



All-Electric Residential New Construction Participant Handbook

This handbook is a working document and Energy-Smart Homes staff reserves the right to update, change and revise the document to clarify program rules and requirements. The most up-to-date version is available on the Energy-Smart Homes website. **This document is version 4.1**.

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Pacific Gas and Electric Company®

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1 Program Terminology

Following is a brief list of terms and parties that this handbook includes.

Accessory Dwelling Unit (ADU): A smaller, independent residential dwelling unit located on the same lot as a stand-alone single family home. ADUs include conversion of existing attached space, a new attached building, or conversion of existing detached space.

Affordable Housing: Housing that is deemed affordable to those with a household income at or below the median income level as rated by the national government or local government by a recognized housing affordability index.

All-Electric: A building or home with no gas end uses in which electricity is the only power source that heats, cools, illuminates, launders, preserves, and prepares food, and entertains.

Alterations: For the Energy-Smart Homes programs' Alterations component, we define an alteration as a complete change in technology from a gas appliance to an electric appliance.

Applicant: The entity, or representative of the entity applying to Energy-Smart Homes. In cases where the applicant is a pass-through entity, such as a Limited Liability Companies (LLC) or a Limited Liability Partnership (LLP), the parent company of the pass-through entity listed on the application will be considered the Applicant.

Builder: A person(s) or firm whose business is the construction of dwellings.

CALGreen Building Code EV ready requirements: For single family homes, the 2019 California Green Building Standards Code ("CALGreen", Title 24, Part 11) requires that new construction and major alterations include adding "EV Capable" parking spaces that have electrical panel capacity, a dedicated branch circuit, a raceway to the EV parking spot, and wiring to support future installation of charging stations. For multifamily homes, CALGreen requires 10% of parking spaces to be "EV Capable" charging spaces. Spaces must be identified on the plans, but no chargers are required to be installed at "EV Capable" spaces. These requirements remained the same in the 2022 code.

The 2022 CALGreen Code updated multifamily dwellings to have additional "EV Ready" charging requirements. They must have 25% of their parking spaces equipped with low power level 2 receptacles, and 5% of parking spaces in buildings with 20 or more units require higher power level 2 chargers. These spaces must be identified on the plans.

Projects permitted after July 1, 2024, must comply with CALGreen code 4.106.4.2.2.

California Electric Homes Program (CalEHP): Residential new construction program available statewide for market rate all-electric residential new construction.

California Energy-Smart Homes Program: Residential new construction program available to Investor-Owned Utility customers, referred to as Energy-Smart Homes throughout this document.

California Energy Commission (CEC): The California Energy Commission, is the primary energy policy and planning agency for California. The CEC is the program administrator of the California Electric Homes (CalEHP) program.

California Public Utility Commission (CPUC): A regulatory agency that regulates privately owned public utilities in the state of California, including electric power, telecommunications, natural gas, and water companies.

Certified Energy Analyst (CEA): This certification signifies that an individual understands the current Building Energy Efficiency Standards. The California Association of Building Energy Consultants (CABEC) manages both the residential and nonresidential CEA certification programs.

Contractor: A person or company that undertakes a contract to provide materials or labor to perform the service or job on a project.

Company Division: A company division is an operational unit within a larger corporate structure responsible for overseeing and managing construction projects within a specific market or geographic area, with independent decision-making authority. Multiple divisions within the same company can apply as separate entities, provided each division operates independently. For production builders with multiple regional divisions, each division will have its own incentive cap, and the program will track reserved incentives for each division separately.

Developer: A person(s) who develops land through construction and who, to this end, becomes an owner of the developed land.

Duplex: A house plan with two living units attached, either next to each other as townhouses, condominiums, or above each other like apartments. Duplex homes share a single wall with a dwelling unit on either side of the wall. Duplexes must be modeled as individual and separate units.

Energy Consultant or Title 24 Consultant: The party responsible for preparing and revising the energy model using Title 24 compliance software.

ENERGY STAR®: A program that the U.S. Environmental Protection Agency and U.S. Department of Energy run that promotes energy efficiency.

Heat Pump Space Heating: Heat pumps use electricity to move heat from one place to another instead of generating heat directly. An example of a heat pump space heating is the ductless mini split heat pump, which is a system that uses individual wall-mounted blowers to provide heating and cooling to a room.

Heat Pump Water Heating (HPWH): Heat Pump Water Heaters use electricity to move heat from one place to another and therefore heating the water instead of generating heat directly. Therefore, they can be up to three times more energy efficient than conventional electric resistance water heaters.

HERS Rater/Rater: A third-party special inspector that performs field verification and diagnostic testing at various times during construction, to corroborate the technical specification of the energy conservation measures reported in the energy model.

IOU: Investor-Owned Utility.

Induction Cooking: Cooktops with electromagnetic fields beneath the surface that create heat directly within cookware, rather than relying on indirect radiation, convection, or thermal conduction.

IRF: Incentive Request Form.

Lots: A designated parcel or area of land established to be used, developed, or built upon as a unit and independent building site. Used in this handbook to identify single or multifamily new construction units and homes.

Mixed-fuel: Refers to buildings with electricity and natural gas utilities.

Mixed-use: A development that blends residential, commercial, institutional, or entertainment uses into one space.

Multifamily high-rise (MFHR): Housing with four or more separate units connected by shared walls located in one building with four or more habitable stories above ground.

Multifamily low-rise (MFLR): Housing with four or more separate units connected by shared walls located in one building with three or fewer habitable stories above ground. A "habitable story" refers to any story that has a dwelling space on it. A parking garage is not a habitable story whether it is above or below ground.

Operations Associate: A member of the California Energy-Smart Homes team assigned to the participating project to act as the liaison between the participant and builders throughout your project's lifespan. The operations associate will be your dedicated guide throughout the program.

Pacific Gas and Electric Company (PG&E): PG&E provides natural gas and electricity to approximately 16 million people from Eureka in the north to Bakersfield in the south, and from the Pacific Ocean in the west to Sierra Nevada in the east. PG&E is the statewide IOU lead for Energy-Smart Homes.

Parent Company: The parent company is the primary entity that owns or holds controlling interest in a pass-through entity, such as a Limited Liability Company (LLC) or Limited Liability Partnership (LLP), applying to the California Energy-Smart Homes Program. Controlling influence is defined as ownership of more than 50% of the voting shares, equivalent decision-making authority, or a contractual agreement designating the controlling owner. For production builders with multiple regional divisions, each division may apply as a separate entity under the program, provided it operates independently, and each division will have its own incentive cap, the program will track reserved incentives for each division separately.

Participant: Refers to the active individual(s) taking place in the Energy-Smart Homes Program.

Reach Code: Local building energy code that "reaches" beyond the state minimum requirements for energy use in building design and construction.

Regional Energy Network (REN): A network of local governments partnering to promote resource efficiency at the regional level, focusing on energy, water, and greenhouse gas reduction.

Residential New Construction (RNC): The act of building any structure, or that part of any structure that is used as a home, residence, or sleeping place by one or more persons.

San Diego Gas and Electric (SDG&E): SDG&E provides natural gas and electricity to San Diego County and southern Orange County in southwestern California.

Single Family: Homes which have just one dwelling unit. For the purpose of this program, duplexes, townhomes, and ADUs are eligible under our single family program requirements. ADUs will receive the same incentive offering as multifamily low-rise projects. Manufactured Homes are not included in this definition.

Southern California Edison (SCE): SCE provides 15 million people with electricity across a service territory of approximately 50,000 square miles across Southern California.

Technical Reviewer: A member of the California Energy-Smart Homes team responsible for performing the technical plan review for each project prior to enrollment. The technical reviewer is also responsible for scheduling and executing any site visits.

Thermostatic Mixing Valve: A valve that blends hot water with cold water.

Title 24 Part 6 Building Energy Efficiency Standards ("Standards"): The current building energy standards for all residential and nonresidential buildings. Title 24 Part 6 regulates building envelope, space conditioning systems, water-heating systems, and indoor and outdoor lighting systems. Building design and construction must comply with Part 6.

Townhome: A single family dwelling unit constructed in a group of three or more attached units in which each unit extends from the foundation to the roof with open space on at least two sides. Must be modeled as individual separate units.

TRC: TRC is serving as the California Energy-Smart Homes Program implementer on behalf of PG&E. TRC recruits program participants, provides energy design assistance, conducts plan review, facilitates project approval, provides program coordination, and designs and delivers educational opportunities.

Accessory dwelling units

2 Program Introduction

This section provides an overview of the Energy-Smart Homes Program including program objectives, incentive offerings, and initial steps to participate.

2.1 Program Overview

The California Energy-Smart Homes All-Electric Residential Program focuses on supporting a high-level approach to achieving California's advanced energy efficiency policy goals through 2026. The deadline is based on the CPUC-approved program cycle and may be extended. The program is available to customers in the SDG&E, PG&E, and SCE territories.

The all-electric program offering will serve the following residential subsectors:



Multifamily low-rise

Single family, duplex, and townhomes

2.2 Program Objectives

(three or fewer stories)

Energy-Smart Homes is an all-electric residential program focused on supporting California's advanced energy efficiency policy goals and climate change mitigation. The all-electric program offers several benefits for builders and developers including reduced construction costs by eliminating gas hookups and metering, single utility permitting and installation coordination, and elimination of the need to install carbon monoxide monitors. Residents of all-electric homes will benefit from improved indoor air quality, modernized cooking control from induction stoves, improved safety from eliminating unseen gas leaks, reduced operating expenses, and can achieve deeper savings from behavior changes.

The objective of the program is to influence the decision and ease the transition to adopt all-electric new construction practices. To accomplish this, the program will educate potential participants and stakeholders on the features of all-electric homes, enroll projects, emphasize the installation of advanced energy efficiency measures, and facilitate future opportunities through non-incentivized, prerequisite measures that position homes to install high-impact demand response technologies more easily in the future. Additional program objectives include:

- Incorporating grid harmonization and utility communication-enabling measures as prerequisites in residential new construction (RNC) design, allowing for more easily achievable demand flexibility and grid integration in the near future
- Shifting the market further in favor of all-electric
- Educating home buyers on the life cycle cost savings associated with an all-electric home
- Overcoming misperceptions about fuel-substitution

2.3 Program Contact

For more information about California Energy-Smart Homes, contact us:

- Toll-free: (833) 987-3935
- Email: caenergysmarthomes@trccompanies.com
- Website: <u>www.caenergysmarthomes.com</u>
- Participant Portal: TRC Customer Portal (anbetrack.com)

To receive the latest program news from Energy-Smart Homes, sign up for our newsletter here:

Electrify your Inbox

3 Program Participation Process

This section provides an overview of the steps to take to participate in the program.

3.1 Participant Journey

Energy-Smart Homes focuses on a streamlined participant journey including a simple online application process and an online portal for document submittal and incentive requests. Figure 1 below provides a high-level overview of the Energy-Smart Homes participation process.



Figure 1. Participant Journey

3.2 Participation Steps

To participate in the Energy-Smart Homes Program, please follow these initial steps:

- 1. Access the participant portal from the program website to submit an initial application.
- An Energy-Smart Homes representative will follow up with you to discuss your project, obtain any missing or corrected information, and discuss required program application documentation. You and your project team are responsible for identifying which projects to enroll in the program.
- 3. Program staff will assign a dedicated operations associate to your project. The operations associate will schedule a kickoff call to start the enrollment process. After the call, you will submit the required program application documents through the participant portal. Energy-Smart Homes staff will review your application documents for completion and will communicate with you regarding any missing information or requirements. The program enrolls lots on a project basis; Energy-Smart Homes will enroll all eligible lots within a project until the participant reaches the program cap.
- 4. Upon receiving your enrollment documents and participation agreement, Energy-Smart Homes staff will contact you to obtain any missing or corrected information. If you are unresponsive, the project may need to be placed on hold. The operations associate makes at least six touchpoints through email and phone before placing a project on hold.
- 5. You will be required to attend a kickoff call and subsequent quarterly calls to give us updates on your project.

- 6. Once you are enrolled, TRC will issue an e-mail to the project team with project enrollment details including the number of lots, number of plans, compliance margins, and anticipated incentive levels. Incentive levels are reserved at enrollment. The project team has ten business days to contact TRC if any of the project details are inaccurate or need adjustment. If the project team does not contact TRC, the project may be dropped from the pipeline. After Energy-Smart Homes staff enrolls your project, you will need to complete construction prior to the expiration date specified in your project's enrollment documentation.
- 7. Your application documents will go through the Energy-Smart Homes technical review process.
- Throughout construction, you will submit an adjustment application if any of the following change: the number of lots/buildings, number of plans, or equipment/ product specification. Incentive estimates are subject to change if undergoing an adjustment.
- 9. As lots/building complete construction, you will submit IRFs and verification documents (outlined in section <u>4.5</u> and <u>7</u>) through the portal.
- Energy-Smart Homes staff will work with you to schedule and conduct a field verification visit as needed, as 15% of all units/lots completed in any given year will participate in field verification for quality control. See section <u>5.2</u> for field verification details.
- 11. Energy-Smart Homes staff will verify your project completion online through document submittal and coordination with HERS registries and raters (where applicable). We will review your final as-built documents for each lot on the HERS registry (where applicable) to verify that they match the plans approved during the technical plan review process. All projects are required to have a HERS rater perform testing.
- 12. After confirming all submitted lots/buildings included on the IRF have completed construction and the program has granted approval through the technical plan review process, Energy-Smart Homes staff will issue your payment via check to the payee listed on your approved application.

3.3 California Energy-Smart Homes Participant Portal

As an Energy-Smart Homes participant, you will have ongoing access to your project's status through the <u>participant portal</u>. The portal enables you to submit applications, upload documents, check on project and incentive status, and submit incentive requests. To access a project in the portal, Participants will need the application ID, applicant email address, and electric utility entered on the application.

3.4 Program Participation Requirements

This section provides program eligibility requirements. These requirements must be met to receive Energy-Smart Homes funding.

3.4.1 Eligible Building Types

The following new construction project types are eligible for Energy-Smart Homes Program incentives.

Single Family

Single Family, Duplexes, Townhomes, and ADUs. Manufactured homes are not included. This document collectively refers to all of these building types as single family hereafter.

Multifamily Low-Rise

Multifamily low-rise is defined as housing with four or more separate units connected by shared walls located in one or more buildings with three or fewer habitable stories above ground. A "habitable story" refers to any story that has a dwelling space on it. A parking garage is not a habitable story whether it is above or below ground. This documents collectively refers to these building types as multifamily hereafter.

Multifamily buildings can be enrolled on a building-by-building basis, as an entire project, or in groups of buildings that meet the program eligibility requirements. Enrolling buildings cannot have a gas line, or a gas meter associated with them; this includes gas designated for outdoor barbecues and/or fireplaces.

3.4.2 Applicant Eligibility Requirements

To be eligible for program participation, builders and/or developers must:

- Construct new single family dwelling units or multifamily low-rise buildings
- Receive electric service from PG&E, SCE, or SDG&E and pay the Public Purpose Program (PPP) Charge or provide a copy of the Will Serve letter
- Meet minimum program prerequisites and energy efficiency performance thresholds, certification criteria, and equipment specifications
- Complete construction based on the submitted project schedule and within three years of enrollment to receive incentives for all buildings
- Submit 2019 or 2022 Title 24 energy models authored by a professional that holds CABEC's 2019 or 2022 residential certified energy analyst (CEA) designation
 - When a single lot contains both a single family home and an ADU project applying for incentives, two energy models must be submitted, one for the main single family home and one for the ADU
 - The ADU's mechanical and water systems must be separate from any equipment servicing the main home
- Complete and sign an online program participation agreement, including agreeing to program Terms and Conditions
- Agree to not receive financial incentives for the same measures or scope of work from other CPUC resource-funded programs

- Adhere to all applicable federal, state, and local laws and codes, which can include public works requirements under the California Labor Code
- Apply and complete technical review and enrollment (as outlined in <u>5.1</u>)

Projects that meet program requirements will be eligible for the program if their building permit application date is after January 1, 2022, program launch date. Projects must submit complete applications and receive confirmation of project enrollment at a minimum of eight weeks prior to receiving certificate of occupancy of the first building or lot. To meet this requirement, projects must submit an initial application at least sixteen weeks prior to certificate of occupancy.

3.4.3 Prerequisites

Each dwelling unit must install the following:

- Communicating thermostats that are permanently wall-mounted and hard-wired with the following capabilities:
 - Programmable and wi-fi capability that allows occupants to remotely adjust dwelling unit temperature with a smartphone or other mobile device
 - Auto Demand Response (ADR)

NOTE: Projects installing a variable capacity heat pump (VCHP) are not required to install a communicating thermostat

- Induction cooking
 - Induction cooking should be permanently installed as the sole cooktop technology. No portable burners are permitted.
 - Deed restricted multifamily affordable housing projects are exempt from the induction requirement but must install electric cooking (no gas). Additionally, deed restricted affordable units will receive a bonus of \$500 per unit when induction cooking is installed.
- Heat pump water heating
 - Installed water heating equipment must be heat pump technology
 - Technology that utilizes electric resistance as the primary source of heating is not eligible for the program
- Heat pump space heating
 - Installed HVAC equipment must be heat pump technology. Technology that utilizes electric resistance as the primary source of heating is not eligible for the program.
- Segregated circuits by the following types:
 - Lighting including exit and egress lighting and exterior lighting
 - HVAC systems and components including furnaces, package units, whole-house fans, chillers, air handling units, cooling towers, and circulation pumps associated with HVAC
 - Domestic and service water system pumps and related systems and components
 - Plug load including appliances rated less than 25 kVA
 - Charging stations for electric vehicles

The segregated circuits requirement goes beyond that of the California Energy Code by requiring that interior plug loads and lighting loads be on separate circuits, in addition to being separate from appliances.¹ This means that any one circuit can only serve either a lighting load, a plug load, or a single major appliance.²

The program recommends the use of conventional panelboards, fuses, circuit breakers, motor control centers, and other standard wiring methods for meeting the requirement to separate electrical loads. Projects may also achieve this requirement through a well-planned wiring approach, such as connecting all HVAC units to a single feeder from the service using a combination of through feeds and taps.

- Electric Vehicle Charging (EV) Requirements (ADUs are exempt)
 - Builder agrees to construct all lots/units with a dedicated 208/240-volt branch circuit installed in the raceway.
 - The builder shall install a 208/240-Volt EV Plug in the garage or carport of each home.
 - The branch circuit, overcurrent protective device, and plug need to be rated at 40 amps minimum (in accordance with the U.S. National Electrical Manufacturers Association (NEMA)).
 - The service panel or subpanel circuit director (in relation to the overcurrent protective device) needs to be labeled as "EV Ready."
 - For multifamily projects that pulled permits before July 1, 2024, the 10% of EV Capable Spaces required by CALGreen code must have 208/240-Volt EV Plugs installed. Projects permitted after July 1, 2024, must comply with CALGreen code 4.106.4.2.2.
- Thermostatic mixing valves (TMVs) for each unitary heat pump water heater. The program does not require TMVs for central heat pump water heater systems. TMVs are not required for manufactured homes. The program does not require a TMV to be installed outside of a heat pump water heater with an integrated TMV.

TMVs mix hot and cold water to prevent scalding water from reaching faucets. A TMV can decrease energy consumption by allowing the temperature of the water heater to remain higher.

- A TMV should be installed at the water heater, not to be confused with the temper valves at faucets and shower heads.
- The TMV will need to be installed outside of the water heater where the hot water outlet and cold water inlet come together.
- TMVs are available for both multifamily and single family projects. It is important to note the gallons/minute to ensure you have the correct type of TMV.
 - For single family homes and multifamily units, the TMV should typically have a maximum of 23 gallons/minute
- Thermostatic Mixing Valves must be ASSE 1017 certified.

¹ Appliances include dishwasher, dryer, refrigerator, clothes washer, oven, whole house fan, heat pump, water heater, sump pumps, etc.

² Consider ceiling fans with lighting as a lighting load.

- ASSE 1017 certified valves are only required at the point-of-source and not intended for point-of-use.
- The program does not require TMVs for ADUs or projects installing recirculation loops in their water heating piping systems.
- The program does not require TMVs for central heat pump water heater systems. The program does not require a TMV to be installed outside of a heat pump water heater with an integrated TMV.
- Battery storage readiness (not required for ADUs or multifamily low-rise) equivalent to that required by the 2022 California Energy Code (the requirements as laid out in the 2022 Title 24 Energy Code).
 - At least one of the following shall be provided:
 - Energy Storage System (ESS) ready interconnection equipment with a minimum backed up capacity of 60 amps and a minimum of four ESS supplied branch circuits OR
 - A dedicated 1" minimum raceway from the main service to a subpanel that supplies the branch circuits described below
 - The main panelboard shall have a minimum busbar rating of 225 amps.
 - A minimum of four branch circuits shall be identified and have their source of supply collocated at the subpanel referenced above to be supplied by the ESS. At least one circuit must supply the refrigerator, one lighting circuit near the primary egress, and at least one circuit shall supply a sleeping room receptacle outlet. There is no requirement for what is supplied by the fourth circuit.
 - Sufficient space shall be reserved to allow future installation of a system isolation equipment/ transfer switch within 3 ft of the main panelboard. Raceways shall be installed between the panelboard and the system isolation equipment transfer switch location to allow the connection of backup power source.

3.5 Advanced Technology Bonus Requirements

To further advance the market towards clean energy technology and decarbonization, Energy-Smart Homes offers additional incentives for Advanced Technology Bonuses. These are measures that are proven technologies but not frequently installed in California. Additional incentives are available to offset implementation and design costs. If you plan to receive the Advanced Technology Bonus installation incentives, your application must be accompanied by an all-electric project application, which indicates interest in Advanced Technology Bonus participation. Your project will be subject to the same eligibility requirements outlined in section 3.4 and must submit the same documentation as outlined in Section <u>7</u>.

3.5.1 Central Heat Pump Water Heater

Design and installation incentives for central heat pump water heaters are available as an add-on to an existing program-eligible multifamily low-rise all-electric new construction project. Building owners applying for the program are eligible for the design incentive once for each unique building type, as determined by TRC. If you are interested in learning more about this Advanced Technology Bonus to include it as part of your application package, please let a member of our team know prior to applying.

The program will pay the full Central Heat Pump Water Heater design incentive upon receipt and verification of the following design documents:

- Current Gas Water Heater Design quote that includes:
 - Description of Part
 - Material Price
 - Labor Cost
- Central Heat Pump Water Heater Design for the provided Professional Engineer (PE) stamped system design, with the following:
 - Description of part
 - Price
 - Quantity/units
 - Final pricing
 - Quote date
 - Add/deduct alternate to establish the incremental cost of the work
- All associated dimensioned plan sets stamped by a licensed PE. At minimum, the following should be provided:
 - Plumbing
 - Architectural
 - Mechanical
- Additional Documents:
 - Spec sheet for future Central Heat Pump Water Heater
 - W9 for project payee
 - Proof of utility service at PG&E, SDG&E, or SCE through utility bill or will serve letter
 - Projects moving forward with installation of the Central Heat Pump Water Heater and seeking installation incentives must submit the same documentation as outlined in section 7 upon completion of project
- The design incentive must be applied for before installation of the system. Projects that have completed installation are not eligible for the design incentive

 The program does not require projects to complete installation to be eligible for the design incentive, but you will be eligible to receive the design incentive if the plans submitted meet the requirements listed above

3.5.2 Variable Capacity Heat Pump

Installation incentives for variable capacity heat pumps are available for single family, ADU, and multifamily owners. Equipment eligibility is contingent on the compressor being inverter driven and the system meeting or exceeding the CEE Tier 1 requirements. Eligibility is not contingent on the California Energy Commission's List of Variable Capacity Heat Pump Systems.

The program will pay the installation incentive upon receipt and verification of the following documents:

- Spec sheet for variable capacity heat pump with inverter
- For space heating and conditioning:
 - AHRI sheet showing outdoor and indoor model numbers
 - Heat pump must be CEE Tier 1
- Paid invoice
- CF2R-MCH-33 form (new construction)

3.5.3 Heat Pumps without Electric Resistance

Installation incentives for heat pumps without electric resistance are available for single family, ADU, and multifamily owners. The heat pump system must be capable of meeting the Manual J heating design load or the domestic hot water load without the use of electric resistance heating.

- Spec sheet for future heat pump that shows no electric resistance heating
- For space heating and conditioning:
 - AHRI sheet showing outdoor and indoor model numbers
 - Heat pump must be CEE Tier 1
 - Completed Manual J using ASHRAE design temperature for the area showing heating and cooling design loads
- For water heating:
 - HPWHs should be sized to the domestic hot water load of the home
- CF2R-MCH-33 form
- Paid invoices

3.5.4 Integrated Heat Pump Space and Water Heating

Installation incentives for integrated heat pump space and water heating are available for single family, ADU, and multifamily owners. These are combined hydronic systems that use a single air-to-water heat pump as the primary source of space heating and water heating, also known as a combi system.

The program will pay the installation incentive upon receipt and verification of the following documents:

- Spec sheets for heat pump, water tank(s), and heating/cooling system
- Heating distribution type (ducted, ductless, radiant, other)
- Cooling distribution type (ducted, ductless, radiant, other)
- AHRI sheet showing outdoor and indoor model numbers
- Paid invoices

3.5.5 Heat Pump Pool or Spa Heater

Installation incentives for heat pump pool or spa heaters are available for single family and multifamily owners. Only one heat pump is allowed per pool or spa. Projects are eligible for two incentives if one heat pump is installed for the pool and one heat pump is installed for the spa. No electric resistance is allowed.

The program will pay the installation incentive upon receipt and verification of the following documents:

- Spec sheet showing a minimum COP of 4.0
- Paid invoices
- Size of pool or spa (gallons)
- Photo of the pool or spa cover (Section 110.4(b).2 of Title 24)

3.5.6 Low-GWP Heat Pump

Installation incentives for heat pumps with low global warming potential (GWP) refrigerants are available for single family, ADU, and multifamily owners. The GWP of the refrigerant used must be less than 750.

- Spec sheet showing refrigerant used
- Paid invoices
- For space heating and conditioning:
 - AHRI sheet showing outdoor and indoor model numbers

3.5.7 Verified ACCA Technical Manuals

Incentives for verified ACCA Manual J, Manual S, and Manual D are available for single family, ADU, and multifamily owners.

The program will pay the incentive upon receipt and verification of the following documents:

- Submit completed Manual J, S, and D documentation for
 - Single Family and ADU: each plan type
 - Multifamily: each residential plan type
- Calculations prepared by individuals meeting one of the following:
 - A mechanical engineer
 - The mechanical contractor responsible for installing the equipment
 - Somone qualified to do so in accordance with Division 3 of the Business and Professions Code of the State of California
- Proof that the calculations were prepared by a mechanical engineer or a mechanical contractor

3.5.8 Passive House Certification

Incentives for passive house certification are available for single family and multifamily owners.

The program will pay the incentive upon receipt and verification of the following documents:

- Copy of Passive House Certificate from PHI or PHIUS
- Copy of Passive House submission documents

3.5.9 Thermal Energy Storage

Installation incentives for thermal energy storage are available for single family, ADU, and multifamily owners.

- Spec sheet for all equipment installed in the thermal energy storage system
- Pictures of the installed equipment
- Paid invoices
- Integrated Space and Water Heating:
 - Water storage tank spec sheet (must be 100 Gallons or larger)
 - Spec sheet showing JA13 Certified HPWH
- Completed CA Energy-Smart Homes Thermal Energy Storage Form

3.5.10 Induction Cooking with Integrated Battery

Installation incentives for induction cooking equipment with integrated batteries are available for single family, ADU, and multifamily owners.

The program will pay the installation incentive upon receipt and verification of the following documents:

- Spec sheet for installed range or stove
 - o Equipment must contain an integrated battery of 3 kWh or larger
 - Cooktop must use only induction technology
- Pictures of the installed equipment
- Paid invoices

3.5.11 Electrical Load Management

Incentives for electrical load management strategies are available for single family, ADU, and multifamily owners. Eligible electrical load management strategies include a smart panel, smart breakers, or home energy management system (HEMS) with the ability to:

- Measure the electrical usage at each circuit load in the home
- Control the usage by turning the electrical usage on or off from a user interface, typically a mobile device
- Integrate critical load management and backup power integration

The program will pay the incentive upon receipt and verification of the following documents:

- Spec sheet for installed smart panel, smart breakers, or HEMS
- Pictures of the installed equipment
- Paid invoices

3.5.12 ERV or HRV with Bypass

Installation incentives for an energy recovery ventilator (ERV) or heat recovery ventilator (HRV) with a bypass option are available for single family and multifamily owners. The installed equipment must meet the requirements of Title 24 Section 160.2(b)2Aivb and have a bypass or control that directly economizes with ventilation air based on outdoor air temperature limits specified in Table 170.2-G. Specific temperature limits can be found in the referenced table of the Energy Code.

- Spec sheet for installed ERV or HRV
- Picture of the installed equipment
- Completed CA Energy-Smart Homes HRV with Bypass Form
- The specified ERV or HRV system must be entered into the energy model provided

3.5.13 Continuous ERV or HRV with Override

Installation incentives for an ERV or HRV with a manual override are available for single family and multifamily owners. The installed ERV or HRV must run continuously, meet the requirements of Title 24 Section 160.2(b)2Aivb and other applicable codes, and have a manual ON-OFF switch in the conditioned space or main electrical panel displaying the following text, or equivalent text: "This switch controls the indoor air quality ventilation for the home. Leave switch in the 'on' position at all times unless the outdoor air quality is very poor."

- Spec sheet for installed ERV or HRV
- Picture of the installed equipment and override switch (located in conditioned space or main electrical panel)
- Completed CA Energy-Smart Homes Continuous ERV or HRV with Override Form
- The specified ERV or HRV system must be entered into the energy model provided

4 Incentives

4.1 Incentive Overview

The Energy-Smart Homes Program offers different incentives for each project type. Specific information on incentive offerings is available in the project-specific sections throughout this handbook. Program funds are limited. Incentives are available on a first-come, first-served basis until funds are no longer available. The program will cap participation of any applicant at 1,500 units/lots. The program defines an applicant as the parent company or the division.

The program reserves incentives based on the lot list that the participant submits during the application process. Failure to follow the submitted lot list, without updating the list with Energy-Smart Homes staff prior to any deviation in schedule, could result in the loss of incentive reservations. For projects completing lots in 2025, the deadline to receive 2025 incentives for both programs is Monday, November 17, 2025. Lots, buildings, and ADUs submitting technical review documentation after that date will be subject to 2026 incentive levels. Required technical documents include enrollment survey, MEP plans, site plan, spec sheets, and revised CF1Rs/energy models. Following technical review submittal, TRC will review your documentation and confirm your projects meet program requirements. You will then receive guidance from TRC on incentive request submittals.

4.2 All-Electric Incentive Overview

The section summarizes the program incentives by project type for all-electric construction. Energy-Smart Homes will provide deemed incentives for new construction projects that meet minimum program prerequisites and eligibility requirements. All-electric incentives de-escalate annually, based on completion year. Figure 2 provides a summary of the new construction incentives available. The program will reduce incentives by \$700 for single family homes and \$500 for multifamily homes for any project using the induction cooking exception.

New Construction Incentives per unit	2024	2025	2026
Single Family	\$3,000	\$3,000	\$2,500
Multifamily Low-Rise	\$1,600	\$1,600	\$1,400
Accessory Dwelling Unit (ADU)	\$1,600	\$1,600	\$1,400

Figure 2. New Construction Per Unit Incentives

4.3 Advanced Technology Bonus Incentives

Energy-Smart Homes offers additional incentives for projects installing program eligible advanced technologies.

4.3.1 Central Heat Pump Water Heater Bonus

Figure 3 provides a summary of the central heat pump water heater incentives.

Central Heat Pump Water Heater Bonus	Incentive
Central System Design (per project/developer) Full MEP design and documentation	\$5,000
Central System Installation (per unit served)	\$500

Figure 3. Central Heat Pump Water Heater Incentives

4.3.2 Variable Capacity Heat Pump Bonus

Figure 4 provides a summary of the variable capacity heat pump incentives.

Variable Capacity Heat Pump Bonus	Incentive
Variable Capacity Heat Pump (per single family lot)	\$300
Variable Capacity Heat Pump (per multifamily dwelling unit)	\$300
Variable Capacity Heat Pump (per ADU)	\$300

Figure 4. Variable Capacity Heat Pump Bonus

4.3.3 Heat Pump without Electric Resistance Bonus

Figure 5 provides a summary of the heat pumps without electric resistance incentives.

Heat Pump without Electric Resistance Bonus	Incentive
Heat Pump without Electric Resistance (per single family lot)	\$300
Heat Pump without Electric Resistance (per multifamily dwelling unit)	\$300
Heat Pump without Electric Resistance (per ADU)	\$300

Figure 5. Heat Pump without Electric Resistance Bonus

4.3.4 Integrated Heat Pump Space and Water Heating Bonus

Figure 6 provides a summary of the integrated heat pump space and water heating incentives.

Integrated Heat Pump Space and Water Heating Bonus	Incentive
Integrated Heat Pump Space and Water Heating (per single family lot)	\$1,000
Integrated Heat Pump Space and Water Heating (per multifamily dwelling unit)	\$1,000
Integrated Heat Pump Space and Water Heating (per ADU)	\$1,000

Figure 6. Integrated Heat Pump Space and Water Heating Bonus

4.3.5 Heat Pump Pool or Spa Heater Bonus

Figure 7 provides a summary of the heat pump pool or spa heater incentives.

Heat Pump Pool or Spa Heater Bonus	Incentive
Heat Pump Pool or Spa Heater (per piece of equipment)	\$1,000

Figure 7. Heat Pump or Spa Heater Bonus

4.3.6 Low-GWP Heat Pump Bonus

Figure 8 provides a summary of low GWP heat pump incentives.

Low-GWP Heat Pump Measure Bonus	Incentive
Low-GWP Heat Pump (per single family lot)	\$800
Low-GWP Heat Pump (per multifamily dwelling unit)	\$800
Low-GWP Heat Pump (per ADU)	\$800

Figure 8. Low-GWP Heat Pump Bonus

4.3.7 Verified ACCA Technical Manuals Bonus

Figure 9 provides a summary of the verified ACCA technical manual bonus for both single family, ADUs, and multifamily plan types.

Verified ACCA Technical Manuals Bonus	Incentive
Verified ACCA Technical Manuals (per single family plan type)	\$400
Verified ACCA Technical Manuals (per multifamily plan type)	\$4,500
Verified ACCA Technical Manuals (per ADU plan type)	\$400

Figure 9. Verified ACCA Technical Manuals Bonus

4.3.8 Passive House Certification Bonus

Figure 10 provides a summary of the passive house certification bonus for both single family and multifamily plan types.

Passive House Certification Bonus	Incentive
Passive House Certification (per single family lot)	\$1,000
Passive House Certification (per multifamily dwelling unit)	\$400
Passive House Certification (per ADU)	\$400

Figure 10. Passive House Certification Bonus

4.3.9 Thermal Energy Storage Bonus

Figure 11 provides a summary of the thermal energy storage bonus for single family, ADU, and multifamily plan types. Projects must apply after May 1, 2025, to be eligible for this bonus.

Thermal Energy Storage Bonus	Incentive
Thermal Energy Storage (per single family lot)	\$1,500
Thermal Energy Storage (per multifamily dwelling unit or ADU)	\$1,200

Figure 111. Thermal Energy Storage Bonus

4.3.10 Induction Cooking with Integrated Battery Bonus

Figure 12 provides a summary of the induction cooking with integrated battery bonus for single family, ADU, and multifamily plan types. Projects must apply after May 1, 2025, to be eligible for this bonus.

Induction Cooking with Integrated Battery Bonus	Incentive
Induction Cooking with Integrated Battery (per single family lot)	\$3,000
Induction Cooking with Integrated Battery (per multifamily dwelling unit or ADU)	\$3,000

Figure 122. Induction Cooking with Integrated Battery Bonus

4.3.11 Electrical Load Management Incentives

Figure 13 provides a summary of the electrical load management bonus for single family, ADU, and multifamily plan types. Projects must apply after May 1, 2025 to be eligible for this bonus.

Electrical Load Management Incentives Bonus	Incentive
Electrical Load Management Incentives (per single family lot)	\$3,500
Electrical Load Management Incentives (per multifamily dwelling unit or ADU)	\$3,500

Figure 133. Electrical Load Management Incentives

4.3.12 ERV or HRV with Bypass Bonus

Figure 14 provides a summary of the ERV or HRV with bypass bonus for single family and multifamily plan types. Projects must apply after May 1, 2025, to be eligible for this bonus.

ERV or HRV with Bypass Bonus	Incentive
ERV or HRV with Bypass (per single family lot)	\$2,000
ERV or HRV with Bypass (per multifamily dwelling unit)	\$1,500

Figure 144. ERV or HRV with Bypass Bonus

4.3.13 Continuous ERV or HRV with Override Bonus

Figure 15 provides a summary of the continuous ERV or HRV with override bonus for single family and multifamily plan types. Projects must apply after May 1, 2025, to be eligible for this bonus.

Continuous ERV or HRV with Override Bonus	Incentive
Continuous ERV or HRV with Override (per single family lot)	\$1,000
Continuous ERV or HRV with Override (per multifamily dwelling unit)	\$500

Figure 155. ERV or HRV with Bypass Bonus

4.4 California Residential Programs Shared Incentives

California Energy-Smart Homes will share base per unit incentives with other residential new construction incentive programs across the state of California. The following instance of when this would occur are as follows:

When a project is eligible for California Energy-Smart Homes and meets the requirements of the California Energy Commission's California Electric Homes (CalEHP) program, the project will also be automatically enrolled in CalEHP.

When a project is eligible for more than one program, the program administrators will split the total base per unit incentive cost for the applicable program incentivized costs. Each program has individual bonuses that can layer with each other. Each program will pay bonuses separately and in the full amount of that program's offering after program staff confirm the project has met the specific bonus requirements.

4.5 Incentive Request Process

The Energy-Smart Homes team and your operations associate are here to assist you throughout the incentive request process. After the project completes construction, the participant and Energy-Smart Homes staff will follow the steps below to request and process incentives.

- 1. As lots complete, participants initiate a request for installation verification and incentive payment.
- 2. Participants complete an Incentive Request form (IRF) for each completed lot. Projects can submit up to 10 lots for single family projects or 10 buildings for multifamily projects per IRF.
- 3. After completing the IRF, participants provide an electronic signature and upload to the portal. Contact your operations associate if you are having trouble with the electronic signature or the submission of the IRF in the portal.
- 4. After submitting the IRF in the portal, participants upload documents for the IRF and must include a certificate of occupancy for each completed lot.
- 5. Participants send a follow up email to their operations associate to notify them that a new incentive request is ready for processing in the portal.
- 6. TRC reviews the IRFs and completion documentation provided by the participant as well as verifies in the HERS Registry that HERS testing has been completed, and each site has been built in alignment with enrolled construction plans. Once verification is complete, TRC notifies the participant when verification is complete.
- 7. TRC will work with you to schedule and conduct a field verification visit as needed, as 15% of all new construction units/lots in the program completed in any given year will participate in field verification for quality control. See section <u>5.2</u> for field verification details specific to new construction projects. TRC reserves the right to perform site visits to confirm program eligibility on completed projects prior to issuing incentive payment(s).
- 8. TRC submits the project to PG&E for incentive payment approval.
- 9. TRC issues incentive payments to the participant on behalf of Energy-Smart Homes.
- **10**. TRC issues a project closure and completion confirmation after issuing payment for the final lot.

5 Quality Assurance/Quality Control

Energy-Smart Homes has the following quality assurance and quality control plan to support the program and verify specific project types.

5.1 New Construction Project Verification

For new construction, projects are required to go through the following technical plan review process for project verification.

- TRC will examine all documents and files that the applicant(s) provide for project plan review to verify that the project as submitted meets eligibility requirements, prior to performing the plan review; the technical reviewer will work with the intake and program coordination staff to obtain any missing documents required for the review.
- 2. TRC will compare the plans/drawings to the performance-building simulation models to ensure they are an accurate model of each plan type.
- 3. After completing the plan review, TRC will send any questions, comments, requested revisions, or additional specifications to the project team for resolution using a plan review comments spreadsheet.
- 4. The project's energy consultant or other deemed representative from the project team (builder, architect, etc.) will respond to all comments within the spreadsheet and return the spreadsheet to the technical reviewer along with any other revised building simulation files and compliance documents.
- 5. TRC's database will retain any requested revisions and corresponding answers within the project file folder for future reference.
- 6. The technical reviewer will review all the revisions. When the technical reviewer deems them approved, the project moves to the enrollment phase.
- 7. TRC will create two documents, including a Plan Check Verification Summary Sheet, to summarize the results of the plan review and provide project savings and incentive information and an approved compliance file (i.e., XML) for each plan to the appropriate HERS registry to verify the approved energy measures are the same measures that the HERS rater will inspect.
- 8. TRC will update the project database with all the approved project information and project savings numbers.
- 9. TRC will issue an e-mail to the project team with project enrollment details including the number of lots, number of plans, compliance margins, and anticipated incentive levels. The project team has five business days to contact TRC if any of the project details are inaccurate or need adjustment. If the project team does not contact TRC, the project may be dropped from the pipeline.
- 10. At completion, and upon receipt of signed IRFs, TRC will review the HERS registry for completed CF2Rs, CF3Rs, and certificate of occupancy for each lot or building.

5.2 Field Verification

TRC will conduct field verification of 15% of all dwelling units/lots in the program completed in any given year for quality control (QC). These processes will confirm enrolled projects meet all program-required energy efficiency levels and affirm the installation of all energy efficiency measures and any HERS verifications. These field verification processes will complement and leverage the official HERS verification process for code compliance. Any unoccupied homes must be made available for inspection and must be visited at random, with no bias from the site contact in selecting the homes for inspection.

TRC will maintain a list of potential projects for field verification. This list will include projects that have taken extraordinary energy features, made significant changes to their energy modeling, or give TRC any indication that they cannot meet the energy efficiency levels approved by the program. TRC's field inspection approach includes the following components:

- Schedule and project team communication protocols
- QC field inspection form creation based on enrolled specifications
- Equipment, tools, and site safety protocols
- Inspection protocols to review and document envelope and equipment specifications
- Discrepancy resolution protocols
- Results documentation and follow-up protocols

TRC reserves the right to perform site visits to confirm program eligibility on completed projects prior to issuing incentive payment(s). TRC will facilitate the prompt remedy of all installation discrepancies that may arise. Upon completion of the field verification, TRC will record any discrepancies between the submitted equipment installation documentation and the field verification. We will resolve any discrepancies between the enrolled project specification, installation documentation, or field verification as per the QA/QC plan. Discrepancy resolution may take the form of adjusting the calculated incentives or rejecting incentives altogether.

6 Other Program Policies

6.1 IRS 1099 Reporting Procedures

Energy-Smart Homes design includes incentive payments to individuals and businesses, which may require filing of IRS Form 1099. TRC will follow all applicable IRS 1099 reporting requirements and provide information as needed or requested. Neither TRC nor PG&E is responsible for any taxes that may be placed on participants because of receiving incentives.

6.2 Dispute Resolution Procedures

TRC has detailed procedures for tracking and responding to participants' questions and complaints about Energy-Smart Homes. When received, TRC will log participant complaints into a tracking system; include the nature, time, and date of the complaint; and address complaints within one week. TRC's program or operations manager will follow up with the participant to ensure the highest level of satisfaction and resolution. In the event of a dispute, the TRC program manager will be the initial point person for issue resolution. TRC will regularly report complaints to PG&E for review of each complaint's status and outcome. If TRC or PG&E identifies a recurring problem, TRC will work to adjust the program or process to avoid future issues.

6.3 Limited Funding

Program funds are limited, and are reserved on a first-come, first-served basis until funds are no longer available.

6.4 Limitation of Liability

Energy-Smart Homes will include limitation of liability statements as part of the program's terms and conditions. The statements will limit both PG&E and TRC's liability:

PG&E shall not be liable for any costs due to a Project's estimated versus actual energy savings related to the Project Incentive to be paid, Project savings that did not materialize, Project cancellation, or implementation cost increase for any reason. In no event shall PG&E, Implementer, or Customer/Builder be liable for any special, incidental, indirect, lost profits, or consequential damages arising from or related to the Project.

6.5 Handbook Version Control

This handbook is a working document and Energy-Smart Homes staff reserves the right to update, change and revise the document to clarify program rules and requirements. The most up-to-date version is available on the Energy-Smart Homes website. This document is version 4.1 (updated 5/12/2025).

7 Program Documentation Checklists

All projects must upload the following documents through the participant portal.

New Construction Project Document Checklist

Enrollment Documents

Submit before the scheduled Kickoff Call with the Energy-Smart Homes program team

- □ Lot List (template provided by Energy-Smart Homes staff)
 - □ Submitted lot lists are used to secure your project's incentive reservation. To avoid losing your project's reserved incentives, notify the program team in advance of any deviations from your submitted schedule.
- □ Share CHEERS HERS registry with TRC: TRC Energy Services
- □ CF1RS signed by a 2019 or 2022 Residential CEA

Submit after the Kickoff Call

- □ Completed and signed Enrollment Form (provided by Energy-Smart Homes staff)
- □ Completed Terms and Conditions (provided by Energy-Smart Homes staff)
- □ W9 for project payee
- Energy Models:
 - Must be in Energy Pro 8+ or CBECC Res 2019 or 2022 (.bld or .ribd format)
 - When a single lot contains both a single-family home and an ADU project applying for incentives, that project must submit two energy models, one for the main home and one for the ADU; the ADU's mechanical and water systems must be completely separate from any equipment servicing the main home.

Remaining Project Documents to be Submitted DURING Construction

- □ Current set of architectural, mechanical, electrical, and plumbing (MEP) plans
- □ Site Plan with North arrow
- Specification sheets for verification of product qualification
 - Space cooling equipment including make, model number, and manufacturer
 - Space heating equipment including make, model number, and manufacturer
 - Domestic hot water equipment including make, model number, and manufacturer
 - If applicable to your project, upload the following spec sheets for application approval:
 Induction cooktop
- □ Proof of electric utility service provider (Will Serve Letter or utility bill)
- Updated lot list
- □ Significant change orders that materially affect energy aspects of the project
- □ Revised CF1Rs and energy models

Completion Verification Documents to be Submitted AFTER Construction

- □ Incentive Request Form (IRF) identifying which lots/buildings are complete and ready for verification
- □ CF2Rs (completed and signed via the HERS registry)
- □ CF3Rs (completed and signed via the HERS registry)
- □ Certificate of Occupancy for completed lots or buildings (as noted on the IRF)
- □ Completed customer satisfaction survey (provided by Energy-Smart Homes staff)

Adjustment Verification Documents (*ONLY* required if changes were made to energy models after program enrollment)

- □ Adjustment Form
- Revised energy models for each plan or building type (.bld files or .ribd files) as applicable
- □ Revised CF1Rs (that match the CF2R & CF3R on the CHEERS HERS registry)
- Revised plans
- □ Revised specification sheets