The CCC/IOU Energy Efficiency Partnership

Sustainability in Higher Education

Dan Estrada
California Community Colleges
Chancellor’s Office
California Community Colleges Overview

The Largest System of Public Higher Education in the World

- 2.7 million students annually
  - Over 70% of the state’s public college students

- One-Quarter of all community college students in U.S.
  - Are enrolled in California’s community colleges

- System of FIRST Choice
  - We serve the “bottom” 100% of students!!
California Community Colleges Overview

- 72 districts encompassing 110 campuses, 69 approved off-campus centers and 22 separately reported district offices

- Includes 21,600 acres of land, 4,885 buildings, and 64.4 million gross square feet of space

- Innumerable off-campus outreach centers at various facilities
California Community Colleges
System-wide Facilities Needs

- $35+ Billion over next 10 years

- 5 year needs in new & existing facilities
  - Enrollment Growth = 15m new ASF
  - Modernization = 28m ASF of existing bldgs
    - 74% over 25 years old
    - 60% over 40 years old
California Community Colleges
Available Resources

- **64 of 72 districts** = **$22.8b** in local bonds
  - Since Prop 39 in November 2000

- State CCC funds for capital outlay
  - 2006 state education bond = **$1.5 billion**
  - 2010 state education bond = **$4.1 billion** (SB 271, Ducheny)
2009-11 Partnership
Estimated Life Cycle Benefits

10-Year Cumulative Energy Impacts

Electricity Savings = 725,562,048 kWh

Natural Gas Savings = 23,080,884 therms

For every $1 spent for sustainable facilities yields AT LEAST $2 energy savings
CCC Lighting Projects Underway 2009-2010

Forty-six projects at 20 CCC Campuses representing:

- 901 kW Demand Reduction
- 3.5 m kWh Annual Energy Savings
- $590k in Incentives
CCC/IOU Energy Efficiency Partnership

Campus Best Practices
Citrus Community College District

New Efficient Stadium Lights

PIER-CCC Pilot Program
- Integrated Classroom Lighting Project
- Daylighting Systems
PIER Pilot Project – Integrated Classroom Lighting System (ICLS)

- Pilot Projects installed at Citrus and Southwestern Colleges
- Case Study resulted in 32% annual savings
Instructional Arts Building – Lighting Design

- Design resulting in 35% lower energy usage than California Title 24 Energy Code
- Lighting energy savings:
  - Day-lighting, allowing lighting densities to be reduced to 0.774 W/sf
  - High efficiency dimmable-ballast classroom lighting allow multiple light levels
  - Automatic lighting control uses motion sensors and schedules to control lighting
  - LED Exterior walkway lights
Campus Best Practices
Butte College

LED Walkway Lights

LED Desk Lamps

T8 Bi-Level Lights in Hallways
PIER Pilot Project – Integrated Office Lighting System (IOLS)

- Case Study resulted in 68% annual savings
Campus Best Practices
North Orange County CCD

Library/Learning Resource Center
New Construction Design Maximizes Daylighting
PIER Pilot Project – Bi-Level Stairwell Lighting

- Pilot Projects at Cypress, Citrus, and Butte Colleges
- Each project estimated to save $500-700 per year in energy savings
Questions?

For more information check Program Web Site at:

www.cccutilitypartnership.com