

A photograph of a long, modern office hallway. The floor is highly reflective, showing the ceiling and windows. The walls are lined with large windows that look out onto a green landscape. The ceiling is white with a grid of recessed lights and ventilation grilles. The overall atmosphere is bright and clean.

ENERGY EFFICIENCY: A SMART INVESTMENT

Critical deadline for incentives approaching

SPEED

State Partnership for
Energy Efficient Demonstrations

LIGHTING & HVAC RETROFIT INCENTIVES

Demonstrations on UC and CSU campuses have proven that SPEED technologies offer reliable, cost-effective solutions for achieving deep energy savings. Effective January 1, 2014, many SPEED technologies will become required under California's 2013 Title 24 Building Energy Efficiency Standards.

For 2013 and 2014, the UC/CSU/IOU Energy Efficiency Partnership Incentive Program offers \$0.24 per annual kilowatt hour saved and \$1.00 per annual therm saved beyond Title 24 standards. These incentives, combined with available campus financing, make SPEED technologies a smart investment. The following charts show how campus incentives will change when the new Title 24 2013 standards take effect. They also indicate how much some lighting retrofits exceed the new standards in delivering energy savings.

CORRIDORS

Per 100 2' x 4' two-lamp recessed fixtures 20% occupancy

Fluorescent + local controls, 50% low
Fluorescent + zonal controls, 20% low
LED fixture + networked controls, 20% low

| | | | | |
|----------|---------------------------------|-----------------|-----------------|-----------------|
| LIGHTING | Title 24 2008 | \$4,709 | \$7,535 | \$9,715 |
| | Title 24 2013 | \$0 | \$2,826 | \$5,006 |
| | INCENTIVE CHANGE | -\$4,709 | -\$4,709 | -\$4,709 |
| | Energy savings beyond Title 24* | — | 40% | 71% |
| | | | | |

CLASSROOMS

Per typical 1,000 ft² classroom

ICLS + occupancy sensor
ICLS + occupancy sensor and daylighting
LED ICLS + occupancy sensor and daylighting

| | | | | |
|----------|---------------------------------|---------------|---------------|---------------|
| LIGHTING | Title 24 2008 | \$177 | \$235 | \$496 |
| | Title 24 2013 | \$0 | \$59 | \$320 |
| | INCENTIVE CHANGE | -\$177 | -\$176 | -\$176 |
| | Energy savings beyond Title 24* | — | 14% | 78% |
| | | | | |

OFFICES

Per 100 2' x 4' recessed troffers

Ambient + occupancy sensors
Ambient + occupancy sensors & daylighting
LED ambient + occupancy sensors & daylighting

| | | | | |
|----------|---------------------------------|-----------------|-----------------|-----------------|
| LIGHTING | Title 24 2008 | \$1,472 | \$1,962 | \$4,135 |
| | Title 24 2013 | \$0 | \$491 | \$2,663 |
| | INCENTIVE CHANGE | -\$1,472 | -\$1,471 | -\$1,472 |
| | Energy savings beyond Title 24* | — | 14% | 78% |
| | | | | |

STAIRWELLS

Per 100 strip fixtures 20% occupancy

2-lamp T8 fluorescent, 50% low
2-lamp T8 fluorescent, 20% low
Adaptive LED, 20% low

| | | | | |
|----------|---------------------------------|-----------------|-----------------|-----------------|
| LIGHTING | Title 24 2008 | \$4,709 | \$7,762 | \$9,923 |
| | Title 24 2013 | \$0 | \$3,053 | \$5,214 |
| | INCENTIVE CHANGE | -\$4,709 | -\$4,709 | -\$4,709 |
| | Energy savings beyond Title 24* | — | 43% | 74% |
| | | | | |

AREA LIGHTS

Per 100 pole fixtures 30% occupancy

LED
LED + local controls, 50% low
LED + local controls, 20% low

| | | | | |
|----------|---------------------------------|-----------------|------------------|------------------|
| LIGHTING | Title 24 2008 | \$8,199 | \$12,283 | \$14,734 |
| | Title 24 2013 | \$0 | \$0 | \$2,450 |
| | INCENTIVE CHANGE | -\$8,199 | -\$12,283 | -\$12,284 |
| | Energy savings beyond Title 24* | — | — | 32% |
| | | | | |

PARKING GARAGES

Per 100 canopy fixtures 50% occupancy

LED
LED + local controls, 50% low
LED + local controls, 20% low

| | | | | |
|----------|---------------------------------|------------------|------------------|------------------|
| LIGHTING | Title 24 2008 | \$16,399 | \$22,233 | \$25,733 |
| | Title 24 2013 | \$0 | \$0 | \$3,500 |
| | INCENTIVE CHANGE | -\$16,399 | -\$22,233 | -\$22,233 |
| | Energy savings beyond Title 24* | — | — | 20% |
| | | | | |

PARKING LOTS

Per 100 pole fixtures
30% occupancy

| | LED | LED + local controls, 50% low | LED + local controls, 20% low |
|------------------------------------|-----------------|-------------------------------------|-------------------------------------|
| LIGHTING | | | |
| Title 24 2008 | \$8,199 | \$12,283 | \$14,734 |
| Title 24 2013 | \$0 | \$0 | \$3,500 |
| INCENTIVE CHANGE | -\$8,199 | -\$12,283 | -\$11,234 |
| Energy savings beyond Title 24* | — | — | 32% |

WALL PACKS

Per 100 fixtures
15% occupancy

| | LED | LED + local controls, 50% low | LED + local controls, 20% low |
|------------------------------------|-----------------|-------------------------------------|-------------------------------------|
| LIGHTING | | | |
| Title 24 2008 | \$8,199 | \$13,158 | \$16,134 |
| Title 24 2013 | \$0 | \$0 | \$2,975 |
| INCENTIVE CHANGE | -\$8,199 | -\$13,158 | -\$13,159 |
| Energy savings beyond Title 24* | — | — | 44% |

DATA CENTERS

Per square foot
1,000 ft² at 100 W/ft²
design load

| | Per square foot | 1,000 ft² at 100 W/ft² design load |
|-----------------------------|-----------------|---------------------------------------|
| HVAC | | |
| Title 24 2008 | \$67.20 | \$67,200 |
| Title 24 2013 | \$0 | \$0 |
| INCENTIVE CHANGE | -\$67.20 | -\$67,200 |

KITCHEN VENTILATION

Per square foot
900 ft² kitchen

| | Per square foot | 900 ft² kitchen |
|-----------------------------|-----------------|-----------------|
| HVAC | | |
| Title 24 2008 | \$7.79 | \$7,011 |
| Title 24 2013 | \$0 | \$0 |
| INCENTIVE CHANGE | -\$7.79 | -\$7,011 |

RTU EFFICIENCY MEASURES

Per square foot
5,400 ft² building

| | Per square foot | 5,400 ft² building |
|-----------------------------|-----------------|--------------------|
| HVAC | | |
| Title 24 2008 | \$0.63 | \$3,402 |
| Title 24 2013 | \$0 | \$0 |
| INCENTIVE CHANGE | -\$0.63 | -\$3,402 |

PARKING GARAGE VENTILATION

Per square foot
50,000 ft² enclosed
garage
below building

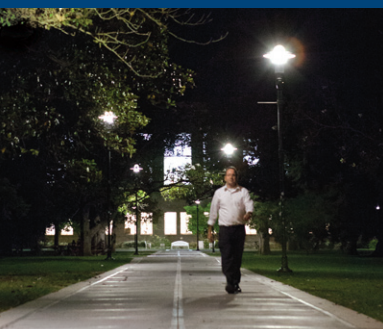
| | Per square foot | 50,000 ft² enclosed garage below building |
|-----------------------------|-----------------|---|
| HVAC | | |
| Title 24 2008 | \$0.22 | \$11,000 |
| Title 24 2013 | \$0 | \$0 |
| INCENTIVE CHANGE | -\$0.22 | -\$11,000 |

VAV FOR LABORATORY AREAS

Per square foot
34,000 ft²
lab space in
170,000 ft² building

| | Per square foot | 34,000 ft² lab space in 170,000 ft² building |
|-----------------------------|-----------------|--|
| HVAC | | |
| Title 24 2008 | \$11.31 | \$384,540 |
| Title 24 2013 | \$0 | \$0 |
| INCENTIVE CHANGE | -\$11.31 | -\$384,540 |

After incentives, UC campuses can fund the balance of project costs with a loan from the Statewide Energy Partnership (SEP) program or through utility on-bill financing (OBF). More information on Partnership incentives is available at uccsuioee.org.



For more resources and information, including technology catalogs, business case studies and demonstration maps, visit partnershipdemonstrations.org.

ABOUT THE STATE PARTNERSHIP FOR ENERGY EFFICIENT DEMONSTRATIONS (SPEED) PROGRAM:

The SPEED program is supported by the California Energy Commission and managed through the California Institute for Energy and Environment (CIEE). SPEED demonstrations are coordinated by the CIEE in partnership with the California Lighting Technology Center and the Western Cooling Efficiency Center, both at the University of California, Davis.

Questions about SPEED solutions, including technology costs, can be directed to:

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