



**T**hrough the Energy Technology Assistance Program (ETAP), local government agencies can take advantage of federal stimulus funding to receive expert technical support and cash rebates to help optimize lighting energy use and generate significant cost savings in their facilities. Retrofitting your facility with advanced wireless lighting controls can significantly reduce lighting electricity usage.

**The Energy Technology Assistance Program (ETAP) is administered by Energy Solutions as part of the California Energy Commission's (CEC) Energy Upgrade California™ initiative. Funding for the program is provided by the American Recovery and Reinvestment Act of 2009.**



## Saving Energy with Wireless Lighting Controls

Lighting controls are an important tool for effective energy management, enabling the use of such strategies as daylight harvesting, automatic scheduling (e.g., nighttime sweeps), dimming, and occupancy sensing in parking garages, office buildings and other occupied facilities.

Despite their significant savings potential, wired lighting controls are often not installed due to the high initial cost. Where controls are installed, they are often disabled by occupants. Wireless controls address these barriers by providing similar or better functionality than wired controls at a lower cost and with easier installation. Wireless lighting controls provide unprecedented flexibility in design and commissioning while maintaining centralized, remote supervisory control. Wireless lighting controls also open the doors to ongoing demand response incentive opportunities.

## Technologies and Operation

ETAP supports qualified wireless lighting controls products, including Acura Technologies' Lighting Control System and Lutron's Quantum system. These technologies allow for the installation of controls components in pre-existing light fixtures as well as new fixtures installed during construction or a lighting retrofit. The systems are very flexible and offer a large amount of programmability.

Fixture-based lighting controls communicate wirelessly through radio frequency with system components such as occupancy sensors, photosensors and individual fixtures. The fixture controls integrate the inputs of individual components and modify the lighting environment to achieve desired light levels in the most energy-efficient manner. Retrofitting a typical office with wireless lighting controls could **reduce lighting energy use by as much as 50%**.

### Features and Benefits:

- Reduces installation costs because most system components are wireless
- Intelligent step-dimming is an option; multiple control scenarios are available
- Layer daylighting and occupancy controls to provide greatest energy savings

## ETAP Technical Support

ETAP provides no-cost consultation with expert professionals who will help you identify suitable applications for supported wireless lighting control technology, evaluate the technical and economic feasibility of implementing the project, help ensure that your agency captures the available savings, and prioritize your satisfaction and understanding.

## Wireless Lighting Controls Rebate

**\$0.18/kWh** based on estimated project energy savings

## Example Wireless Lighting Controls Project Financials

Building Size (sqft)	Annual Energy Cost Savings <sup>1,2,3,4</sup>	ETAP Rebate	Utility Incentive <sup>5</sup>	Net Project Cost	Payback In Years
25,000	\$15,797	\$9,478	\$9,478	\$72,141	4.6
50,000	\$31,602	\$18,961	\$18,961	\$124,048	3.9
150,000	\$94,790	\$56,874	\$56,874	\$332,987	3.5

Values listed above are provided as examples only and may not reflect your project's actual costs or savings.

### Assumptions:

- 1 \$0.15/kWh energy rate
- 2 Approximate breakdown of space = 50% open office and 50% private office
- 3 Power at controled points = 96W
- 4 Approximate blended savings from scheduling, daylight harvesting, presence detection and personal control = 50% for open office and 35% for private office space
- 5 Standard utility rebate of \$0.09/kWh

## Case Studies

- **PEIR Wireless Lighting Controls**  
<http://www.aduratech.com/pdf/CEC-TB-38.pdf>
- **Personal Controls Lighting Retrofit of an Open Plan Office Demonstration at Webcor Concrete Facility**  
[http://www.aduratech.com/pdf/Case-%20Study\\_Webcor.pdf](http://www.aduratech.com/pdf/Case-%20Study_Webcor.pdf)
- **PIER Wireless Integrated Photosensor and Motion Sensor Demonstration at UC Davis**  
[http://cltc.ucdavis.edu/images/documents/case\\_studies/PIER\\_UCSB\\_WIPAM.pdf](http://cltc.ucdavis.edu/images/documents/case_studies/PIER_UCSB_WIPAM.pdf)

## More information

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