California Energy-Smart Homes

2025 Advanced Technology Bonuses

CALIFORNIA ENERGY-SMART HOMES ALL-ELECTRIC

Agenda

Welcome and Introduction

Purpose of Advanced Technology Bonuses

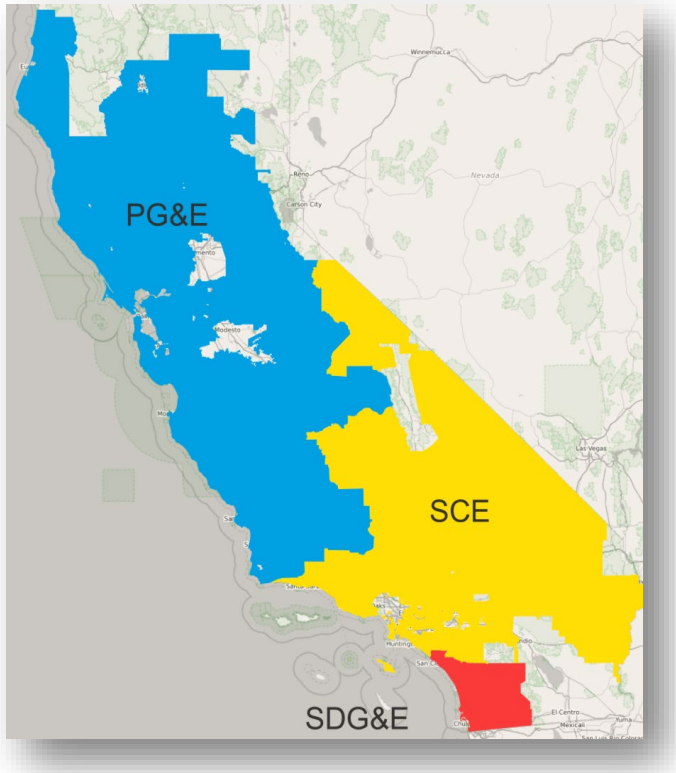
New 2025 Advanced Technology Bonuses

Eligibility Requirements

Questions and Discussion

California Energy-Smart Homes

*The **California Energy-Smart Homes** program is a residential new construction and alterations program that provides incentives to adopt advanced energy measures and support the transition to all-electric construction.*



Eligibility Requirements

- All-electric residential new construction or whole building electrification alteration projects
- Projects must be located in PG&E, SCE, or SDG&E electric utility territory
- Qualifying project types include single family, multifamily low-rise (three or fewer stories), and ADUs
- Meet program prerequisites and participation requirements
- Adhere to all applicable federal, state, and local laws and reach codes

CALIFORNIA ENERGY-SMART HOMES ALL-ELECTRIC

Parker Wall, PE

Research and Analysis Manager, TRC

Parker Wall is an engineer at TRC with expertise in energy efficiency, sustainability, and residential electrification, specializing in new and existing multifamily and single-family buildings. His work focuses on researching new electrification technologies, advancing decarbonization strategies, and supporting California's clean energy transition.

EDUCATION

BS, Mechanical Engineering
Cal Poly, San Luis Obispo

CERTIFICATIONS

- Registered Professional Mechanical Engineer, California
- BPI AC and Heat Pump Professional
- BPI Building Analyst Professional

Purpose and Objectives

Energy-Smart Homes offers additional incentives for advanced electrification technologies that are proven but not widely adopted in California

- Provide market support for advanced technologies
- Projects installing Advanced Technology Bonuses may be selected for monitoring
- Not all projects will be selected for monitoring
  - If it is selected, the owner will have the opportunity to decline.
  - Projects that participate in monitoring will receive an additional inducement.

2025 Advanced Technology Bonus Summary

Advanced Technology Bonus Summary

Advanced Technology Bonus	Sector	Description
Thermal Energy Storage	RNC or ALT	Mechanical systems that store heat energy to be used as space heating or DHW
Induction Cooking with Integrated Battery	RNC or ALT	Induction cooktops or ranges with a built-in battery that allows installation in a 120 V power supply and load shifting
Electrical Load Management	RNC or ALT	Installation of load management technologies that allow for electrification without increased electrical supply (smart panel, smart breakers, or a HEMS)
ERV or HRV with Bypass	RNC or ALT	Energy recovery ventilators with a bypass option dependent on outdoor air temperature
Continuous ERV or HRV with Override	RNC or ALT	Energy recovery ventilators with a manual override button

2025 Advanced Technology Bonus Summary

Bonus Incentives

Advanced Technology Bonus	Single Family Lot	Multifamily per unit	ADU
Thermal Energy Storage	$ 1,500	$ 1,200	$ 1,200
Induction Cooking with Integrated Battery	$ 3,000	$ 3,000	$ 3,000
Electrical Load Management*	$ 3,500	$ 3,500	$ 3,500
ERV or HRV with Bypass	$ 2,000	$ 1,500	-
Continuous ERV or HRV with Override	$ 1,000	$ 500	-

**An additional bonus is available for projects keeping their panel of 100 amps or less.*

CALIFORNIA ENERGY-SMART HOMES ALL-ELECTRIC

Thermal Energy Storage (TES)

Description

Store excess heat energy and use the energy during peak times

- **Benefits**
  - Collect energy during off-peak hours, capture excess renewable generation, or recover waste heat
  - Provide heat to the building through space and/or water heating during peak hours to shift demand and lower cost
  - Reduce energy demand which reduces strain on the utility and CO2 emissions

- **Types of TES**
  - **Sensible** – uses a material, most commonly water, to store collected heat. Sensible systems are the most widely available and affordable TES systems.
  - **Phase Change** – uses latent heat (heat needed to change phase) to store energy in a material. Phase change systems are typically used for applications that require a constant output temperature.
  - **Thermo-chemical** – uses reversible chemical reactions to store and discharge heat.

Thermal Energy Storage (TES)

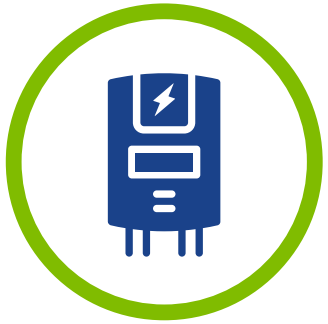
Site Eligibility and Incentive

- Single family, multifamily, and ADUs
- New construction and alterations

Advanced Technology Bonus	Incentive per Single Family Lot	Incentive per Multifamily Unit	Incentive per ADU
Thermal Energy Storage	$ 1,500	$ 1,200	$ 1,200

Thermal Energy Storage (TES)

Equipment Eligibility



DHW or Integrated Space and Water Heating Systems

- Minimum water storage tank capacity
  - Single Family: ≥ 100 Gallons
  - Multifamily or ADU: ≥ 80 Gallons (per MF dwelling)
- Title 24 JA13 Certified
  - Appendix JA13 provides qualifications for a heat pump water heater (HPWH) system to meet the requirements for demand flexibility compliance credit.

Space Heating or Cooling *Only* (No DHW)

- If using water storage, must meet minimum water storage tank capacity
- Equipment must utilize sensible, phase change, or thermo-chemical storage
- Equipment must be equipped with controls that enable heat storage during off-peak hours and discharge during on-peak hours

Thermal Energy Storage (TES)

Submission and Verification

Submission Documents

- Spec Sheet for all installed TES equipment
- Paid Invoices
- Pictures of installed equipment
  - Nameplate and wide view
- Completed California Energy-Smart Homes Thermal Energy Storage Form

Thermal Energy Storage (TES)

CA Energy-Smart Homes Thermal Energy Storage Form

Included on Form

- General Project Information
  - Project Name, Applicant Info, Address, Installation Date
- TES Type
  - Sensible, Phase change, Thermo-chemical
- Storage Material
  - Water, Sand, other
- Capacity
  - Gallons of water, BTU, other
  - Storage temperature and output temperature (ΔT)
- Load Estimate (space heating, DHW, both)
- Controls and Scheduling
  - Description of controls and equipment schedule
  - Sign that the equipment is capable of and configured to store heat energy during off-peak hours and discharge during peak hours
- Signed by the mechanical designer or installer

Induction Cooking with Integrated Battery

Description

Induction cooktops and ranges that include battery storage of 3 kWh or greater

- **Benefits**
  - Can install with 120 V instead of upgrading to 240 V (works with 120, 220, or 240 V)
  - Battery charges in non-cooking, off-peak hours
  - Cooking uses battery *ONLY* until storage is depleted

CALIFORNIA ENERGY-SMART HOMES ALL-ELECTRIC

Induction Cooking with Integrated Battery

Site Eligibility and Incentive

- Single family, multifamily, and ADUs

- New construction and alterations

Advanced Technology Bonus	Incentive per Single Family Lot	Incentive per Multifamily Unit	Incentive per ADU
Induction Cooking with Integrated Battery	$ 3,000	$3,000	$ 3,000

Induction Cooking with Integrated Battery

Equipment Eligibility

- Cooktop must use induction technology only
- The equipment must contain an integrated battery with a minimum capacity of 3 kWh

Induction Cooking with Integrated Battery

Submission and Verification

Submission Documents

- Spec Sheet
- Paid Invoice
- Picture of installed equipment
- **Alterations:**
  - Indication of electrical service to stove/range (120 V or 240 V)

Electrical Load Management

Description

Installation of load management technologies that allow for electrification without increased electrical supply (smart panel, smart breakers, or a HEMS)

- **Benefits**
  - Reduce electrical demand to reduce costs and strain on the grid
  - Potentially avoid upgrading the electrical service
  - Manage energy use to minimize monthly costs

Electrical Load Management

Site Eligibility and Incentive

- Single family, multifamily, and ADUs

- New construction and alterations

Advanced Technology Bonus	Incentive per Single Family Lot	Incentive per Multifamily Unit	Incentive per ADU
Electrical Load Management*	$ 3,500	$3,500	$ 3,500

*Additional incentive available for alterations projects keeping existing electrical service of 100 amps or less ($1,000 per SF lot and $500 per MF unit or ADU)

Electrical Load Management

Equipment Eligibility

- Projects applying for the load management advanced technology bonus must install a smart panel, smart breakers, or hardwired HEMS with the ability to:
  - Measure the electrical usage at each circuit load in the home
  - Control and schedule 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 where applicable

- Alterations projects must also complete and submit a Residential Service Upgrade Decision Tool

Electrical Load Management

Submission and Verification

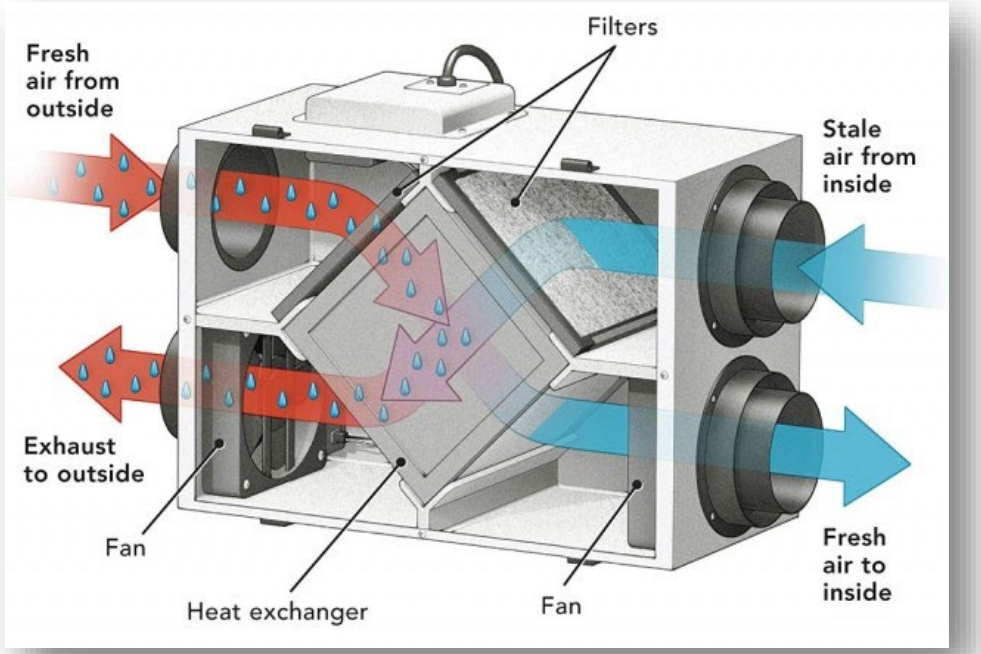
Submission Documents

- Spec Sheet
- Paid Invoice
- Pictures of installed equipment
- **Alterations:**
  - Completed Residential Service Upgrade Decision Tool
  - Picture of existing panel

Heat Recovery Ventilators

Technology Overview

Heat recovery ventilators (HRVs) exchange heat between exhaust and supply air



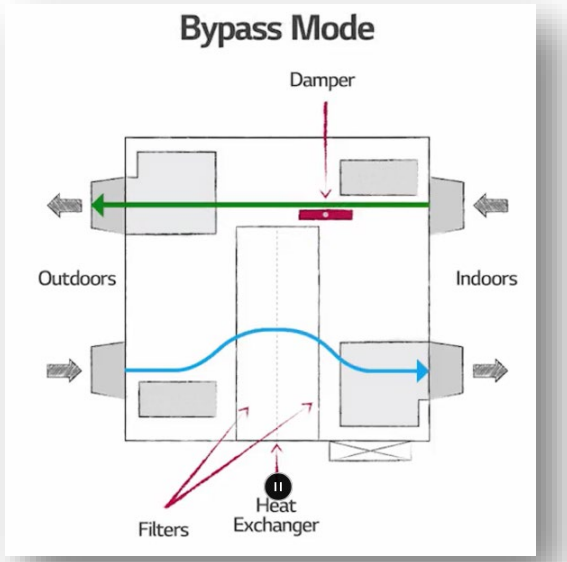
- Exhaust air leaves the home at the indoor temperature (~70 F)
- The heat is exchanged between the conditioned exhaust air and incoming air to pre-condition the incoming air
- The pre-conditioned incoming air then takes less energy to heat or cool to the desired temperature
- An energy recovery ventilator (ERV) exchanges both heat and moisture to help humidify or dehumidify the incoming air

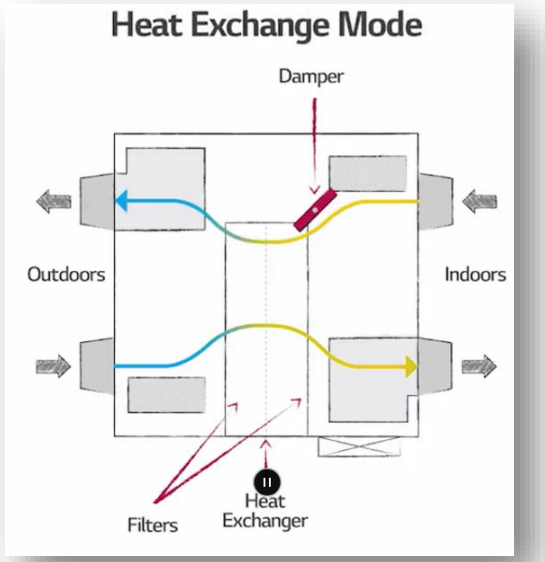
ERV or HRV with Bypass

Description

Heat recovery ventilators (HRVs) with a bypass option dependent on outdoor air temperature

- **Benefits**
  - Maximize efficiency by bypassing the ERV or HRV when outdoor air temperature would not result in increased efficiency





ERV or HRV with Bypass

Site Eligibility and Incentive

- Single family and multifamily

- New construction and alterations

Advanced Technology Bonus	Incentive per Single Family Lot	Incentive per Multifamily Unit	Incentive per ADU
ERV or HRV with Bypass	$2,000	$1,500	N/A

ERV or HRV with Bypass

Equipment Eligibility

- Equipment installed must meet the applicable Title 24 mandatory code requirements
- Equipment must have a bypass or control that directly economizes with ventilation air based on outdoor air conditions

ERV or HRV with Bypass

Submission and Verification

Submission Documents

- Spec sheet for installed ERV or HRV
- Picture of the installed equipment
- Completed CA Energy-Smart Homes ERV or HRV with Bypass Form

ERV or HRV with Bypass

Energy-Smart Homes ERV or HRV with Bypass Form

Included on Form

- General Project Information
  - Project Name, Applicant Information, Address, Installation Date
- Installed ERV or HRV
  - Model Number
- Device Type
  - Fixed Dry Bulb, Differential Dry Bulb, Fixed Enthalpy + Fixed Dry Bulb
- Bypass Temperature or Enthalpy Limit
- Controls
  - Sign that the equipment is capable of and configured to bypass depending on the outdoor air conditions
- Signed by the installer

Continuous ERV or HRV with Override

Description

Heat recovery ventilators (HRVs) that operate continuously and have a manual override option that allows the occupant to turn the equipment off when air quality is poor

- **Benefits**
  - Run the ventilation at all times to increase indoor air quality (IAQ)
  - Override the ventilation when the outdoor air quality is poor and would affect the IAQ

Continuous ERV or HRV with Override

Site Eligibility and Incentive

- Single family and multifamily low-rise

- New construction and alterations

Advanced Technology Bonus	Incentive per Single Family Lot	Incentive per Multifamily Unit	Incentive per ADU
Continuous ERV or HRV with Override	$1,000	$500	N/A

Continuous ERV or HRV with Override

Equipment Eligibility

- Equipment installed must meet the applicable Title 24 mandatory code requirements
- HRV or ERV must run continuously
- A manual ON-OFF switch must be installed 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.”

Continuous ERV or HRV with Override

Submission and Verification

Submission Documents

- 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

Continuous ERV or HRV with Override

Energy-Smart Homes Continuous ERV or HRV with Override Form

Included on Form

- General Project Information
  - Project Name, Applicant Information, Address, Installation Date
- Installed ERV or HRV
  - Model Number
- Location of Installed Switch
  - Conditioned space or main electrical panel
- Operation and Controls
  - Sign that the equipment is configured to run continuously unless manual override switch is set to OFF
- Signed by the installer

Advanced Technology Bonus Monitoring

Monitoring incentive only paid if site is selected for monitoring and the project completes and signs a participation agreement.

If selected for monitoring:

- PG&E or third-party contractor will be put in contact with site owner
- Participation Agreement to be signed by occupant or owner
- Third-party contractor will visit site to assess and install monitoring equipment

Potential monitoring equipment:

- Individual circuit monitor or smart panel
- Ultra-sonic water consumption monitor
- Enthalpy monitors

2025 Advanced Technology Bonuses

Advanced Technology Bonus	Sector	Description
Thermal Energy Storage	RNC or ALT	Mechanical systems that store heat energy to be used as space heating or DHW
Induction Cooking with Integrated Battery	RNC or ALT	Induction cooktops or ranges with a built-in battery that allows installation in a 120V power supply and load shifting
Electrical Load Management	RNC or ALT	Installation of load management technologies that allow for electrification without increased electrical supply (smart panel, smart breakers, or a HEMS)
ERV or HRV with Bypass	RNC or ALT	Heat recovery ventilators with a bypass option dependent on outdoor air temperature
Continuous ERV or HRV with Override	RNC or ALT	Heat recovery ventilators with a manual override button

Questions?

CALIFORNIA ENERGY-SMART HOMES ALL-ELECTRIC

Advanced Technology Bonuses

New Construction Advanced Technology Bonuses

Advanced Technology Bonus Incentive per Enrolled Dwelling Unit	Single Family	Multifamily Low-Rise	ADU
Variable Capacity Heat Pump (VCHP)	$300	$300	$300
Heat Pumps without Electric Resistance	$300	$300	$300
Integrated Heat Pump Space and Water Heating	$1,000	$1,000	$1,000
Low Global Warming Potential (GWP) Heat Pump	$800	$800	$800
Passive House Certification	$1,000	$400	$400
Heat Pump Pool or Spa Heater (per installed piece of equipment)	$1,000	$1,000	N/A
Verified ACCA Technical Manuals (per plan type)	$400	$4,500	$400
Central Heat Pump Water Heater Design (per project/developer and must include full MEP design, cost, and documentation)	N/A	$5,000	N/A
Central Heat Pump Water Heater Installation (per unit served)	N/A	$500	N/A

CALIFORNIA ENERGY-SMART HOMES ALL-ELECTRIC

Advanced Technology Bonuses

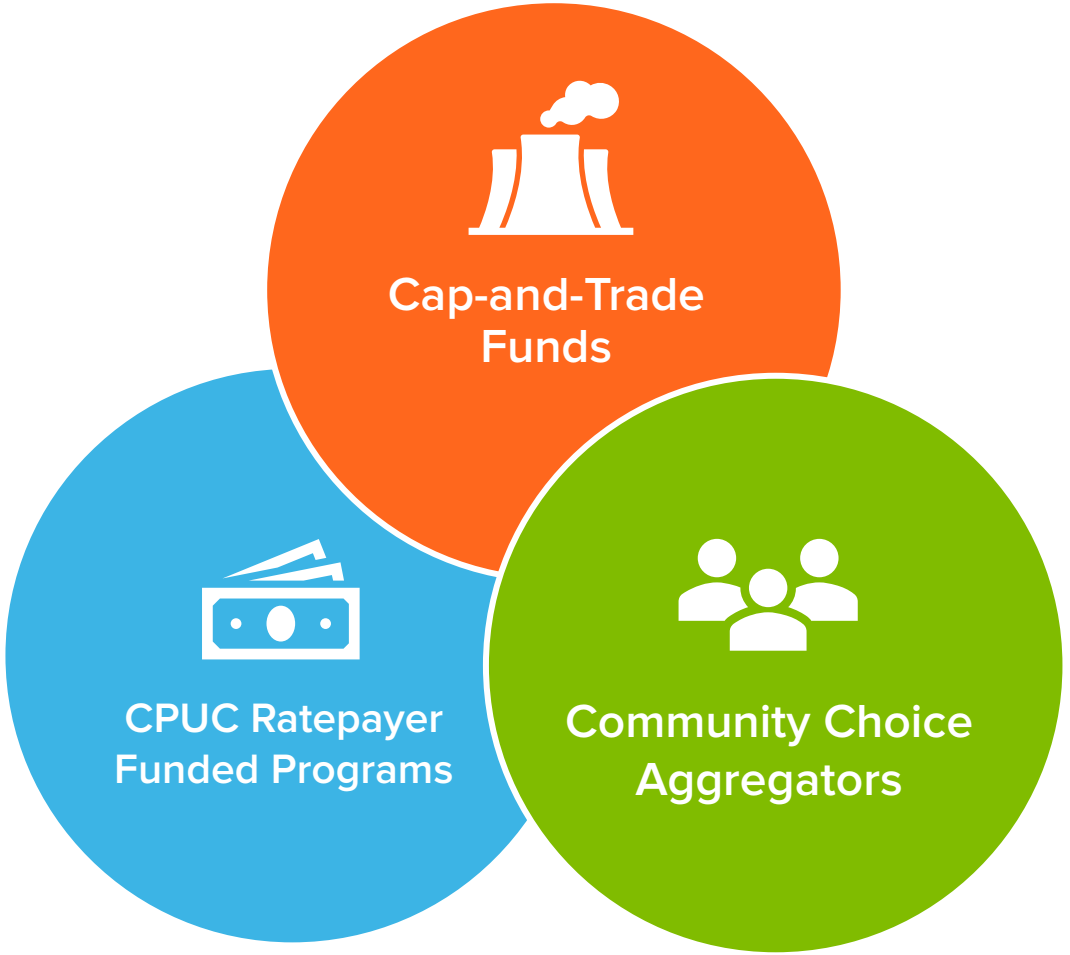
Whole Building Electrification Alterations

Incentives per Enrolled Dwelling Unit	Single Family	Multifamily Low-Rise	ADU
Variable Capacity Heat Pump (VCHP)	$300	$300	$300
Heat Pumps without Electric Resistance	$300	$300	$300
Integrated Heat Pump Space and Water Heating	$1,000	$1,000	$1,000
Low Global Warming Potential (GWP) Heat Pump	$800	$800	$800
Heat Pump Pool or Spa Heater (per piece of equipment installed)	$1,000	$1,000	N/A
Central Heat Pump Water Heater Design (per project/developer and must include full MEP design, cost, and documentation)	N/A	$5,000	N/A
Central Heat Pump Water Heater Installation (per unit served)	N/A	$500	N/A

Base Incentive + Bonus Sharing and Layering

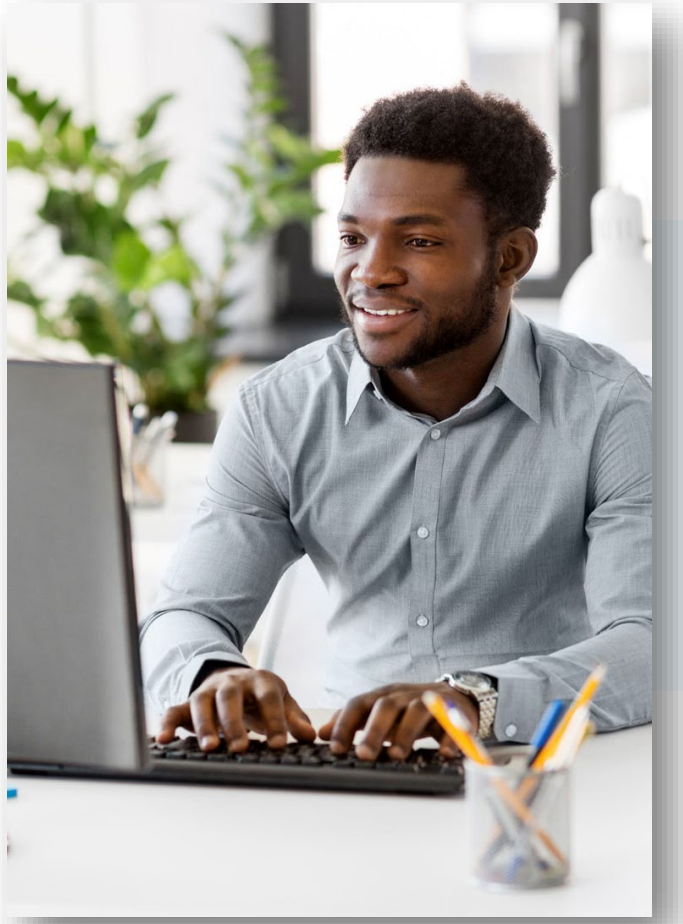
Eligibility is based on:

- Project location
- Utility service provider
- Incentive funding source



Our team can help your maximize incentives for each project through sharing and layering of base incentives and bonuses

California Energy-Smart Homes Resources



Contact us:

- **(833) 987-3935**
- caenergysmarthomes@trccompanies.com
- caenergysmarthomes.com

CALIFORNIA ENERGY-SMART HOMES ALL-ELECTRIC

Thank you!

www.caenergysmarthomes.com