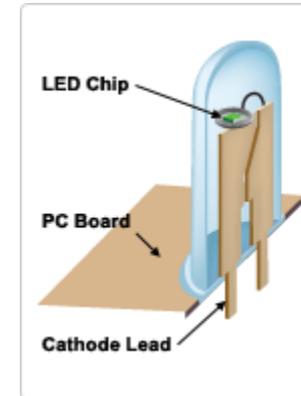
# Overview of Streetlights

- The facilities associated with the street light can be owned and maintained by the City or SCE
  - When SCE owns and maintains the facilities, the costs associated with ownership and maintenance are reflected in the electricity rate along with costs associated with generation, transmission, and general distribution facilities.
  - Rates for city owned facilities do not reflect the cost of ownership and maintenance, however they do reflect costs associated with generation, transmission, and general distribution facilities.
- SCE makes an annual patrol of all SCE-owned lighting facilities.
  - Orange electrical tape is placed on the poles to identify lights out for daytime repair.

# LED BRIEF OVERVIEW

## What are LEDs?

- Light-Emitting Diode (LED)
  - An electronic device that directly produces light when electricity is applied to it.
- There are two basic types of LEDs
  - Low-Power
    - Uses a fraction of a watt and is typically used as indicators lights (i.e., exit signs, small consumer electronics).
  - High-Power
    - Uses 1W or more and produces much more light, however as a result of the increased power, must be thermally managed. Used for general lighting including outdoor area Lighting.



# LED "Cobra Head" Styled Street Light Fixtures

## Retrofitted Products



## Specifically Built Products



# Cost Comparisons of HPSV to LED

- Current cost of HPSV Cobra Head style fixture is less than \$100 (does not include SCE installation or internal loadings).
  - Average Lifespan is 15 to 20 years
  - Lamp replacement every 5 to 5 -1/2 years.
  - Lamps priced less than \$15.
  
- Current cost of reputable Manufacture LED Cobra Head style fixture is between \$200-\$500 (does not include SCE installation or internal loadings).
  - Estimated Lifespan is 15 to 20 years.
  - Estimated ‘lamp’ life 10 to 20 years.
  - LED modules not standardized across in the industry so replacement management is still an issue.

# Comparison of HPSV vs. LED features

## ■ HPSV

- Low initial cost per fixture
- Proven Rated Fixture Lifecycle of 15 years+
- Established Commodity
- Standardized Fixture design (i.e., lamps, sockets, ballasts)
- Lamps are widely available from multiple sources
- No temperature dependency
- Proven lamp lifespan of up to 24,000 hours
- Contains Mercury in lamps
- Poor Color Rendition (~20 CRI)

## ■ LED

- High initial cost per fixture
- Unproven Rated Lifecycle
- Limited Adoption No fixture or replacement parts standardization
- Performance dependent on temperature
- Unproven lifespan claims of over 50,000 hours
- Increased glare
- Improved light distribution
- Contains no Mercury
- High fixture efficacy (over 80 lm/W)
- High Color Rendition (over 70 CRI)

# Current Status of LED Technology

## ■ The Pros

- Increased chip efficacy now at 150 lumens/watt
- Performance test standards for light output performance (IESNA LM-79) is under IES Committee review
- Tighter specification of color consistency, “Binning” (ANSI C78.377-2008)
- Costs of fixtures have declined with a continued downward trend – however, presently, LED Street Light fixtures are at least 5 times costlier than High Pressure Sodium Vapor (HPSV)
- Increased consideration to thermal management in fixture design

## ■ The Cons

- Lack of industry standards for Roadway Lighting applications
- Little documentation of power quality assurance (i.e., Harmonic Distortion, Power Factor)
- Product warranties still short of lifespan claims
  - 5 years warranty, but claimed life over 10 years
- No reliable standard for rating of life
  - Uncertainty of individual components of a fixture (i.e., driver life)
- High cost

# In Summary – SCE and LED Streetlights Today

- Though LED costs are coming down and efficiencies are increasing, the costs are still too high and the life spans too uncertain for SCE to be able to recommend to the CPUC today that we be authorized to begin replacing existing HPSV lights with LEDs
- The high up-front cost of such a replacement would be reflected in streetlight customers' rates
- SCE will continue to study and monitor the development of this technology and others that may emerge

# OUTAGE NOTIFICATION PROCESS

- **660,000 streetlights within SCE System**
- **SCE performs regular annual patrols of the SCE Streetlight System**
- **SCE crews respond to customer reported outages and perform streetlight infrastructure replacement throughout the year.**
- **Customers may either call or go on-line to report the Streetlight Outage**
  - **800-611-1911**
  - [www.sce.com/Onc/StreetLightOutage.aspx](http://www.sce.com/Onc/StreetLightOutage.aspx)
    - pole #
    - exact address
    - cross street and/or landmarks





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Home > Outage Center > Report an Outage

## Street Light Outage

Step 1 Describe Outage

Step 2 Setup Notification

Step 3 Confirmation

### Describe the street light problem

You can report problems with street lights here. Please respond to the questions below, and describe the location as accurately as possible. You can also report this problem by calling us at 1-800-611-1911.

\* Indicates required fields

#### Contact Information \*

In case we have further questions, please tell us how to contact you. This information will not be used for any other purpose.

What is the status of the street light? \*  Off  Flickering  Stays On

Is there visible damage to the light or pole? \*  Yes  No

If yes, please describe the damage

Enter Pole Number if known

### Help

If you've had problems with your power for more than a few minutes, please let us know. Reporting the outage online is fast and easy. You can also call SCE at 1-800-611-1911.



# SCE: Your Energy Partner

## Emergencies:

[Power outages, downed power lines, Streetlight]

– **1-800-611-1911**

## General Information:

– **1-800-655-4555**

## Southern CA Edison

– [www.sce.com](http://www.sce.com)

## CA Energy Commission

– [www.energy.ca.gov](http://www.energy.ca.gov)

## CA Public Utilities Commission

– [www.cpuc.ca.gov](http://www.cpuc.ca.gov)

## CA Independent System Operator

– [www.CAISO.Com](http://www.CAISO.Com)