

**DESIGN PROCESS**

**SUSTAINABILITY**

**TEAM COLLABORATION**

**ENERGY EFFICIENCY**

 SavingsByDesign





Energy efficient buildings happen by design. They happen because they make sense to the owner, to the design team, to the bottom line, and to the environment.

SAVINGS BY DESIGN is a program to encourage high-performance nonresidential building design and construction. Sponsored by California utilities under the auspices of the Public Utilities Commission, SAVINGS BY DESIGN offers building owners and their design teams a wide range of services:

- **DESIGN ASSISTANCE** supports the integration of innovative design technologies into new construction projects.
- **OWNER INCENTIVES** help offset the costs of energy efficient buildings.
- **DESIGN TEAM INCENTIVES** reward designers who meet ambitious energy efficiency targets.
- **ENERGY DESIGN RESOURCES** offers analysis tools, training, and in-depth information on efficient technologies and strategies.

SAVINGS BY DESIGN offers these services to nonresidential new construction projects that fall under California's Title 24 energy efficiency standards, as well as other commercial, industrial, and agricultural projects that are not covered by the standards. Projects must be located within the service territories of:

- Pacific Gas and Electric Company
- Sacramento Municipal Utility District
- San Diego Gas & Electric Company
- Southern California Edison
- Southern California Gas Company

Contact your utility's SAVINGS BY DESIGN representative **early in the design process** to determine funding availability, to receive program information specific to your project needs, and to enhance your project's energy efficiency potential.

SAVINGS BY DESIGN offers assistance to make buildings more energy efficient. The program is organized around two alternative approaches to energy efficiency:

## WHOLE BUILDING APPROACH

Used for projects where the design team can integrate energy efficient solutions early in the design phase. The *Whole Building Approach* produces the most energy efficient and cost-effective building systems.

## SYSTEMS APPROACH

Used for performance-based analysis for less complex buildings, where design of the energy systems is done at different phases, or where one energy system predominates.

SAVINGS BY DESIGN provides four distinct benefits to program participants to facilitate the design and construction of energy efficient facilities:

## 1. DESIGN ASSISTANCE

*Design assistance* is available to building owners and to their design team, regardless of the design approach, and is matched to the needs of the project. Under the *Whole Building Approach*, design assistance may involve support to the design team in developing a building energy simulation model, preparing a report for the owner on recommended design modifications, and facilitating the integration of any modifications into the final building design. Under the *Systems Approach*, design assistance may include recommendations for efficient equipment, consultation on enhanced design strategies, or provision of sample specifications.

## 2. OWNER INCENTIVES

Financial incentives are available to owners when the efficiency of the new building exceeds the minimum SAVINGS BY DESIGN thresholds, generally 10% better than Title 24 standards. These incentives encourage owners to make energy efficiency a goal in their new buildings, and help to defray some of the costs of energy efficient building components. *Owner Incentives* are determined in different ways, depending on whether the *Whole Building* or the *Systems Approach* is used.

## 3. DESIGN TEAM INCENTIVES

To support the extra effort for integrated energy design and to reward exceptional design accomplishments, SAVINGS BY DESIGN also offers financial incentives to design teams whose projects exceed Title 24 by at least 10%. These incentives can provide a substantial value to the project. *Design Team Incentives* are paid directly to the design team, and are in addition to the incentives the owner receives.

## 4. ENERGY DESIGN RESOURCES

*Energy Design Resources* supports the efforts of design teams by providing energy efficiency information, design tools, and training opportunities. A valuable palette of energy design tools and resources that help make it easier to design and build energy efficient commercial and industrial buildings in California are freely available for exploration and download at [www.energydesignresources.com](http://www.energydesignresources.com).

# TWO APPROACHES TO ENERGY EFFICIENCY

## 1. THE WHOLE BUILDING APPROACH

### OWNER INCENTIVES

The *Whole Building Approach* is the preferred method of estimating energy savings within SAVINGS BY DESIGN because it enables the design team to consider integrated, optimized energy efficiency solutions. Integrated systems that balance electric and gas use may produce a building that offers greater health, comfort, and productivity for its occupants, while being less costly to build and operate for the owner.

The *Whole Building Approach*, in addition to informing the design process, calculates the estimated total annual energy savings for the building compared to the Title 24 minimum requirements. The analysis can be prepared by the design team, or by an energy consultant provided by the utility, using an approved computer tool. *Owner Incentives* range from \$0.10 - \$0.30 per annualized kWh savings and \$1.00 per annualized therm savings as the design becomes more efficient. Owners may be eligible to receive the following additional incentives, provided certain requirements are met (See the *SBD Handbook* Section 3.3):

- Enhanced Commissioning Incentive
- Certification Incentive
- End Use Monitoring Incentive

Each incentive is calculated as 10% of the Owner's Incentive. The maximum incentive per project is \$500,000 (\$150,000 SMUD).

### DESIGN TEAM INCENTIVES

SAVINGS BY DESIGN fosters a team approach to the design of energy efficient buildings. By working together to integrate the systems within a building, architects, engineers, lighting designers, energy consultants, owner's representatives, and others can more effectively design efficient facilities that may qualify for *Design Team Incentives*. These incentives are offered to encourage teams to explore these higher levels of energy efficiency, to help offset some of the added costs inherent in investigating and specifying enhanced options, and to ensure the inclusion of energy efficient features in a new construction project.

To qualify for *Design Team Incentives*, the team uses the *Whole Building Approach* and a computer simulation model to optimize their design. The

model calculates the energy savings of the building compared to the Title 24 baseline. The design team qualifies for incentives when the building design saves at least 10%. *Design Team Incentives* range from \$0.033 - \$0.10 per annualized kWh savings and \$0.333 per annualized therm savings as the design becomes more efficient. The maximum incentive per project is \$50,000.

The Design Team will submit a summary report of one qualifying proposed integrated design. Projects exceeding Title 24 by at least 10% will receive *Design Team Incentives* upon construction completion and verification. Design teams submitting projects that perform at least 30% better than Title 24 are now eligible to receive 50% of the incentive upon utility acceptance of the proposed design. The balance of the incentive will be paid upon construction completion and verification.

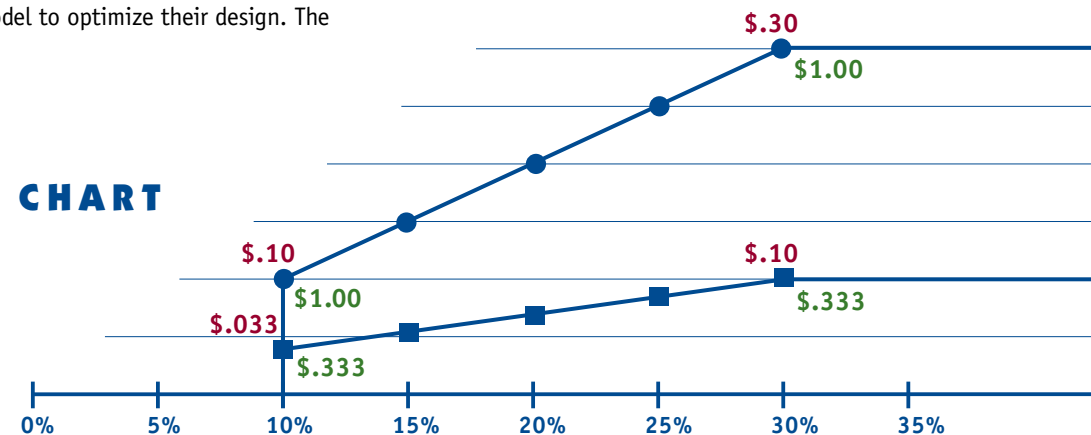
## WHOLE BUILDING APPROACH INCENTIVES CHART

Electric Incentive Rates/Annualized kWh Savings

Gas Incentive Rates/Annualized Therm Savings

● OWNER - \$500,000 (\$150,000 SMUD) maximum

■ DESIGN TEAM - \$50,000 maximum



Note: Projects will also receive \$100 per peak kW saved for all measures, subject to all appropriate caps.

## 2. THE SYSTEMS APPROACH

The *Systems Approach* is a method of optimizing energy efficiency choices for less complex buildings. Each building system can be designed to achieve greater efficiency as a whole rather than as a collection of components. It's straightforward and the design team may find it more appropriate for their project.

Using a simplified energy simulation modeling tool, your **SAVINGS BY DESIGN** representative can help your team identify system options and quickly estimate the associated potential savings. At the same time, your **SAVINGS BY DESIGN** representative can identify which systems qualify for potential *Owner Incentives*.

### DAYLIGHTING SYSTEMS

Daylighting has a major impact on a building's functionality from many perspectives. Not only does it decrease energy costs associated with illumination and space conditioning, but it also enhances the building's comfort and ambiance, as well as the productivity of its occupants.

### INTERIOR LIGHTING SYSTEMS

Interior lighting is a major component of any building's energy use. Thoughtful attention to illumination requirements within the building, along with thorough specifications for efficient components and appropriate controls, can substantially minimize energy usage while enhancing the functionality of interior spaces.

### HEATING, VENTILATION, AND AIR CONDITIONING SYSTEMS

The design of high-performance HVAC systems includes specification of high-efficiency equipment and controls that regulate the system to allow operation only when it's needed. Thoughtful consideration of the interactions of all system elements can substantially increase comfort for building occupants while cutting costs for the building owner.

### SERVICE HOT WATER SYSTEMS

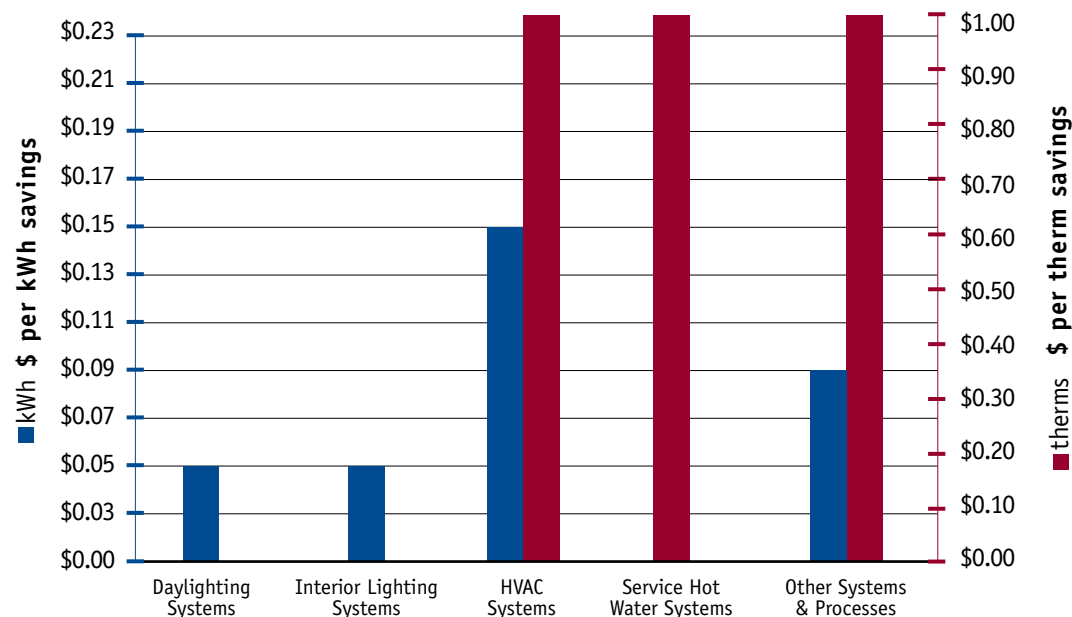
The use of high-efficiency natural gas hot water heaters can help to round out an overall approach to energy savings in the building design. Facilities that use large amounts of hot water can see substantial savings when a high-efficiency system is used.

### OTHER SYSTEMS AND PROCESSES

A variety of process systems and controls not regulated by Title 24 can be considered for the **SAVINGS BY DESIGN** program. Current industry practice is used to establish a reference point from which estimated energy savings are determined for manufacturing, refrigeration, food processing, mechanical ventilation systems, and other systems and processes.

See inserts in this brochure for specific details associated with each of these systems.

## SYSTEMS APPROACH INCENTIVES CHART



Note: Projects will also receive \$100 per peak kW saved for all measures, subject to all appropriate caps.

## HOW DO I PARTICIPATE?

A SAVINGS BY DESIGN representative will work with you throughout the entire process to explain the program opportunities, coordinate the utility's design assistance services, guide the application and agreement process, verify installation of the measures, and deliver the incentives when all requirements of the program have been met.

### PARTICIPATION PROCEDURES

1. Contact the utility early in the design process to initiate participation. Go to [www.savingsbydesign.com](http://www.savingsbydesign.com) for contact information.
2. Once a Letter of Interest is submitted, work with your SAVINGS BY DESIGN representative to determine the most appropriate approach.
3. Make integrated energy efficiency a project goal and explore a variety of options during the design phase.
4. Submit required documentation to validate the energy efficiency design enhancements.
5. Sign the offered incentive agreement that reserves funds for your project.



6. Assure that elements of the design are included in the completed building.
7. Notify your SAVINGS BY DESIGN representative, upon completion of your project, to schedule an on-site verification of the energy efficiency features.
8. Receive your incentive check, and enjoy the ongoing benefits of an energy efficient facility.

Incentives are not guaranteed and are only available for projects which meet the minimum energy efficiency requirements of the program and satisfy all other program requirements set forth in the Program Agreement and Documents. All participants must sign these documents and submit the required documentation. Both *Owner* and *Design Team Incentive* payments are contingent upon site verification.




This program is funded by California utility customers and administered by Pacific Gas and Electric Company, Sacramento Municipal Utility District, San Diego Gas and Electric, Southern California Edison Company, and Southern California Gas Company under the auspices of the California Public Utilities Commission.

2010

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SBD 2010 1.0K 01.10

