

# Savings By Design: Zero Net Energy

September 11, 2015



# Introduction to Savings By Design

**Savings By Design** is a statewide energy efficiency program available to new construction, additions, and major renovations that have set high performance energy efficiency goals

Savings By Design encourages high performance, sustainable, design and construction of non-residential buildings to move towards Zero Net Energy (ZNE) through:

- Design Team Incentive
- Design Assistance
- Owner Incentives

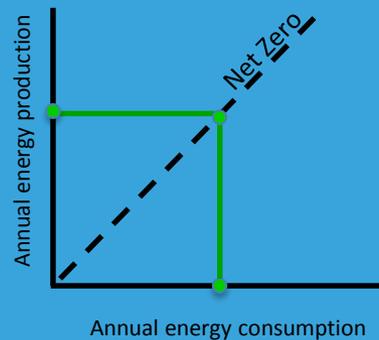


# California's Goal: Zero Net Energy



## What is ZNE?

The amount of energy provided by on-site renewable energy sources is equal to the amount of energy used by the building.



California's 2008 Energy Efficiency Strategic Plan established the following goals for Zero Net Energy (ZNE):

- All new Commercial Buildings will be ZNE by 2030
- 50% of existing buildings will be ZNE equivalent by 2030 through deep levels of energy efficiency and clean distributed generation

# Savings By Design and Zero Net Energy

- Savings By Design provides incentives and resources targeted specifically towards ZNE projects
- Sample design strategies to move towards ZNE:
  - Daylighting
  - Solar Gains
  - Natural Ventilation
  - Heat Pumps
  - Passive heating
  - Solar Chimneys
- SBD is enrolling all commercial towards ZNE projects with a focus on:
  - Hotels
  - Medical Offices
  - Restaurants
  - Hospitals



Daylighting with low partition heights

## Enrollment Requirements

- New construction or major renovations projects
- Projects are early in the design process (SD or DD)
- Targeting efficiency standards that aim towards ZNE
- A goal of 20% energy savings above Title 24
  - Initial designs may be <20% above Title 24
- Provide a working energy model

# Whole Building Approach - Owner

## Core Owner Incentive

Projects will receive \$100 per peak kW saved. Subject to all applicable caps:

- Up to \$150,000 per project\*
- Limited to 75% of incremental costs for energy efficiency measures

\*Projects located within LADWP territory that achieve energy savings significantly above Title 24 code requirements may be eligible for additional incentives

Therm & kW Incentive

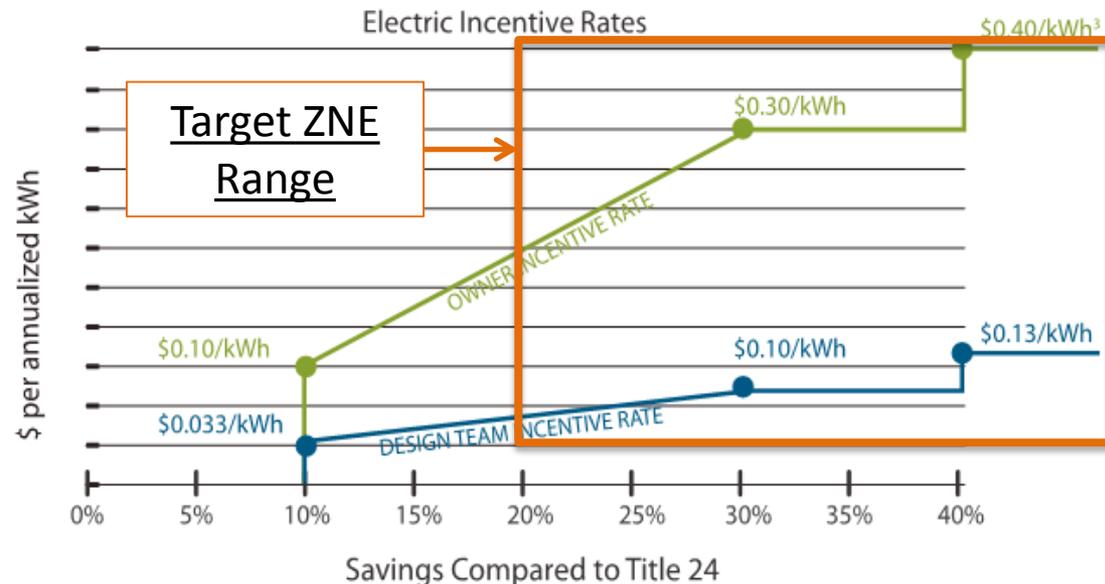
## Whole Building Incentives

Owner Whole Building Incentives - up to \$150,000

- 20% Bonus for end use monitoring

- 10% Bonus for enhanced commissioning

Design Team Whole Building Incentives - up to \$50,000<sup>1</sup>



Peak Demand Incentive Rates: \$100/kW Owner \$33/kW Design Team<sup>1</sup>  
 Therm Incentive Rate: \$1.00/therm Owner \$0.33/therm Design Team<sup>1</sup>

<sup>1</sup>Design Team Assistance to be offered in lieu of Design Team Incentives in SDG&E service territory.

<sup>2</sup>SCE therms incentive, offered in partnership with SCGC.

<sup>3</sup>Not available in PG&E service territory

## Additional Owner Incentives

*Additional 10%*

### **Commissioning Incentive**

- Successfully complete & submit a comprehensive commissioning plan, verifying that energy-related systems are installed, calibrated and perform according to design

*Additional 20%*

### **Measurement & Verification Incentive**

- Install end-use metering equipment for lighting, HVAC, and process-and-plug loads



# Whole Building Approach – Design Team

## ZNE Design Team Assistance & Incentives

### **Assistance Matched to Need & Project**

- Plan review & recommendations
- Passive design analysis
- Daylighting
- ZNE strategies
- Fuel cells
- Energy modeling recommendations

### **Incentives**

- Maximum \$50,000 per project\*

### **Early Collaboration**

- Maximize your savings by having the Savings By Design team involved as soon as possible in the design of your project

*\*Available to Design Teams who engage utilities early in the design process*



# Case Study

- Los Angeles Office Building
  - Approx. 100,000 Square Feet
  - Savings of 23.2% above Title 24
    - 450,450 kWh
    - 23.5 kW
    - 17,818 therms
  - Owner Incentive: \$126,000
  - Design Team Incentive: \$42,000
- Energy Conservation Measures
  - Increased quantity and quality of insulation
  - Recover energy from building exhaust
  - Integrate direct/indirect evaporative coolers
  - Lighting Control Systems
  - LED lights



# Next Steps for Getting a Project Enrolled

- **Evaluate Project:** Do you have projects in your pipeline that have goals towards ZNE?
  - New Construction/Major Renovation
  - Design/Pre-Design stage
  - Amenable to design changes to incorporate ZNE technologies and design components
- **Submit Interest:** Fill out a Letter of Intent (LOI) to show that you are interested in learning more about SBD for your building project
- **Talk Details:** Participate in a call with the building's engineers and the utility's engineers to talk in more technical detail about the design and next steps

## Savings By Design

Visit the Website

[www.savingsbydesign.com](http://www.savingsbydesign.com)

Contact Us

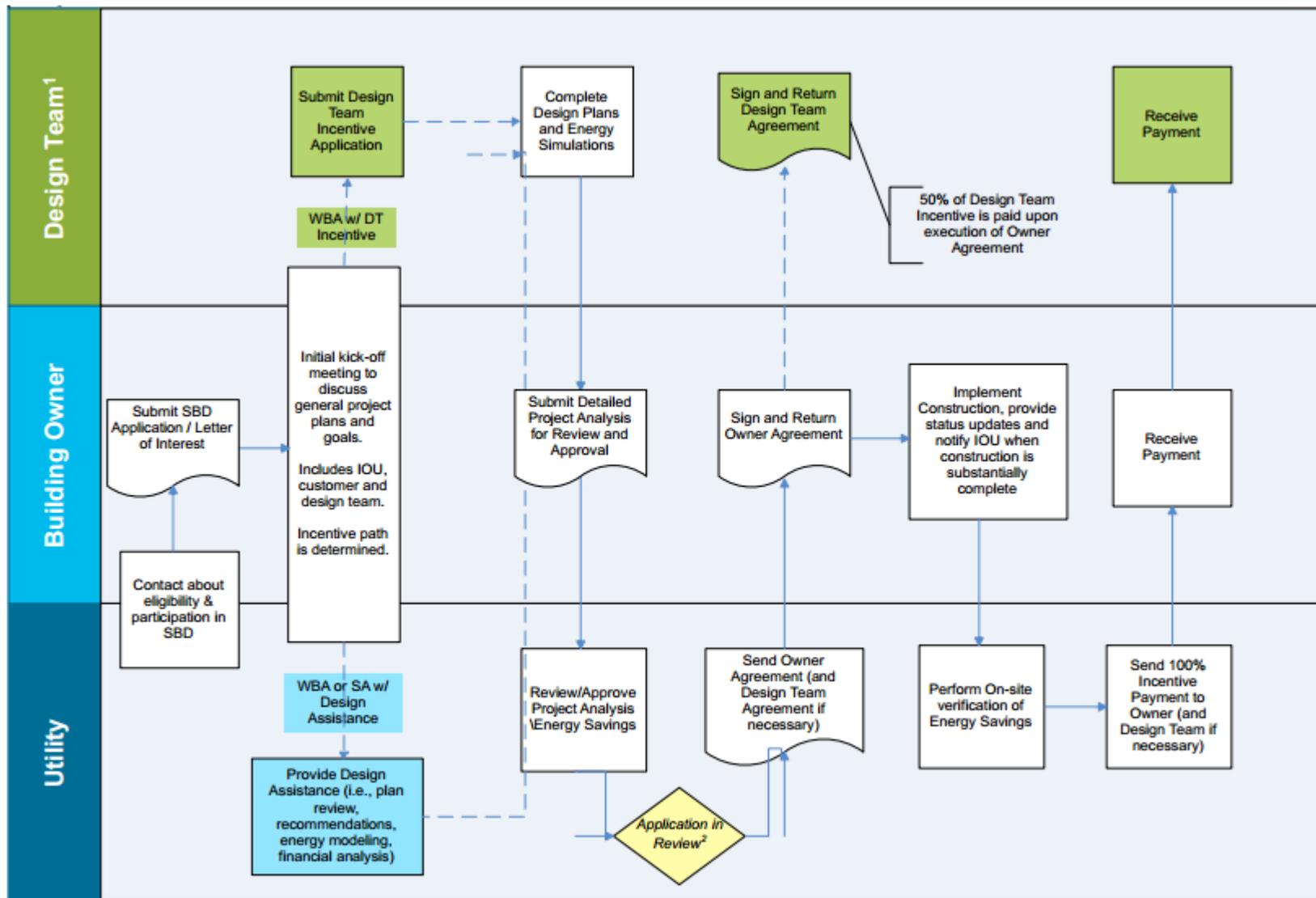
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# Appendix

# Savings By Design Process



<sup>1</sup> Design Team Assistance to be offered in lieu of Design Team Incentives in SDG&E service territory.

<sup>2</sup>Projects are subject to CPUC Energy Division approval, which can place execution of Incentive Agreements on indefinite hold.

WBA – Whole Building Approach SA – Systems Approach DT – Design Team

--- Optional Process Dependent on Incentive path

- **How do you determine efficiency and incentives?**
  - Owner and Design Team Incentives are based upon the project's estimated annual energy and demand savings (kW, kWh and therms) and are calculated according to the rates and program entry levels shown in Savings By Design Participant Handbook.
- **How much is a typical incentive?**
  - Incentives vary by project and may range anywhere from \$500 to \$150,000.
- **When do I get paid?**
  - Incentive payments are issued after construction completion is confirmed by an on-site verification and when all other required documentation has been received.
- **How long do I have to build?**
  - Projects have 48 months from the date of approval to complete construction
- **Is there a cost to participate?**
  - No, in fact design assistance and consulting is offered at no charge to the Owner or the Design Team.
- **What technical documents do I provide?**
  - Letter of interest (LOI)
  - Project program information, including Code analysis, PDF file
  - Site plan and floor plans of architecture, mechanical (including equipment schedule), electrical (including lighting schedule) and plumbing drawings, PDF file
  - Elevations and wall sections, PDF file
  - Specifications, PDF file
  - Title 24 "energy whole building performance calculation" in PDF and BLD files.
  - Project Permit date
- **When do I need to contact you?**
  - At a point where design changes are feasible, preferably in the conceptual or schematic design phase.

*Additional FAQs are available here:*  
<http://www.savingsbydesign.com/faqs>