



## **2020 PARTICIPANT HANDBOOK**

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### **POLICIES AND PROCEDURES FOR PARTICIPATION IN THE STATEWIDE SAVINGS BY DESIGN PROGRAM**

**Last Revised: December 2019**

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

This program is funded by California utility ratepayers and administered by Pacific Gas & Electric Company, San Diego Gas & Electric Company, Southern California Edison (SCE) Company, and Southern California Gas Company (SoCalGas) under the auspices of the California Public Utilities Commission (CPUC). The municipal portion of this program is funded and administered by Sacramento Municipal Utility District and Los Angeles Department of Water and Power.

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## 1.0 NEW FOR 2020

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This update to the Savings by Design (SBD) handbook incorporates guidance from the CPUC Commission Staff (CS) that specifies how to create two baselines: one for program eligibility determination and one for incentives calculations. Commission Staff also provided guidance on the appropriate way to model program savings that affect the baseline model, proposed model and calculation approach for both the eligibility and incentive simulations. These changes and guidance have been incorporated into two new versions of EnergyPro, version 6.8.0.5 (or later sub-version) for the 2013 Title-24 Standards and version 7.2.6 (or later) for the 2016 Title-24 Standards. The Investor Owned Utilities (IOUs) statewide SBD team prepared a “Baseline Guidance Document” for projects that use other approved modeling software programs. These changes affect the eligibility and savings calculations for almost all building types. The changes generally follow the modeling approach described in the paper “How to Simulate Energy Savings of Non-Residential New Construction Savings by Design Program in California” paper 4-428. Additional changes are anticipated for the 2019 Title-24 Standards.

### **HVAC AND LIGHTING CONTROL WORKFORCE STANDARD QUALIFICATION REQUIREMENTS.**

As required by the CPUC, to be eligible to receive energy efficiency (EE) incentive for heating, ventilation, and air conditioning (HVAC) measure exceeding \$3,000 and/or for lighting control (LC) measure exceeding \$2,000 that are installed, modified or maintained in non-residential buildings, each worker and/or technician performing such installation must provide IOU with a copy their applicable qualification as follows:

- (1) HVAC Measure Installation Qualification. at least one of the following criteria: (a) Completed an accredited HVAC apprenticeship. (b) Is enrolled in an accredited HVAC apprenticeship. (c) Completed at least five years of work experience at the journey level according to the Department of Industrial Relations definition, Title 8, Section 205, of the California Code of Regulations, passed a practical and written HVAC system installation competency test, and received credentialed training specific to the installation of the technology being installed. (d) Has a C-20 HVAC contractor license issued by the California Contractor’s State Licensing Board.
- (2) Lighting Control Measure Qualification. A certification from the California Advanced Lighting Controls Training Program.

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## 2.0 PROGRAM OVERVIEW AND POLICIES

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### 2.1 INTRODUCTION

Savings By Design (SBD) is California's nonresidential new construction energy efficiency (EE) program, administered statewide and funded by Utility customers through the Public Purpose Programs surcharge that is applied to gas and electric services.

The participating utilities are listed below:

- Pacific Gas and Electric (PG&E)
- Sacramento Municipal Utility District (SMUD)
- San Diego Gas And Electric (SDG&E)
- Southern California Edison (SCE)
- Los Angeles Department of Water and Power (LADWP)

This statewide approach offers a multi-faceted program designed to consistently serve the needs of the nonresidential building community throughout California. SBD encourages energy-efficient building design and construction practices. It helps meet California short and long-term energy goals, and promotes the efficient use of energy by offering up-front design assistance and financial incentives based on project performance.

SBD uses the uses a CPUC-modified version of most current version of the California Building Energy Efficiency Standards (Title 24, Part 6) as a reference baseline for comparison (see document posted on the website for details); and when appropriate, uses other industry standards to determine reference baselines for comparisons. It encourages and generates project energy savings to perform better than mandated by Title 24. SBD analyses provide detailed technical and financial assistance data that allows Owners and Design Teams to make informed decisions regarding EE features.

#### **2.1.1 BENEFITS OF PARTICIPATION**

Projects participating in SBD may receive technical design assistance (TDA) or Design Team Incentives<sup>1</sup>, Owners' Incentives, and/or other applicable services. Services begin in the project design phase and continue through construction completion. TDA can range from a simple plan review and/or efficiency upgrade recommendation to a complete computer simulation analysis that compares a number of alternative systems and integrated building design options. Financial incentives, to help offset increased design interaction and potential costs of construction, are available for projects that exceed the thresholds established by the program. Participation in the program brings additional benefits, such as:

- a. Reduced long-term operating costs
- b. Conservation of natural resources and reduced greenhouse gas creation due to avoided power generation.

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<sup>1</sup> SDG&E does not offer Design Team Assistance and Design Team Incentives in its service territory.

### **2.1.2 DESIGNED FOR NONRESIDENTIAL NEW CONSTRUCTION PROJECTS**

SBD targets the primary decision-makers in new construction and renovation/remodel projects:

- a. Building Owners
- b. Developers
- c. Architects
- d. Engineers
- e. Designers
- f. Contractors
- g. Builders
- h. Energy consultants

The program serves commercial, public, industrial, and agricultural customers.

## **2.2 DEFINITIONS**

**Alternative Calculation Method (ACM):** Official method for demonstrating performance compliance with California's Energy Efficiency Standards. The most current version of ACM Approval Manual is available from the California Energy Commission (CEC). Certain baselines will be affected. CPUC requires a change to the ACM, please check with your IOU.

**Application for Savings by Design:** A form completed by the building Owner, Owner's representative, or Design Team to inform the Utility of their interest in the program and to provide a brief summary of project details including the project name, address, size, building type, and project scope. application providing project information and intent to participate in the program. The application is synonymous with a letter of intent or the early screening document. The application does not guarantee a project will ultimately qualify for incentives or other program offerings. The project will require an executed Owner agreement.

**SBD Baseline Guidance Document:** The CPUC Commission Staff recently issued guidance that substantially altered the basic approach and methods used to determine energy savings for SBD projects. These changes were incorporated into new versions of EnergyPro and memorialized in the Baseline Guidance Document.

**Climate Zone:** The California Energy Commission defines a set of 16 similar climatological regions across the state which allow for comparison of EEM savings and tend to favor certain types of measures due to the influence of weather. The CPUC uses the same CEC climate zones for the definition of DEER Peak.

**Construction Document:** Drawings and specifications created by an Architect that detailed requirements for project construction.

**Technical Design Assistance:** Consultative services that assist customers in

integrating energy efficient recommendations into the design of the customer's facility. Although customized for each project, design assistance may include the following: integrated design facilitation, energy calculation analysis, life-cycle cost analysis, and other services.

**DEER Peak:** The CPUC oversees the Database of Energy Efficiency Resources (DEER) that is a repository of a wide variety of Energy Efficiency Measures (EEMs) and the guidelines developed by Commission Staff and the Utilities governing the implementation of energy efficiency programs. DEER Peak is the definition of time period when the demand for electricity across is the greatest for a specific California Climate Zone (CACZ).**Design Development:** The preparation of more detailed drawings and final design plans that show correct sizes and shapes for rooms. Also included is an outline of the construction specifications, listing the major materials to be used.

**Design Team:** The group responsible for the design and implementation of the systems in the building that use energy or affect the building's overall energy consumption. The Design Team will generally include the building Owner, Project Architect, Mechanical and Electrical Engineers, Lighting Designer, Energy Consultant, Contractor, and possibly others. Design Teams that receive incentives are responsible for documenting and delivering program influence over the customer's energy efficient decisions on behalf of the utilities. The program influence is included in the Energy Efficiency Report.

**Design Team Application:** A form submitted by the Design Team Leader to the Utility indicating interest in participating in the Design Team Incentives component of the SBD program.

**Design Team Leader:** The person who, for purposes of this program, takes the lead in examining and implementing EE options, specifically, the person who signs the Design Team Agreement and represents the Design Team to the Utility. Generally, this will be the project architect, mechanical engineer, or energy consultant.

**Energy Efficiency Report:** A document that provides the Utility with a detailed explanation of the SBD project scope and EE measures that the design team has incorporated into the integrated building design. This report contains the contact information of each design team member and incremental costs for each EE measure type. The report also chronicles how the design team delivered program influence over the customer's energy efficient decisions on behalf of the Utilities. It includes, but is not limited to, a financial analysis of various EE measure combinations and associated incentive levels and energy savings. The Energy Efficiency Report can also be referred to as the Whole Building Summary Report.

**Free Rider:** A program participant who would have implemented the program measure(s) or practice(s) in the absence of the program.

**Gas Surcharge:** An unbundled rate component included on a customer's gas bill to fund Public Purpose Programs, including EE, income qualified services, and research and development.

**Owner Agreement:** An Agreement executed between the program participant and the Utility that documents the estimated electric and gas savings and the estimated incentive amount for the project. Funds are reserved for a period of 48

months upon execution of this Agreement.

**Design Team Agreement:** An Agreement executed between the design leader and the Utility that documents the estimated electric and gas savings and the estimated incentive amount for design team lead when applicable. Funds are reserved for a period of 48 months upon execution of this Agreement.

**Integrated Design:** Involves all Design Team members and enlists them to consider energy use and financial impacts throughout the design process in order to make appropriate decisions. Integrated design calls for the Design Team members to be synergistic in the building design, construction, operation, and maintenance of the facility.

**Incremental Cost:** The cost that the customer will incur above and beyond the cost based on their original design of the building, or design alternatives that were evaluated for comparison. These costs are associated with the implementation of program recommended energy savings technologies that enable the facility's efficiency to exceed current Title 24 standards. Incremental costs are to be provided by measure type (*for example*, Lighting, Mechanical, and Envelope) and should include hardware, labor, change orders, and engineering costs.

**Integrated Design Analysis:** A comprehensive analysis that includes energy simulation and financial analysis to quantify the benefits associated with multiple energy efficient options and strategies.

**Investor-Owned Utility (IOU):** The four investor-owned utilities whose energy efficiency programs are governed by the California Public Utilities Commission include Pacific Gas and Electric (PG&E), San Diego Gas and Electric (SDG&E), Southern California Edison (SCE), and Southern California Gas (SGC).

**Measure:** An alternative or set of design specifications for a construction feature, equipment, or system that provides an equivalent level of service using less energy at a higher cost than the baseline.

**Measurement and Verification (M&V):** A set of activities performed after construction or installation to gather the information necessary to recalculate project savings. The SBD program is required to conduct measurement and verification for a sample of projects to verify program savings calculation procedures are being followed.

### **Major Renovation definition:**

- Projects that modify the characteristics of an existing building, including but not limited to windows, insulation, and other changes to the building envelope that involve a complete change in the purpose of the facility (such as converting a warehouse to a manufacturing plant), or
- Projects that involve increasing the square footage of a building, as well as removing, redesigning, and/or replacing the energy-consuming systems of the building or process, or
- Projects that require design and selection of new systems based upon the needs of new or modified space functions, or Major tenant improvements that add new load.

**New Construction:** The New Construction (NC or NEW) installation type category includes new equipment that has been installed in a newly constructed area or in an area that has been subject to a major renovation. It involves complete multi-system replacement, area re-construction, or equipment installed to increase the capacity of existing systems due to existing or anticipated new load handling requirements.

**Owner:** The building Owner and/or developer of a project participating in the SBD program.

**Program Influence:** A California Public Utilities Commission (CPUC) requirement where documentation must be provided demonstrating that the incentive played a major role in the customer's decision to include the more efficient option(s), and that the measure(s) would not have been installed absent the program. Projects that are not influenced by the Program Administer are not eligible for incentives. Design Teams are responsible for documenting the program influence that they were successful in delivering on behalf of the utilities by changing the participant's design decisions to adopt more energy efficient solution(s). The project's Energy Efficiency Report is the repository for program influence documentation and should include a discussion of the technical feasibility, mechanism of savings (if not obvious), measurability/verifiability, data collection requirements, calculation approach(es) including the chosen simulation software, and incremental cost(s).

**Project:** The scope of work contained in one set of construction documents as submitted for permits or a major phase.

**Public Purpose Programs Charge (PPPC):** SBD is a Public Purpose Program, which is managed under the auspices of the CPUC and administered by the participating California gas and electric Utilities. The funds from the PPPC are directed toward a variety of efforts including income-qualified ratepayer assistance and EE.

**Reference Baseline:** SBD uses a CPUC-modified version of the applicable California state energy standard (Title 24 and Title 20) as a reference baseline, a benchmark from which energy savings are determined (see document "Baseline Guidance Document" posted on the website for details). If the ACM baseline does not accurately reflect design changes or technological advances, the Utility representative reserves the right to use a "standard practice compliant building" approach or similar baseline adjustment. Where energy standards are not applicable, but substantial energy savings are feasible, a standard practice baseline will be used. An experienced Utility engineer will determine or approve the appropriate baseline to be applied to such a building project and or process.

**SBD Representative:** The Utility representative responsible for establishing, facilitating, and maintaining the relationship between the Utility, the Owner, and the Design Team for the purpose of achieving the benefits of the program.

**Schematic Design:** The preparation of studies to ascertain the requirements of the project. It consists of drawings and other documents that illustrate the scale and relationships of the project components for approval by the Owner. The Architect may also submit to the Owner a preliminary estimate of construction

costs based on current area, volume, or other unit costs. This is the ideal phase for a project to become involved in SBD because it allows plenty of time for the preparation of studies to ascertain the impacts of energy efficiency measures (EEMs) on the feasibility and cost effectiveness of the project.

**Time Dependent Valuation (TDV):** TDV, as the name implies, applies value to energy depending on the time it is used. This means that electricity saved on a hot summer afternoon will be worth more in the compliance process than the same amount of electricity saved on a winter morning. The value assigned to energy savings through TDV more closely reflects the market for electricity, gas, propane, and other energy sources and provides incentives for measures, such as thermal storage or daylighting, that are more effective during peak periods.

**Title 20:** California Code of Regulations relating to appliance efficiency. It is also known as the Appliance Energy Efficiency Standards. Title 20 sets minimum efficiency requirements for appliances, such as package-units, exit signs, and other building elements in the state of California.

**Title 24:** California Code of Regulations relating to building design and construction. Part 6 of Title 24 is the Energy Efficiency Standards for Nonresidential Buildings. Title 24 sets minimum efficiency requirements for building construction materials and energy-consuming equipment in the state of California.

**Warm Shell:** In "warm shell" projects, the building envelope, central mechanical system, and core lighting systems are included in the design and Title 24 documentation. Future build out work or tenant improvements are typically permitted separately and may result in subsequent participation in the program if the tenant chooses to participate and the project meets the program terms and conditions in the application.

**Utility:** California electric and gas utilities who have chosen to participate in SBD: PG&E, SMUD, LADWP, SDG&E, SCE, and SoCalGas.

**Zero Net Energy (ZNE\*):** A zero net energy project uses as much energy as it generates on an annualized basis. ZNE buildings typically incorporate substantial amounts of on-site electricity generation such as solar photovoltaics. ZNE projects are exempt from some program rules that require net positive energy use.

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### 2.3 General Requirements and Eligibility

To be eligible for SBD, projects must be:

- a. At a point in the design development process where the customer can be influenced by the program's offerings to implement energy efficient design alternatives in place of their current or conceived designs.
- b. Located in the service territory of a participating Utility and subject to payment of PPPC for electric service and/or the gas surcharge for gas service.
- c. Within the definition of new construction.
- d. Project must be 10% better than Title 24 or another appropriate baseline.

Projects may be deemed ineligible for SBD incentives if:

1. The project is determined as a free-rider (see definition above)
2. The project results in negative energy or the Database for Energy Efficiency Resources (DEER) peak demand savings
3. The project received incentives for the same measures from another Utility incentive rebate source including "upstream programs" where the incentive is built-in to the price provided by the supplier
4. The project does not present a Net Potential Benefit to the Rate Payers
5. Redirected by the SBD Representative to other incentive offerings
6. The customer is unable to provide proof of permit closure documentation required by Senate Bill 1414 (applicable for projects including HVAC) or other local, state and/or federal requirements for which the participating utility must comply.
7. The project cannot begin installation of the energy efficiency components prior to receiving an executed Owner Agreement.
8. The project includes on-site renewable generation assets that result in no energy usage from grid-supplied fossil-fuel sources (except ZNE projects)
9. The project does not follow program rules, misses applicable deadlines, or installs equipment not previously reviewed and approved by the Utility.

### 2.4 THE PARTICIPATION AND BASIC PROCESS<sup>2</sup>

To participate in the Program, the building Owner must adhere to the following requirements:

- a. Building Owner must meet the required standard of program influence
- a. Must be willing to consider the analysis recommendations, and then document how the recommendations influenced the project's energy-efficient design outcomes.
- b. Attend a meeting with the Design Team to discuss the viability of

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<sup>2</sup> For a schematic of the Savings By Design Process, see *Chart 1: Savings By Design Process* on Page 12, below.

implementing various energy efficiency strategies

- b. Sign the Owner Agreement offered by the SBD Representative prior to the beginning the construction/installation of the energy efficiency equipment.

Below is an outline of the process.

1. Project Initiation: In order to begin the process:
  - Owners or other project representatives initiate contact with a SBD Representative (or vice versa) – OR –
  - A Design Team initiates contact with a SBD Representative (or vice versa) indicating that they have a Customer who is interested in participating in the program
2. Application: Once contact has been made, the Owner submits a completed Participation Letter, Project Information Form, or Program Application (using the appropriate form[s] provided by the Utility) indicating their interest in the program. When applicable, the Design Team must complete a Design Team Application during the conceptual or schematic design phase to establish their interest in participating. The Design Team Application will be reviewed and approved by the Utility.
3. Design Process: A SBD Representative will hold a meeting with the Owner/Owner's Representative and the Design Team to explain the program's policies and procedures.

A SBD Representative will work with participants to determine which program path (Whole Building Approach [WBA] or SA) to take. The SBD Representative or Design Team will then use an array of analysis tools to help the customer cost-effectively optimize the EE of the project. Specific design assistance services will depend on the program path selected.
4. Final Design: After the customer has been persuaded by the program offerings and incentives to select the recommended EE enhancements, the Owner or Design Team will submit final plans, energy calculations (conducted using program-approved software), incremental costs, appropriate influence documents, and other design documents to the SBD Representative for the Utility to review. If applicable, the Design Team will provide documentation of its interactions with the Customer and present evidence of how they worked on behalf of the program to influence the customer's decisions to install energy efficient design options.
5. Pre-Installation Verification: The SBD Representative reviews and approves the project and issues an Agreement to the Owner/Design Team<sup>3</sup> delineating the proposed project details, estimated incentive amounts, and terms and conditions.

The Owners Agreement (OA) must be signed and approved prior to installing/construction of the energy efficiency measures.

The Owner (and Design Team leader, if applicable) signs, dates, and

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<sup>3</sup> SDG&E offers Design Team Assistance instead of Design Team Incentives in its service territory.

returns the Agreement to the SBD Representative. By signing the Agreement, the Owner acknowledges that they have read and agree to all program eligibility requirements. Receipt and approval of the incentive agreement from the Utility indicate funds have been reserved for the project for a period of up to 48 months. Program funding is "first-come, first-served." The Owner must agree that they will not apply for or receive any other incentive funded by the PPPC for the same measures covered under their SBD incentive agreement or any other incentive source identified by the program's policy and procedures.

6. **Post-Construction Verification:** Once construction is substantially complete, the Owner or Owner's representative must submit requested documents (*for example*, approved construction submittals, commissioning report, as built documents, proof of permit closure in compliance with SB1414) to the SBD Representative and request an on-site verification. Documentation of the EEM baseline and proposed (or as-built) costs are required to verify the incremental cost of the overall project (Whole Building Approach) or individual measure (Systems Approach).
7. **Final Measurement and Verification:** Allow access to the completed facility for on-site verification and, if selected, participate in measurement and evaluation studies pursuant to CPUC program evaluation requirements. The SBD Representative may request integrated design analysis reports, manufacturer's specifications, equipment cut sheets, and incremental cost verification to verify the completed project matches the design that was proposed in the Agreement.

If the project is built as agreed and the project meets all program requirements, the incentive will be paid. If the as-built design differs from the one outlined in the Agreement, the incentive may be adjusted to reflect the revised, estimated building performance. If installation of the agreed-upon energy efficient equipment is initiated prior to the Utility's execution of the Agreement, the Utility or the CPUC's Energy Division (ED) may disqualify the project.

Construction must be substantially complete and program participants must submit all required documentation to the Utility within 48 months from the date of the Utility's execution of the Agreement. If the project's completion is delayed beyond the final date, the Agreement may be voided; if voided, the project may be eligible to reapply under the program guidelines in effect at that time. Subsequent eligibility would be considered on a case-by-case basis and would require Utility approval and execution of a new Owner Agreement. At the Utility's discretion, the original contract may be modified to allow for the completion of construction.

Funding is limited and available on a first-come, first-served basis. The Utility reserves the right to modify or discontinue this program without prior notice at its discretion, or by order of the CPUC. Projects are subject to CPUC approval, which can place execution of Owner Agreements, on indefinite hold.

## How to Participate

### Pre-Design Phase

- Contact an SBD Representative as early in the project as possible to discuss the opportunity
- Work with your SBD Representative to incorporate language about achieving or surpassing SBD energy efficiency and sustainability goals into the Request for Proposals (RFP) and Owner's Project Requirements (OPR)

### Schematic Design & Design Development Phases

- Include a SBD Representative at a design kick-off meeting or sustainability charrette
- Conduct "simple-box" energy modeling studies to compare design alternatives and to optimize key parameters such as insulation, building form and massing, etc. — SBD can assist with these studies
- Compare energy efficient design options and conduct cost/benefit analysis — SBD can assist with this analysis

### Construction Documents Phase

- Prepare a Whole Building Report and associated documentation as needed. Contact a SBD Representative for full document requirements
- As the project nears bidding and plan check, provide final drawings and energy model to the SBD Representative for Participation and Project Approval

### Construction Phase

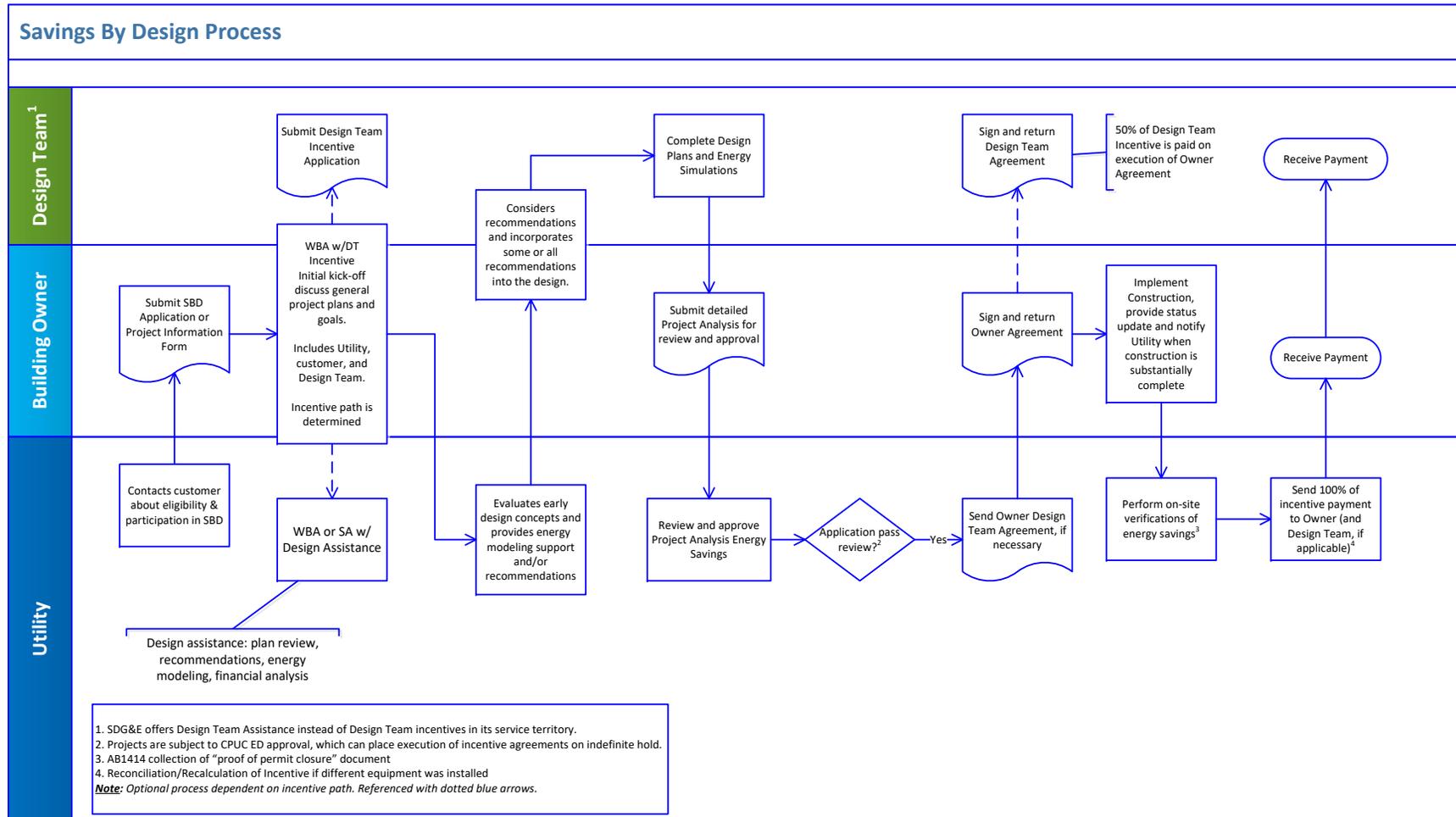
- Document the impact of SBD incentives during any Value Engineering processes, if applicable
- Provide schedule updates to the SBD Representative

### Post-Construction Phase

- Incentives provided following post-installation inspection. Final Incentives subject to as-built design revisions

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

### Savings By Design Process Flow



### 3.0 PROGRAM ASSISTANCE AND INCENTIVES

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SBD provides a variety of offerings to encourage the design of energy efficient buildings. The program offers design assistance on a project-appropriate level and financial incentives to both the building Owner and the Design Team<sup>4</sup>.

#### 3.1 TECHNICAL DESIGN ASSISTANCE

Design assistance and consulting is offered by the Utility at no charge to the Owner or the Design Team. The level of assistance provided for a project varies based on the program approach and according to the discretion of the Utility. Assistance may be as simple as providing plan review and recommendations or may be as involved as energy modeling with financial analysis on multiple options for energy efficient systems. Receiving design assistance does not obligate the Owner to implement the design recommendations.

#### 3.2 FINANCIAL INCENTIVES

The program offers financial assistance to help offset the increased costs associated with designing and constructing energy efficient buildings. 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 Tables 1 and 2 in Section 5: Tables and Figures.

Incentives are limited to 100% of the incremental measure cost (IMC) of the efficiency upgrades up to a maximum project cap of \$150,000.00.

Incentive payments are issued after construction completion is verified and when all other required documentation has been received. The final incentive amount is calculated based on the installed features. Final incentive payments may vary from agreed upon (committed) estimates as a result of changes in the design or the installation of additional energy efficiency measures.

Projects applying for SBD incentives that include non-IOU<sup>5</sup> sourced energy systems (NIOUSES) will be evaluated at the discretion of the Utility<sup>6</sup> and may result in a reduction of the final savings and incentives based on the type, output, and operation of the customer's distributed generation system. Buildings pursuing ZNE status may be granted exceptions to the non-IOU fuel source impact requirements.

##### **3.3.1 DESIGN TEAM INCENTIVES<sup>6</sup>**

Incentives are paid to a Design Team Leader who signs and submits a Design Team Incentive Application. Design Team Incentives are only available for Whole Building Approach projects with participating IOUs.

##### **Requirements and Features of the Design Team Incentive:**

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<sup>4</sup> Design Team Incentives only applicable with participating IOUs

<sup>5</sup> IOU: Investor Owned Utility.

<sup>6</sup> <http://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=11610>.

- a. Projects that execute an Owners Agreement (OA) for the whole buildings approach, may also qualify for Design team incentives.
- b. The Design Team Leader must submit a Design Team Incentive Application early in the design process.
- c. The proposed project's energy consumption must be at least 10% better than the CPUC-modified Reference baseline.
- d. The Owner must complete the whole-building Owner Agreement.
- e. The Design Team supplies the SBD Representative with an Energy Efficiency Report<sup>7</sup> that summarizes:
  - The baseline conditions, and
  - The proposed as-built conditions, and
  - The incremental costs of the project or each EE measure. Influence The electronic files containing the energy simulation, construction documents, and incremental cost estimates must also be submitted.
- f. The Utility pays 50% of the Design Team Incentive after it accepts the Owner's Agreement and Design Team Incentive Agreement. The balance of the Design Team Incentive is to be paid upon project completion (subject to as-built conditions).

### **3.3.2 END-USE MONITORING INCENTIVE**

Projects that design for and install end-use metering equipment that is able to separately monitor and record lighting, HVAC, process, and/or plug loads may be eligible for an extra incentive. This incentive is calculated as 10% of the project's Owner incentive (but cannot exceed program maximum). Projects applying for the End-Use Monitoring Incentive need to submit an End-Use Monitoring Plan describing how the metering equipment will be installed and operated. The End-Use Monitoring option does not supersede Post-installation Measurement and Verification (M&V) when required for some BD projects based upon the incentive amount. The Utility may request M&V data at some date after occupancy to ensure that the building is operating within the parameters of the design. The CPUC may require M&V at its discretion for new construction projects. The findings of the end-use monitoring data will not affect any incentives previously awarded per the Agreement.

#### **Requirements for End Use Monitoring:**

- Design documents, reports, and/or invoices that reflect the end-use metering installation and connection to the Energy Management System (EMS), and
- Screenshot that shows the meters are connected to the EMS.

## **4.0 TWO PROGRAM APPROACHES TO ENERGY EFFICIENT BUILDINGS**

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Two approaches — the Whole Building Approach (WBA) and the Systems

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<sup>7</sup> SCE refers to an Energy Efficiency report as a Whole building summary report.

Approach (SA) — are available to identify and quantify energy-efficient design improvements. The approaches provide the flexibility required to serve a large range of nonresidential project types. After discussing project specifics, the SBD Representative will help select the most advantageous approach based on the scope, phase, and goals of the project.

## **4.1 WHOLE BUILDING APPROACH**

SBD promotes the use of integrated design analyses through the WBA. Analyzing the performance of the building as a whole improves the Design Team's ability to optimize interactive efficiency effects of the various building systems. WBA projects must incorporate a minimum of three energy efficiency measures (EEM), falling under at least two of the following systems: lighting, envelope, and mechanical. When the EEMs are modeled together, the project (energy model) must exceed Title 24 by a minimum of 10%.

### **4.1.1 CALCULATION REQUIREMENTS**

WBA analysis requires the use of a program-approved energy design simulation tool. The use of specific modeling tools may be acceptable at the discretion of the program administrators.

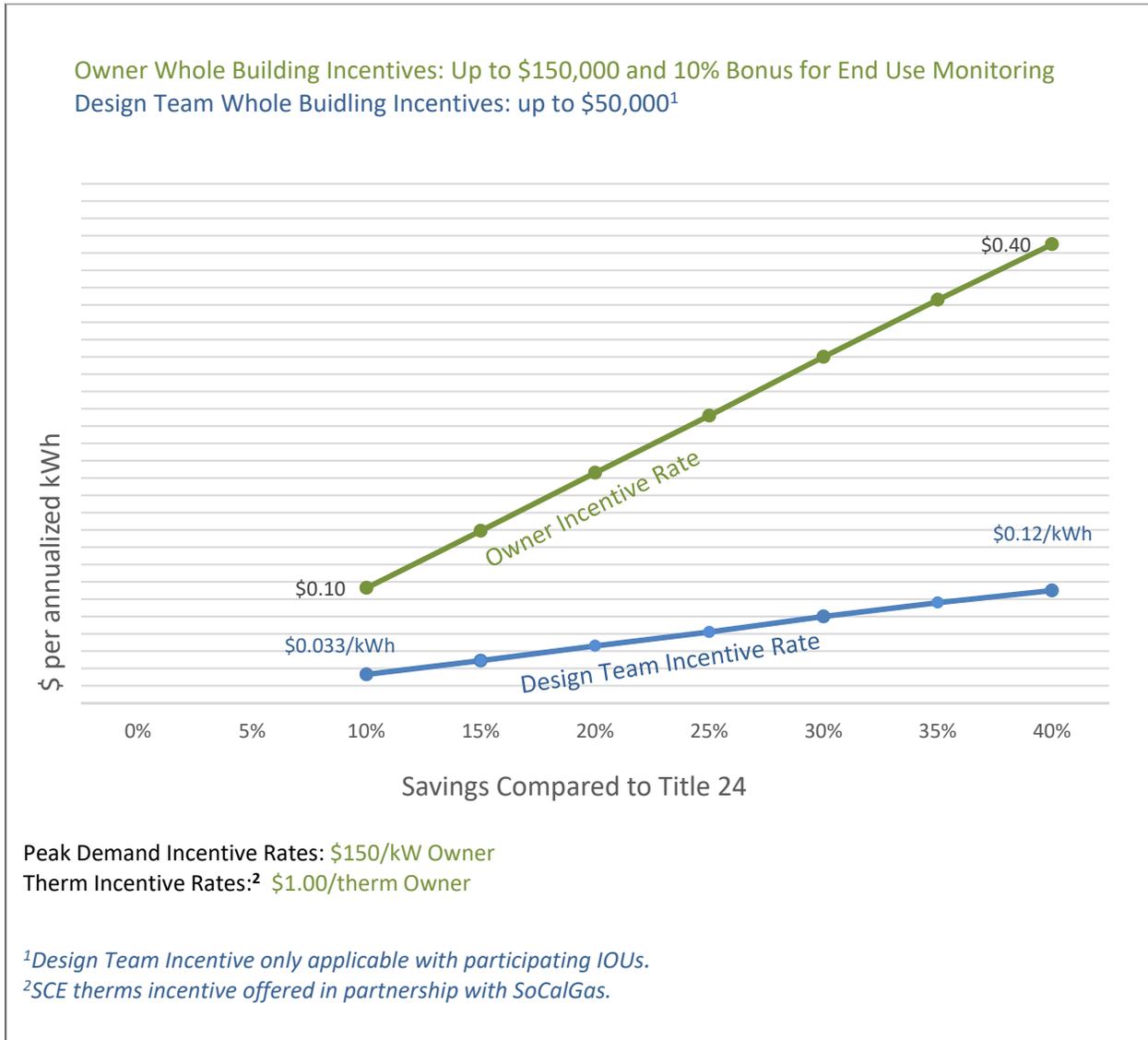
### **4.1.2 WHOLE BUILDING APPROACH INCENTIVES.**

The annual energy savings is calculated by an approved modeling tool to determine the % better than Title 24. For projects falling between 10% and 40% better than CPUC-modified Reference baseline, the kWh incentive rate is on a sliding scale and is equal to the "% better than title 24." The Therm Incentive and Peak Demand Incentives are both flat rates. (See *Figure 2*). The minimum program requirement is for the project to exceed Title 24 by 10% or greater.

WBA projects are eligible for an incentive based on peak demand reduction. (See *Figure 1* on the next page.)

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**Figure 1: Whole Building Approach Incentive Rates**



## 4.2 SYSTEMS APPROACH<sup>8</sup>

The SA encourages designers to optimize the EE of the systems within a building. The SA is most appropriate for less complex projects affecting one or two systems or for those whose systems that were designed at different times. SBD provides this straightforward approach to identify potential EE options and impacts for common building types and system features. The SBD Representative uses a simple, performance-based modeling tool to quickly

<sup>8</sup> For SA projects only, if at the discretion of the Program Administrator (PA), it is identified that the customer can receive incentives for proposed energy efficiency measures through more cost-effective and streamlined program offerings, the customer may be directed to apply for such programs (in lieu of the SBD program) by the PA.

estimate typical energy savings associated with recommended measures in a typical building and to calculate corresponding incentives.

The Calculation Methodology for a typical SA project uses a simplified modeling tool with the assistance of the SBD Representative. Each system needs to exceed current SBD minimum thresholds.

### **4.2.1 SYSTEM APPROACH INCENTIVES**

System Approach incentives are calculated using a set incentive rate, \$/kWh and \$/Therm, and varies by system installed (\$0.08/kWh for lighting, \$0.15/kWh for HVAC, \$0.15/kWh for Other systems and Processes, and/or \$1.50/Therm reduced). In addition, SA projects are eligible for an incentive based on peak demand reduction, which is calculated at a set \$150.00/kW reduced. See *System Approach Incentive Rates and Entry Levels*, in **Section 6 Table 1**.

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## 5.0 TABLES AND FIGURES

**Table 1: Whole Building Incentive Rates and Entry Levels**

Incentive Type	Entry Levels (% Better than T24)	Incentive	Maximum Incentive Per Project <sup>1</sup>
<b>Whole Building Approach</b>			
<b>Incentives paid to the Owner/Developer:</b>			
Owner Incentive	10%	\$0.10 - \$0.40/kWh, \$1.00/Therm, + \$150.00 / peak kW	\$150,000
End Use Monitoring Incentive	10%	10% of Owner Incentive	N/A
<b>Incentives paid to the Design Team Leader</b>			
Design Team Incentive <sup>2</sup>	10% <sup>3</sup>	1/3 of Owner Incentive <sup>4</sup>	\$50,000
<sup>1</sup> Incentives are limited to 100% of the incremental measure costs associated with efficiency upgrades with a maximum project cap of \$150,000.00.			
<sup>2</sup> Design Team Incentive only applicable with participating IOUs.			
<sup>3</sup> Half of the Design Team Incentive is payable upon receipt of a signed Owner's Agreement and approval by Utility.			
<sup>4</sup> Design Team Incentive calculations do not include End-Use Monitoring incentives.			

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**Table 2: Systems Approach Incentive Rates and Entry Levels**

Program Approach and System Categories	Incentive	Maximum Incentive Per Project <sup>*</sup>
<b>Systems Approach</b>		
Lighting Systems**	\$0.08 / kWh \$150.00 / peak kW	\$150,000
HVAC Systems**	\$0.15 / kWh \$1.00 / therm \$150.00 / peak kW	
Refrigeration	\$0.15 / kWh \$1.00 / therm \$150.00 / peak kW	
Envelope Measures	\$0.15 / kWh \$150.00 / peak kW	
Service Hot Water Systems	\$1.00 / therm	
Other Systems and Processes <sup>*</sup>	\$0.15 / kWh \$1.00 / therm \$150.00 / peak kW	
<sup>*</sup> Incentives are limited to 100% of the incremental costs associated with efficiency upgrades with a maximum project cap of \$150,000.00.		
<sup>**</sup> For SA projects only, if the IOU identifies that the customer can receive incentives for proposed EE measures through more cost-effective and streamlined program offerings, the IOU may direct the customer to apply for such programs (instead of the SBD program).		

End (December/2019)