



Advanced Energy Rebuild

Program Manual

Version – 7/18/19



Table of Contents

- 1. Program Background 3
- 2. Glossary of Terms 3
- 3. General Requirements 4
- 4. Program Process Overview 5
- 5. General Building Requirements..... 7
- 6. Financial Incentives 8
 - 6.1 Advanced Energy Home Requirements 9
 - 6.1.1 Advanced Energy Home Flexible Performance Pathway Requirements 9
 - 6.1.2 Advanced Energy Home Simple Menu-Based Pathway Requirements 11
 - 6.2 All-Electric Home Requirements 14
 - 6.2.1 All-Electric Home Flexible Performance Pathway Requirements 14
 - 6.2.2 All-Electric Home Simple Menu-Based Pathway Requirements..... 15
 - 6.3 PG&E Gas Only Customers..... 20
 - 6.3.1 Above Code Home 20
 - 6.3.2 Advanced Energy Home 21
 - 6.4 Bonus for Renewable Energy 21
 - 6.4.1 Onsite Renewable Energy 21
 - 6.4.2 Offsite Renewable Energy (available only for SCP customers)..... 21
 - 6.5 Multifamily Buildings..... 22
 - 6.5.1 Multifamily Design Charrette 22
 - 6.5.2 Multifamily Advanced Energy Home Requirements 23
 - 6.5.3 All-Electric Home Requirements 27
- 7. Program Frequently Asked Questions..... 34

1. Program Background

As part of its Respond, Rebuild, Resilience commitment to meeting the challenges of extreme weather resulting from climate change, Pacific Gas and Electric Company (PG&E) has increased financial incentives for energy-efficient construction practices in homes rebuilt after a wildfire. The enhanced incentives will be available to customers who lost a building in a recent major wildfire like the Tubbs, Carr, and Camp Fires. These customers are eligible for incentives if they pull a permit for a new building by the end of 2019 in PG&E service territory, regardless of where they rebuild.

Customers participating in the Advanced Energy Rebuild initiative will receive incentives to adopt building practices now that will become required for all new construction in 2020. This program also provides incentives for Accessory Dwelling Units (ADUs), commonly known as granny units or casitas.

PG&E has also teamed up with Sonoma Clean Power (SCP) and the Bay Area Air Quality Management District (BAAQMD) to offer a one-stop shop for residential green building incentives for eligible customers in Sonoma and Mendocino counties. The program is an enhancement of PG&E's long-standing California Advanced Homes Program, and it allows builders to access incentives from all three organizations with a single application.

MCE has teamed up with PG&E, BAAQMD, BayREN, and the County of Napa to also offer an Advanced Energy Rebuild program for Napa County. To learn more about this program for homeowners within Napa County, please [click here](#).

2. Glossary of Terms

Throughout this document, acronyms of certain terms have been used to simplify instructions. The following is a list of these terms:

ADU: Accessory Dwelling Unit, also known as a *casita* or *granny unit*

BIG: Build It Green

CABEC: California Association of Building Energy Consultants

CAHP: California Advanced Homes Program

CalCERTS: California Certified Energy Rating & Testing Services (HERS Provider)

CEA: Certified Energy Analyst

CEC: California Energy Commission

CF-1R: Certificate of Compliance

CF-2R: Certificate of Installation, go to www.energy.ca.gov and search for *Residential Manual*

CF-3R: Certificate of Field Verification and Diagnostic Testing, go to www.energy.ca.gov and search for *Residential Manual*

CHEERS: California Home Energy Efficiency Rating Services (HERS Provider)

CIR: CAHP Incentive Report

CMFNH: California Multifamily New Homes (PG&E program)
CPUC: California Public Utilities Commission
DOE ZER: Department of Energy Zero-Energy Ready program
EDR: Energy Design Rating
HEMS: Home Energy Management Systems
HERS: Home Energy Rating System
HPA: High Performance Attics
HPF: High Performance Fenestration
HPW: High Performance Walls
IOU: Investor-owned Utility
IRF: Incentive Request Form
MECH-1-C: Mechanical Field Inspection Energy Checklist, usually for high-rise projects
MECH-INST: Mechanical Installation Certificate, usually for high-rise projects
MF: Multifamily
MFHR: Multifamily high-rise
MFLR: Multifamily low-rise
NFRCC: National Fenestration Rating Council
PERF-1: Performance Certificate of Compliance
PG&E: Pacific Gas and Electric Company
Rater: Inspector certified by a CEC-approved HERS provider to provide third-party verification for Title 24 measures
RNC: Residential New Construction
SF: Single family
SHGC: Solar Heat Gain Coefficient
Title 24: Title 24 Building Energy Efficiency Standards

3. General Requirements

Incentives are only available to owners of homes, condominiums, apartments, and accessory dwelling units across all counties that were red tagged by CAL FIRE in the 2017 and 2018 northern California wildfires. Customers must have service provided by SCP, MCE, and/or PG&E.

Participants must submit an application package prior to the start of any HERS testing or drywall installation. All participating units must be new construction dwellings and modeled accordingly.

The applicant agrees not to accept duplicate funding from multiple utility-sponsored energy-efficiency programs for the same measures. Measures that save multiple fuel types can accept funding for **each** fuel type from **one** utility.

For verification purposes, all projects must contract with a certified HERS rater, even if HERS measures are not required. The HERS rater will be required to enter project verifications into the HERS registry for the program. This includes verifications of non-HERS measures as applied in the project's specified registry. The HERS rater is responsible for field verifying all measures used for program compliance.

Incentive payments are available only to owners named on the application.

Funds are limited and will be reserved on a first-come, first-served basis to projects that meet the program requirements. No payments will be made for any changes made to the unit that may affect compliance without prior written approval from your program representative.

For any additional program details and funding availability prior to submitting applications:

- Customers in Sonoma and Mendocino counties can contact SCP at programs@sonomacleanpower.org or (855) 202-2139
- Customers in Napa County can contact MCE at energysavings@mcecleanenergy.org or (415) 464-6033
- Customers in all other affected counties in PG&E territory can contact the program implementer, TRC, at RNC@TRCcompanies.com or (866) 352-7457
- Customers who do not receive electric service from PG&E are eligible for a portion of the Advanced Energy Rebuild incentives if gas service is installed from PG&E. See Section 6.3 PG&E Gas Only Customers for more information.

The funding for this program will expire December 31, 2019 or once funding is depleted. The application is valid for 36 months from the date of utility acceptance.

4. Program Process Overview

Step 1: Come Talk with Us

We understand rebuilding your home can be complicated. We encourage customers to reach out to the contacts listed in the section above to set up a time to review the design of your new home and see how you can qualify for your incentive.

Step 2: Find a Certified Energy Analyst (CEA)

Your CEA will walk you through potential energy measures you can install in your new home to meet program eligibility and process the energy documentation for your permit. They will be your go-to resource for everything energy-related. To find a CEA, [click here](#).

Step 3: Complete Your Energy Model

Your CEA will create an energy model for your project that is required for your permit from the city or county. Be sure that all features of your incentive pathway are reflected in the energy model. See section 6.1 for more information about pathway options and requirements.

Step 4: Submit Program Application

Submit your online program application [here](#). In addition to this form, you will need to upload and submit the following items:

- Title 24 CF-1R documentation authored and signed by a 2016 Title 24 Residential CEA
- 2016 code-approved energy model file (.bld or .ribd)
- Complete set of construction plans, including architectural, mechanical, and electrical pages
- Letter, account statement, service application, or any documentation issued by your utility verifying the project address is or will be receiving gas and/or electric service from SCP, MCE or PG&E.
- A completed [IRS W-9 form](#).
- If requested, the following specifications:
 - Specification sheet for windows, glazed doors, and skylights with manufacturer's name, U-factor, and Solar Heat Gain Coefficient (SHGC)
 - Specification for heating equipment with manufacturer's name/model number and efficiency rating
 - Specification for air conditioner with manufacturer's name/model numbers for condenser/coil match or AHRI reference number for each proposed unit ([ahridirectory.org](#))
 - Specification for water heater with manufacturer's name/model number and efficiency rating
 - If installing a solar water heater, a CF-SR form is also required
- Please have your CEA share the project with "TRC Energy Services" in the HERS registry. Instructions on how to do this are listed under Step 6.

Please be aware that according to submittal requirements, projects will not be accepted after drywall has been installed or HERS testing has begun unless the eligibility date has been reserved.

Step 5: Receive 50 Percent of Total Incentive

The program implementer, TRC, will review all documentation and respond within six weeks. Once approved, you will receive an acceptance letter, an incentive request form, a HERS measure summary, and a check for 50 percent of the total incentive reserved within 12 weeks.

Participants in Napa County will not receive the full 50 percent upfront incentive at enrollment. The remaining reserved incentives that are not sent at enrollment will be paid at completion. Please direct questions regarding this to MCE at energysavings@mcecleanenergy.org or (415) 464-6033.

Step 6: Find a HERS Rater and Share Project with TRC

Every project built in California is required to have a HERS rater verify the energy features of a newly constructed home. To find a list of HERS raters, [click here](#) (CalCERTS) or [here](#) (CHEERS). Your contractor will upload CF-2R form(s) to the HERS registry, verifying that they installed the proper energy-efficient equipment in your home. Your HERS rater will then complete an on-site inspection and/or testing and upload CF-3R form(s) to confirm that your energy-efficient equipment has been properly installed. Both the CF-2R and CF-3R forms will need to be shared with and reviewed by TRC before the final incentive can be issued.

Steps for Sharing a Project:

For CalCERTS:

Please have your CEA or HERS rater share your project with *TRC Energy Services* as an energy consultant. If we do not appear on your list of energy consultants, you may need to add us.

If you or your HERS rater/CEA need registry sharing instructions, please contact us at RNC@TRCcompanies.com, and we will provide detailed instructions.

For CHEERS:

Please have your CEA or HERS rater share the project with *TRC Solutions*. If we do not appear in your list of project team members, you may need to add us.

If the project is a custom home, let us know who is listed as the *builder*.

Step 7: Incentive Request Form

After HERS rating is complete, the project team must complete, sign, and date the incentive request form that was provided in the acceptance package at enrollment. If you need another copy of the incentive request form, please email RNC@TRCcompanies.com. Note: the form cannot be signed by the energy consultant or HERS rater due to conflict of interest.

Additionally, you will need to fill out a program satisfaction survey, located [here](#). This should be filled out by the person receiving the rebate.

5. General Building Requirements

To qualify for the incentive payment, each home covered by the application must meet the following criteria:

- The home must be a new construction project/home built after an owned building was red-tagged by CAL FIRE. The project/home must receive electric distribution and/or natural gas distribution service from SCP, MCE, and/or PG&E.
- The home must be a single family detached dwelling or two-dwelling building, including accessory dwelling units of any number of stories, R-3 occupancy, and on SCP, MCE or PG&E's residential rates.
- The home must be permitted under the Title 24 2016 Residential Compliance Manual effective January 1, 2017 and achieving compliance using a CEC-approved computer method. Projects must meet, at a minimum, CEC and Advanced Energy Rebuild installation and field verification requirements, as documented by a certified HERS rater.

- Modular manufactured housing may qualify when regulated by Title 24 standards (not HUD – U.S. Department of Housing and Urban Development). Please contact us at RNC@TRCcompanies.com for more information.
- The following defines the dwelling unit types that qualify for program participation:
 - Detached: A single or multi-story structure consisting of one unit not attached to another building (except a garage or casita). This may be either a custom home or part of a larger project consisting of multiple lots.
 - Duplex: A structure consisting of two dwelling units. The duplex can be a single structure or part of a larger project consisting of multiple structures and units but must be modeled as two separate units.
 - 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 roof and with open space on at least two sides. Must be modeled as individual separate units.
 - Accessory Dwelling Units (ADUs): Structures that are defined as either ADUs or Junior ADUs (e.g., casitas, granny flats) by the jurisdiction having authority are eligible to receive one-half of the single family incentives listed (i.e.: \$3,750 for Advanced Energy Home pathway and \$6,250 for All-Electric Home pathway) as long as both dwelling units have separate mechanical and water heating systems and comply with program eligibility requirements. Projects submitting an ADU must submit two energy models, one for the main home and one for the ADU. ADUs that are not registered as an ADU or JADU with the permitting authority are not eligible for this incentive.
 - Multifamily: Projects with three or more attached units per building that meet the Title 24 multifamily residential designation (i.e., a dwelling unit of occupancy group R, as defined in the California Building Code that shares a common wall and/or floor/ceiling with at least one other dwelling unit) are eligible to receive one-half of the single family incentives listed (ie: \$3,750 for Advanced Energy Home pathway or \$6,250 for the All-Electric pathway). Both low-rise and high-rise buildings are eligible. For multifamily specific incentives, see Section 6.4.
- The following facilities do **not** qualify for participation: remodels, additions, residential care facilities, hotels, motels, dormitories, community facilities, and buildings/sites that are not red-tagged by CAL FIRE.

6. Financial Incentives

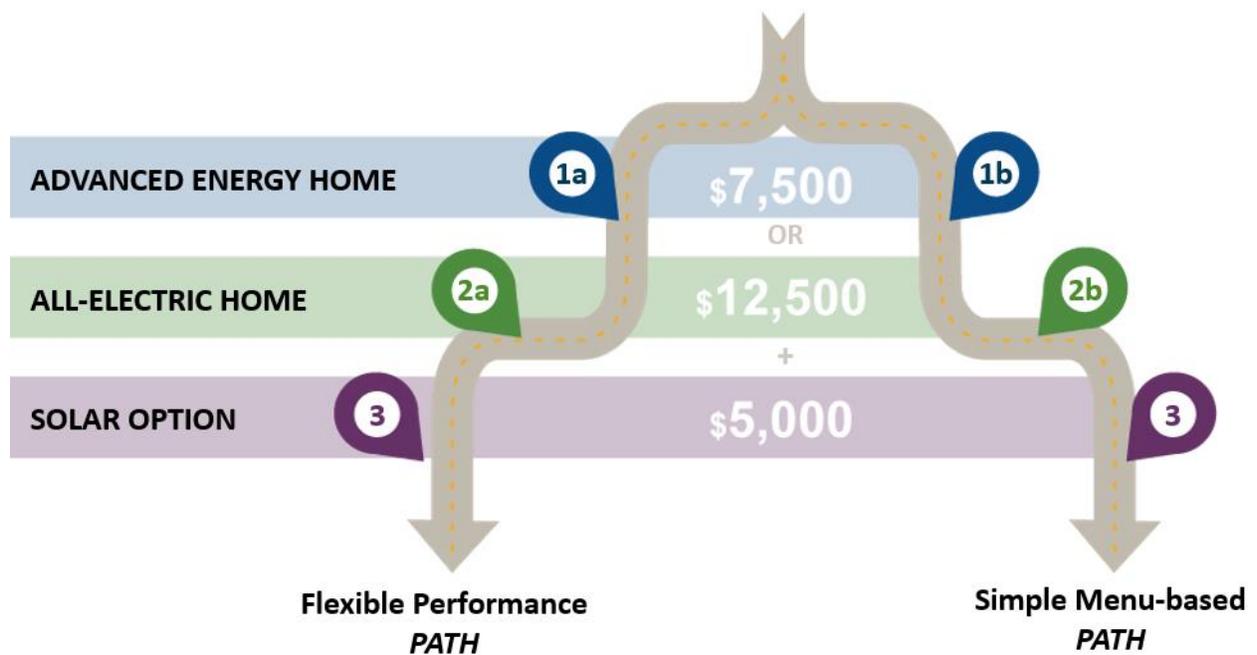
The following incentives are available for homes, ADUs, and multifamily projects.

Project Type	Advanced Energy Home	All-Electric Home	Kicker for Renewables	Kicker for Design Charrette
Single Family Home, Duplex, or Townhome	\$7,500	\$12,500	\$5,000	N/A
ADU*	\$3,750	\$6,250	\$2,500	N/A
Multifamily Project	\$3,750 per unit	\$6,250 per unit	\$5,000 per project	\$5,000 per project

* Projects that choose to build an ADU prior to the main home or an all-electric ADU with a mixed fuel main home can receive the full incentives for the ADU (\$7,500 or \$12,500 based on the pathway chosen), and subsequently receive the reduced incentives for the main home. Please reach out to the program team with any questions.

The program pathways are shown in the graphic below. For an in-depth description of requirements and exemptions, see Section 6.1 – 6.3.

Customers who do not receive electric service from PG&E are eligible for a portion of the Advanced Energy Rebuild incentives if gas service is installed from PG&E. See Section 6.3 PG&E Gas Only Customers for more information.



6.1 Advanced Energy Home Requirements

The Advanced Energy Home is eligible for a \$7,500 incentive for single family homes, duplexes, or townhomes. For ADUs or multifamily projects, an incentive of \$3,750 is available. This program option offers a flexible performance pathway and a simple menu-based pathway detailed below. Single family projects that choose to build an ADU prior to the main home can receive the full \$7,500 incentive and subsequently receive the \$3,750 incentive for the main home. Please reach out to the program team with any questions.

6.1.1 Advanced Energy Home Flexible Performance Pathway Requirements

The following measures must be completed as a part of the Advanced Energy Home flexible performance pathway.

- **20 Percent Above Title 24 Energy Code**
Demonstrate a 20 percent improvement in TDV (time dependent valuation) energy, as shown on a CF-1R report generated by an approved 2016 Title 24 compliance software. The Title 24 compliance software must be approved by the CEC at the time the permit was approved. The energy model and associated CF-1R must be completed by a 2016 Title 24 CEA.

How this is verified: At the time of application, the project will submit Title 24 CF-1R documentation authored and signed by a 2016 Title 24 CEA and the associated energy model (.bld or .ribd) for review. A HERS rater will field verify energy features associated with this documentation.

□ **220V Outlet at Stove/Range, Water Heater, Clothes Dryer, and 120V at Fireplace (if any)**

For all natural gas and/or propane equipment installed in the home, projects must install dedicated circuits and receptacles to accommodate for future electrification of the appliance. The amperage supplied must be no less than: water heating (30 amp), clothes dryer (30 amp), stove/range (50 amp), fireplace (15 Amp) and must be permanently labeled at the service panel as "For Future [Appliance Name]".

How this is verified: Construction plans will show receptacles and associated loads for stove/range, water heater, clothes dryer, and fireplaces. A HERS rater will field verify location of receptacles and labelling of the service panel.

□ **Design Roof for Additional Structural Loads Associated with Solar Panels and Add Conduit for Future Installation**

The structural design loads for roof dead load and roof live load must be clearly indicated on the construction documents or provided in supplemental documentation. This is required so that the structural loads are known if a solar energy system is installed in the future. Conduit must be routed from the proposed future solar zone to the main service panel. The main electrical service panel must have a reserved space to allow for the installation of a double pole circuit breaker for a future solar electric installation and shall be permanently labeled as "For Future Solar Electric."

How this is verified: Construction plans will show dead and live loads associated with the roofing. A HERS rater will verify labelling of the service panel.

□ **Electric Vehicle Charging Station - For SCP Customers Only (Free Equipment provided by SCP)**

All projects must have a minimum of (1) level two electric vehicle charging station installed and activated. For SCP customers, this equipment is available for free at: <https://sonomacleanpower.org/drive-evergreen/>.

How this is verified: If ordered through SCP, charging stations can be verified through an electronic signal once installed and activated. For items not ordered through SCP, a HERS rater will field verify the installation of the charging station.

□ **Electric Vehicle Charging Ready – For PG&E and MCE Customers Only**

PG&E and MCE require the home to be capable of charging an electric vehicle (EV), also referred to as EV Ready, but are not required to install an EV charging station.

Instead of installing the EV charging station, the garage should have a dedicated electrical circuit with sufficient capacity for a charging station. Installation of the conduit

and wire needed to run electricity to an EV charging station is required. Additionally, electrical panels should be labeled EV Ready and positioned near parking spots.

How this is verified: A HERS rater will field verify that the electrical panel has a labeled, dedicated circuit for future EV charging station use.

6.1.2 Advanced Energy Home Simple Menu-Based Pathway Requirements

The following measures must be completed as a part of the Advanced Energy Home simple menu-based pathway.

- **2016 Title 24 Code High Performance Walls or 2016 Title 24 Code High Performance Attics**

Complete either one of the following:

- High Performance Attics: The home is constructed with a high performance attic Option A, B, or C as defined by the prescriptive requirements in the 2016 Building Efficiency Standards (Title 24, Part 6) TABLE 150.1-A **or** a totally sealed, unventilated attic that meets the same overall U-value requirements of the prescriptive high performance attic requirements.

Note: Because Climate Zone 2 does not have a requirement for high performance attics in Title 24, please reference the U-value and insulation requirements of Climate Zone 4.
Requirements for Roof/Ceiling Insulation Per Residential Compliance Manual (§150.1(c).1)

STRATEGY		HOW TO COMPLY
High-Performance Ventilated Attics		
Option A	Vented attic with continuous insulation applied above the roof deck. Ceiling insulation required separately above finished attic ceiling.	Table 150.1-A of the Energy Standards Roof Assembly Option A
Option B	Vented attic with batt, spray in cellulose/fiberglass secured with netting, or SPF. Ceiling insulation required separately above finished attic ceiling.	Table 150.1-A of the Energy Standards Roof Assembly Option B
Ducts in Conditioned Space		
Option C	Vented attic with no insulation at roof deck. Ceiling insulation required separately above finished attic ceiling. Ducts and air handler equipment in conditioned space that is NOT a sealed attic.	Table 150.1-A of the Energy Standards Roof Assembly Option C Form: CF2R-MCH-20b

- **High Performance Walls:** The home is constructed with high performance walls in compliance with the prescriptive requirements as defined in the 2016 Building Efficiency Standards (Title 24, Part 6) TABLE 150.1-A. Per this requirement, walls shall have a maximum U-factor of 0.051. U-factors can be calculated by building the construction assembly in CEC-approved compliance software, including the inside finish, sheathing, cavity insulation, and exterior finish. Some examples of various wood-framed wall assemblies, associated construction, and U-values are provided below.

Examples of Wood-Framed Wall Assemblies and U-Factors, Assuming Gypsum Board Interior

Stud	Cavity Insulation	Cavity Insulation Type	Exterior Insulation	U-Factor
2x6	R 21	Loose-fill cellulose or high density batt	R 4	0.051
2x6	R 19	Low density batt	R 5	0.051
2x4	R 15	High density batt	R 8	0.050
2x6	R 31	Closed-cell spray foam (ccSPF)	R 2	0.050
2x6	R 23	High density batt or mineral wool	R 4	0.049

How this is verified: The project will model high performance walls and/or attics in the energy model submitted at project application. A HERS rater will field verify construction assembly.

- ☐ **2019 Title 24 Code Windows (max U-factor 0.30, SHGC 0.23)**
All windows must have a maximum U-factor of 0.30 and a maximum SHGC of 0.23. (excludes doors, sliding glass doors, and skylights).

How this is verified: At the time of application, the project will submit a specification sheet for windows with the manufacturer’s name, U-factor, and Solar Heat Gain Coefficient (SHGC). A HERS rater will field verify.

- ☐ **High Efficiency Water Heater: Heat Pump Water Heater w/ EF of 3.0+ or Gas Tankless w/ EF of 0.92 and 220v Outlet**
The project must install either a heat pump water heater with an energy factor (EF) of 3.0 or greater **OR** a gas tankless water heater with an EF of 0.92 or greater. For gas tankless water heaters, a 30 amp 220V receptacle must be provided for future installation of a heat pump water heater. The electrical service panel must be permanently labeled as “For Future Water Heater.”

How this is verified: At the time of application, the project will submit a specification sheet for the water heater with the manufacturer's name/model number and efficiency rating. If installing a solar water heater, a CF-SR form is also required. A HERS rater will field verify the water heater nameplate and efficiency.

□ **Heating/Cooling Ducts That Are Well-Sealed, Insulated (R-8), and Located Primarily in Conditioned Space (Note: Buried Deeply in Attic Insulation Can Qualify)**

Where ducts are installed for heating and/or cooling purposes, they must be verified by a HERS rater to have a leakage rate of 5 percent or less than nominal system air handler airflow per the procedures described in Residential Appendix RA3.1. All ducts must be insulated to R-8. Ducts must either a) be verified by a HERS rater to have 12 linear feet or less of ducts located outside conditioned space per Residential Appendix RA3.1.4.1.2 or b) meet the definition of buried ducts per Residential Appendix RA3.1.4.1.5. Systems without ducts are exempted from this requirement.

How this is verified: The project will note duct leakage, location, and insulation levels on the CF1-R documentation provided at the time of application. A HERS rater will field test and verify the duct location/design, airtightness, and insulation levels and upload a completed CF-3R to the HERS registry.

□ **WaterSense Efficient Plumbing Fixtures (SCP Territory Only)**

All installed toilets, urinals, showerheads, faucets, and automatic irrigation controls must be certified to the performance criteria of the [US EPA WaterSense Specification](#). Flow rates for these items must be per CALGreen (2016 Title 24 Code, Part 11).

How this is verified: As this measure is included in CALGreen code (2016 Title 24 Code, Part 11), an inspector from your jurisdiction or a CALGreen Special Inspector will provide field verification of this measure.

□ **Water Efficient Landscaping (SCP Territory Only)**

The project must meet the requirements for your local landscape ordinance or the current California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent or use one of the free landscape design templates provided by Sonoma-Marín Saving Water Partnership.

How this is verified: As this measure is included in CALGreen code (2016 Title 24 Code, Part 11), an inspector from your jurisdiction or a CALGreen Special Inspector will provide field verification of this measure.

□ **ENERGY STAR Appliances**

The project must install ENERGY STAR-certified appliances for all refrigerators, dishwashers, clothes washers, and bathroom exhaust fans.

How this is verified: A HERS rater will field verify that all appliances are ENERGY STAR rated.

- **220V Outlet at Stove/Range, Water Heater, Clothes Dryer, and 120V at Fireplace (if any)**

For all natural gas and/or propane equipment installed in the home, that the project must install dedicated circuits and receptacles to accommodate for future electrification of the appliance. The amperage supplied must be no less than: water heating (30 amp), clothes dryer (30 amp), stove/range (50 amp) and must be permanently labeled at the service panel as “For Future [Appliance Name].”

How this is verified: Construction plans will show receptacles and associated loads for stove/range, water heater, clothes dryer, and fireplace (if any). A HERS rater will field verify location of receptacles and labelling of service panel.

- **Electric Vehicle Charging Station - For SCP Customers Only (Free Equipment Provided by SCP)**

All projects must have a minimum of (1) level two electric vehicle charging station installed and activated. For SCP customers, this equipment is available for free at: <https://sonomacleanpower.org/drive-evergreen/>.

- **Electric Vehicle Charging Ready – For PG&E and MCE Customers Only**

PG&E and MCE require the home to be capable of charging an electric vehicle (EV), also referred to as EV ready, but are not required to install an EV charging station.

Instead of installing the EV charging station, the garage should have a dedicated electrical circuit with sufficient capacity for a charging station. Installation of the conduit and wire needed to run electricity to an EV charging station is required. Additionally, electrical panels should be labeled EV Ready and positioned near parking spots.

How this is verified – a HERS rater will field verify that the electrical panel has a labeled, dedicated circuit for future EV charging station use.

6.2 All-Electric Home Requirements

The All-Electric Home is eligible for a \$12,500 incentive for single family homes, duplexes, or townhomes. For ADUs or multifamily projects, an incentive of \$6,250 is available. This program option offers a flexible performance pathway and a simple menu-based pathway detailed below. Single family projects that choose to build an ADU prior to the main home can receive the full \$12,500 incentive and subsequently receive the \$6,250 incentive for the main home. Projects that build an all-electric ADU with a mixed fuel main home are eligible to receive the full incentive for the ADU and the reduced incentive for the main home. Please reach out to the program team with any questions.

6.2.1 All-Electric Home Flexible Performance Pathway Requirements

The following measures must be completed as a part of the All-Electric Home flexible performance pathway.

- **20 Percent Above Title 24 Energy Code with All-Electric Appliances**

The project must demonstrate a 20 percent improvement in time dependent valuation (TDV) energy, as shown on a CF-1R report generated by an approved Title 24

compliance software using only electric equipment. The Title 24 compliance software must be approved by the CEC at the time the permit was approved. The energy model and associated CF-1R must be completed by a CEA.

How this is verified: At the time of application, the project will submit Title 24 CF-1R documentation authored and signed by a 2016 Title 24 CEA and the associated energy model (.bld or .ribd) for review. A HERS rater will field verify energy features associated with this documentation.

□ **Design Roof for Additional Structural Loads Associated with Solar Panels and Add Conduit for Future Installation**

The structural design loads for roof dead load and roof live load must be clearly indicated on the construction documents or provided in supplemental documentation. This is required so that the structural loads are known if a solar energy system is installed in the future. Conduit must be routed from the proposed future solar zone to the main service panel. The main electrical service panel must have a reserved space to allow for the installation of a double pole circuit breaker for a future solar electric installation and must be permanently labeled as “For Future Solar Electric.”

How this is verified: Construction plans will show dead and live loads associated with the roofing. A HERS rater will verify labelling of service panel.

□ **Electric Vehicle Charging Station – For SCP Customers Only (Free Equipment Provided by SCP)**

All projects must have a minimum of (1) level two electric vehicle charging station installed and activated. For SCP customers, this equipment is available for free at: <https://sonomacleanpower.org/drive-evergreen/>.

How this is verified: If ordered through SCP, the charging station can be verified through an electronic signal once installed and activated. For items not ordered through SCP, a HERS rater will field verify the installation of the charging station.

□ **Electric Vehicle Charging Ready – For PG&E and MCE Customers Only**

PG&E and MCE require the home to be capable of charging an electric vehicle (EV), also referred to as EV Ready, but are not required to install an EV charging station.

Instead of installing the EV charging station, the garage should have a dedicated electrical circuit with sufficient capacity for a charging station. Installation of the conduit and wire needed to run electricity to an EV charging station is required. Additionally, electrical panels should be labeled EV Ready and positioned near parking spots.

How this is verified – a HERS rater will field verify that the electrical panel has a labeled, dedicated circuit for future EV charging station use.

6.2.2 All-Electric Home Simple Menu-Based Pathway Requirements

The following measures must be completed as a part of the All-Electric Home simple menu-based pathway.

□ **2016 Title 24 Code High Performance Walls**

The home is constructed with high performance walls in compliance with the prescriptive requirements as defined in the 2016 Residential Compliance Manual (Title 24, Part 6) TABLE 150.1-A. Per this requirement, walls must have a maximum U-factor of 0.051. U-factors can be calculated by building the construction assembly in CEC-approved compliance software, including the inside finish, sheathing, cavity insulation, and exterior finish. Some examples of various wood-framed wall assemblies, associated construction, and U-values are provided below.

Examples of Wood-Framed Wall Assemblies and U-Factors, Assuming Gypsum Board Interior

Stud	Cavity Insulation	Cavity Insulation Type	Exterior Insulation	U-Factor
2x6	R 21	Loose-fill cellulose or high density batt	R 4	0.051
2x6	R 19	Low density batt	R 5	0.051
2x4	R 15	High density batt	R 8	0.050
2x6	R 31	Closed-cell spray foam (ccSPF)	R 2	0.050
2x6	R 23	High density batt or mineral wool	R 4	0.049

How this is verified: The project will submit an energy model with high performance walls and/or attic at project application. A HERS rater will field verify construction assembly.

□ **2016 Title 24 Code High Performance Attics**

The home is constructed with a high performance attic Option A, B, or C as defined by the prescriptive requirements in the 2016 Residential Compliance Manual (Title 24, Part 6) TABLE 150.1-A or a totally sealed, unventilated attic that meets the same overall U-value requirements of the prescriptive high performance attic requirements.

Note: Because Climate Zone 2 does not have a requirement for high performance attics in Title 24, please reference the U-value and insulation requirements of Climate Zone 4.

Requirements for Roof/Ceiling Insulation Per Residential Compliance Manual (§150.1(c).1)

STRATEGY

HOW TO COMPLY

High-Performance Ventilated Attics

Option A	Vented attic with continuous insulation applied above the roof deck. Ceiling insulation required separately above finished attic ceiling.	Table 150.1-A of the Energy Standards Roof Assembly Option A
Option B	Vented attic with batt, spray in cellulose/fiberglass secured with netting, or SPF. Ceiling insulation required separately above finished attic ceiling.	Table 150.1-A of the Energy Standards Roof Assembly Option B

Ducts in Conditioned Space

Option C	Vented attic with no insulation at roof deck. Ceiling insulation required separately above finished attic ceiling. Ducts and air handler equipment in conditioned space that is NOT a sealed attic.	Table 150.1-A of the Energy Standards Roof Assembly Option C Form: CF2R-MCH-20b
----------	--	--

How this is verified: The project will submit an energy model with high performance walls and/or attic at project application. A HERS rater will field verify construction assembly.

Quality Insulation Installation (QII) Inspected by a HERS Rater

A HERS rater must inspect insulation and air leakage control methods according to the methods detailed in the Residential Appendix RA3.5.

How this is verified: A HERS rater will submit documentation of compliance with the QII test to the appropriate HERS registry. Program staff will verify this documentation when the project requests the final incentive check.

Building Enclosure Airtightness Verified by a HERS Rater to Be Less Than 3 ACH50

A HERS rater verifies building enclosure air tightness to be less than 3 ACH50 per methods detailed in the Residential Appendix RA3.8.

How this is verified: A HERS rater will submit documentation of compliance with blower door test to the appropriate HERS registry. Program staff will verify this documentation when the project requests the final incentive check.

Cool Roof

For a low-sloped roof (i.e., a surface with a pitch less than or equal to 2:12), the project must install a product labeled by the Cool Roof Rating Council (CRRC) to have a minimum aged solar reflectance of 0.20 and a minimum thermal emittance of 0.75, or a minimum SRI of 16. For a steep-sloped roof (i.e., a surface with a pitch greater than 2:12), the project must install a product labeled by the CRRC to have a minimum aged

solar reflectance of 0.63 and a minimum thermal emittance of 0.75 or a minimum SRI of 75.

How this is verified: The project will submit a specification sheet that shows emissivity and reflectivity value of the roofing product. Lawrence Berkeley National Laboratory produced a calculator that determines the SRI by designating the solar reflectance and thermal emittance of the desired roofing material. The calculator can be found at: http://www.energy.ca.gov/title24/2016standards/documents/solar_reflectance/

□ **2019 Title 24 Code Windows (max U-factor 0.30, SHGC 0.23)**

All windows must have a maximum U-factor of 0.30 and a maximum SHGC of 0.23

How this is verified: At the time of application, the project will submit a specification sheet for windows with the manufacturer's name, U-factor, and Solar Heat Gain Coefficient (SHGC). A HERS rater will field verify.

□ **High Efficiency Water Heater: NEEA Tier 3 Heat Pump Water Heater W/ Grid Integration Controls Installed**

The project must install a heat pump water heater that meets NEEA's Tier 3 Advanced Water Heater Specification **and** has an installed communication port that operates in compliance with CTA 2045 (or equivalent open modular interface standard) with specific demand response signals. An up-to-date list of water heaters that comply with the NEEA Tier 3 Advanced Water Heater Specification can be found here: <http://neea.org/advancedwaterheaterspec>.

How this is verified: At the time of application, the project will submit a specification sheet for the water heater with the manufacturer's name/model number and efficiency rating. If installing a solar water heater, a CF-SR form is also required. A HERS rater will field verify the water heater nameplate and efficiency.

□ **High Efficiency Heat Pump for Heating/Cooling (EER of 12.5+, HSPF of 9.5+)**

The project must install a heat pump (ducted or ductless) for space heating and space cooling with a minimum EER of 12.5 and/or HSPF of 9.5.

How this is verified: At the time of application, the project will submit a specification sheet for the heating equipment with the manufacturer's name/model number and efficiency rating and a specification sheet for the air conditioner with the manufacturer's name/model numbers for condenser/coil match or AHRI reference number for each proposed unit (ahridirectory.org). A HERS rater will field verify the HVAC nameplate, efficiency, and ducting airtightness.

□ **Heating/Cooling Ducts That Are Well-Sealed, Insulated (R-8), and Located Primarily in Conditioned Space (Note: Buried Deeply in Attic Insulation Can Qualify)**

Where ducts are installed for heating and/or cooling purposes, they must be verified by a HERS rater to have a leakage rate of 5 percent or less than nominal system air handler airflow per the procedures described in Residential Appendix RA3.1. All ducts must be

insulated to R-8. Ducts must either a) be verified by a HERS rater to have 12 linear feet or less of ducts located outside conditioned space per Residential Appendix RA3.1.4.1.2 **or** b) meet the definition of buried ducts per Residential Appendix RA3.1.4.1.5. Systems without ducts are exempted from this requirement.

How this is verified: The project will note duct leakage, location, and insulation levels on the CF-1R documentation provided at the time of application. A HERS rater will field test and verify the duct location/design, airtightness, and insulation levels and upload a completed CF-2R to the HERS registry.

Smart Thermostat

The project must install a smart thermostat that provides the following: intelligent recovery, staging, ramping, or another control mechanism that prevents the unnecessary operation of supplementary electric resistance heating when the heat pump alone can meet the heating load. Ductless mini-split systems are exempt from this requirement.

How this is verified: A HERS rater will field verify the smart thermostat.

WaterSense Efficient Plumbing Fixtures (SCP Territory Only)

All installed toilets, urinals, showerheads, faucets, automatic irrigation controls must be certified to the performance criteria of the [US EPA WaterSense Specification](#). Flow rates for these items must be per CALGreen (2016 Title 24 Code, Part 11).

How this is verified: As this measure is included in CALGreen code (2016 Title 24 Code, Part 11), an inspector from your jurisdiction or a CALGreen Special Inspector will provide field verification of this measure.

Water Efficient Landscaping (SCP Territory Only)

The project must meet the requirements for your local landscape ordinance or the current California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent **or** use one of the free landscape design templates provided by Sonoma-Marin Saving Water Partnership.

How this is verified: As this measure is included in CALGreen code (2016 Title 24 Code, Part 11), an inspector from your jurisdiction or a CALGreen Special Inspector will provide field verification of this measure.

Induction Cooking

The project must install induction technologies for all ovens and ranges. To test out an induction cooktop for free from SCP, please visit <https://sonomacleanpower.org/inductioncooking/> or email programs@sonomacleanpower.org.

How this is verified: A HERS rater will field verify the induction cooktop.

ENERGY STAR Appliances

The project must install ENERGY STAR-certified appliances for all refrigerators, dishwashers, clothes washers, and bathroom exhaust fans. A list of current ENERGY STAR appliances can be found here: <https://www.energystar.gov/products/appliances>.

How this is verified: A HERS rater will field verify that all appliances are ENERGY STAR rated.

□ **Heat Pump or Electric Clothes Dryer**

The project must install a heat pump or electric clothes dryer.

How this is verified: A HERS rater will field verify the heat pump or electric clothes dryer.

□ **Electric Vehicle Charging Station – For SCP Customers Only (Free Equipment Provided by SCP)**

All projects must have a minimum of (1) level two electric vehicle charging station installed and activated. For SCP customers, this equipment is available for free at: <https://sonomacleanpower.org/drive-evergreen/>.

How this is verified: If ordered through SCP, charging station can be verified through an electronic signal once installed and activated. For items not ordered through SCP, a HERS rater will field verify the installation of the charging station.

□ **Electric Vehicle Charging Ready – For PG&E and MCE Customers Only**

PG&E and MCE require the home to be capable of charging an electric vehicle (EV), also referred to as EV Ready, but are not required to install an EV charging station.

Instead of installing the EV charging station, the garage should have a dedicated electrical circuit with sufficient capacity for a charging station. Installation of the conduit and wire needed to run electricity to an EV charging station is required. Additionally, electrical panels should be labeled EV Ready and positioned near parking spots.

How this is verified: A HERS rater will field verify that the electrical panel has a labeled, dedicated circuit for future EV charging station use.

6.3 PG&E Gas Only Customers

Customers who do not receive electric service from PG&E are eligible for a portion of Advanced Energy Rebuild incentives if gas service is installed from PG&E. A project that is all-electric or receives propane is not eligible for the program. Customers have two options available to qualify for the program:

6.3.1 Above Code Home

The following requirement must be met to qualify for the Above Code Home option:

□ **Home Designed Above Title 24 Energy Code**

The program uses an energy design rating (EDR) point system to determine rebate amount. A project must reach a minimum rating (Delta EDR) of 2. Incentives increase with home efficiency.

Incentives start at \$990 and increase as the Delta EDR increases. Customers are not eligible for the solar and battery storage bonus when only receiving gas service from PG&E.

6.3.2 Advanced Energy Home

The following requirements must be met to qualify for the Advanced Energy Home option:

- Home Designed to be 20% Above Title 24 Energy Code**
- 220V Outlet at The Stove, Water Heater, and Clothes Dryer**
- Roof Designed for Additional Structural Loads Such as Solar Panels Including a Conduit for Future Installation**
- Electric Vehicle Charging Station Ready**

Incentives for an Advanced Energy Home are \$3,375. Customers are not eligible for the solar and battery storage bonus when receiving only receiving gas service from PG&E.

6.4 Bonus for Renewable Energy

In addition to the base incentives, there is a \$5,000 bonus incentive for projects that install renewable energy. This can be accomplished through one of two pathways.

6.4.1 Onsite Renewable Energy

Install a solar PV system with a DC rating per the calculation below:

$$kW_{PV} = (CFA \times 0.621)/1000 + 1.22$$

Where:

kW_{PV} = kW size of the PV system (DC)

CFA = Conditioned floor area

The PV system must be paired with a minimum 7.5 kWh battery system.

How this is verified: The project will show the solar PV system and battery location on the construction plans and Title 24 documentation. Projects pursuing this bonus will provide the CSI or MASH calculator (or equivalent) showing PV system layout and size.

6.4.2 Offsite Renewable Energy (available only for SCP customers)

Pre-purchase a 20-year commitment to a 100 percent renewable, local energy product from your power provider (EverGreen from SCP). The cost of the pre-purchase will be determined by the annual electricity usage in kWh from the CF-1R documentation multiplied by the cost premium of the power provider's 100 percent local, renewable product over the power provider's standard product. The pre-payment will be paid into an account for building additional local renewable sources. Once built, the occupant of the home will pay the default product rate for energy while receiving the 100 percent local, renewable product for 20 years. The benefit will remain with the property if it is sold, just like a solar array.

Example:

$$\text{Pre-Cost Obligations (\$)} = 20 \text{ years} \times \text{Title 24 Annual kWh} \times \text{EverGreen Cost Premium}^1 \times 0.83^2$$

1. For reference, the 20-yr forward estimate of SCP's EverGreen premium is 2.9 cents per kWh in 2018 dollars.

2. The factor of 0.83 is to discount the stream of costs by 2% annually.

In an example where the annual kWh from the Title 24 report was 1,050 kWh and the homeowner chose SCP's EverGreen, the total pre-payment obligation for a home would be:

$$20 \text{ yrs} \times (12 \text{ mos} \times 1,050 \text{ kWh}) \times 0.029 \times 0.83 = \$6,065$$

How this is verified: The contractor and/or homeowner will sign an agreement with the power provider of choice.

6.5 Multifamily Buildings

Projects with three or more attached units per building that meet the Title 24 multifamily residential designation (i.e. a dwelling unit of occupancy group R, as defined in the California Building Code that shares a common wall and/or floor/ceiling with at least one other dwelling unit) are eligible to receive one-half of the single family incentives listed (ie: \$3,750 for the Advanced Energy Home package or \$6,250 for the All-Electric Home Package, per unit). Both low-rise and high-rise buildings are eligible.

Requirements for the program are detailed in the graphic below. For an in-depth description of requirements and exemptions, see Section 6.4.1 – 6.4.3.

6.5.1 Multifamily Design Charrette

By hosting an early design charrette to review energy efficiency goals, a project is eligible to receive either a \$1,500 or \$5,000 incentive (paid to the developer). The \$1,500 incentive is available for any enrolled project that participates in a program-hosted design charrette. An extra \$3,500 incentive (bringing the total incentive amount to \$5,000) is available for a project that makes any of the program-approved efficiency changes suggested during the design charrette. To receive the design charrette incentive, the charrette must include, but is not limited to: the developer, architect, mechanical engineer, energy consultant, general contractor, HERS rater, and a TRC representative. Charrettes may occur in-person or over a conference call and should include representatives from other programs that the project may be participating in, such as Build It Green's GreenPoint Rated or New Solar Homes Partnership. The meeting is intended to discuss and formalize the energy efficiency strategies of the building including the common areas. The design charrette will draw upon the knowledge and expertise of all participants.

To facilitate a successful design charrette, the project must be at a design or construction phase where efficiency measure changes can still occur. If, for example, the project has started construction and purchased all the mechanical equipment already, the project is not eligible for the design charrette incentive. At that point in construction, it is not possible to implement suggestions from the charrette. To avoid ineligibility for this incentive, please involve TRC staff as early as possible in the project design. The following criteria will qualify a project to receive this incentive:

- The design team must be able to discuss and formalize the energy efficiency strategies of the building.
- The design team must include the developer, architect, mechanical engineer, general contractor, energy consultant, and TRC representative.
- The design team must complete the brief required documentation provided by TRC.

6.5.2 Multifamily Advanced Energy Home Requirements

The Advanced Energy Home is eligible for a \$3,750 per unit incentive for multifamily projects. This program option offers a flexible performance pathway and a simple menu-based pathway detailed below.

6.5.2.1 Multifamily Advanced Energy Home Flexible Performance Pathway Requirements

The following measures must be completed as a part of the Advanced Energy Home performance pathway.

20 Percent Above Title 24 Energy Code

The project must demonstrate a 20 percent improvement in time dependent valuation (TDV) energy, as shown on a CF-1R or PERF-1C report generated by an approved 2016 Title 24 compliance software. The Title 24 compliance software must be approved by the CEC at the time the permit was approved. The energy model and associated CF-1R must be completed by a 2016 Title 24 CEA.

How this is verified: At the time of application, the project will submit Title 24 CF-1R documentation authored and signed by a 2016 Title 24 code CEA and the associated energy model (.bld or .ribd) for review. A HERS rater will field verify energy features associated with this documentation.

220V Outlet at All Stove/Ranges, Water Heaters, Clothes Dryers, and 120V at Fireplaces (if any)

For all natural gas and/or propane equipment installed in the units or common areas, the project must install dedicated circuits and receptacles to accommodate for future electrification of the appliance. The amperage supplied must be no less than: water heating (30 amp), clothes dryer (30 amp), stove/range (50 amp), fireplace (15 Amp) and must be permanently labeled at the service panel as "For Future [Appliance Name]".

How this is verified: The construction plans will show receptacles and associated loads for stove/range, water heater, and clothes dryer. A HERS rater will field verify location of receptacles and labelling of service panel.

Design Roof for Additional Structural Loads Associated with Solar Panels and Add Conduit for Future Installation

The structural design loads for roof dead load and roof live load must be clearly indicated on the construction documents or provided in supplemental documentation. This is required so that the structural loads are known if a solar energy system is installed in the future. Conduit must be routed from the proposed future solar zone to the main service panel. The main electrical service panel must have a reserved space to allow for the installation of a double pole circuit breaker for a future solar electric installation and must be permanently labeled as "For Future Solar Electric."

How this is verified: The construction plans will show dead and live loads associated with the roofing. A HERS rater will field verify labelling of service panel.

- **Electric Vehicle Charging Stations Provided for 3 Percent of Parking Spaces**
Three percent of the total amount of parking spaces provided, but in no case less than one space, will have level two electric vehicle charging station installed and activated.
Resources for discounted and/or free charging stations are available from [SCP](#) and [PG&E](#).

6.5.2.2 Advanced Energy Home Simple Menu-Based Pathway Requirements

The following measures must be completed as a part of the Advanced Energy Home simple menu-based pathway.

- **2016 Title 24 Code High Performance Walls or 2016 Title 24 Code High Performance Attics**

Complete either one of the following:

- High Performance Attics: The home is constructed with a high performance attic Option A, B, or C as defined by the prescriptive requirements in the 2016 Building Efficiency Standards (Title 24, Part 6) TABLE 150.1-A **or** a totally sealed, unventilated attic that meets the same overall U-value requirements of the prescriptive high performance attic requirements.

Note: Because Climate Zone 2 does not have a requirement for High Performance Attics in Title 24, please reference the U-value and insulation requirements of Climate Zone 4.

Requirements for Roof/Ceiling Insulation Per Residential Compliance Manual (§150.1(c).1)

STRATEGY	HOW TO COMPLY
High-Performance Ventilated Attics	
Option A Vented attic with continuous insulation applied above the roof deck. Ceiling insulation required separately above finished attic ceiling.	Table 150.1-A of the Energy Standards Roof Assembly Option A
Option B Vented attic with batt, spray in cellulose/fiberglass secured with netting, or SPF. Ceiling insulation required separately above finished attic ceiling.	Table 150.1-A of the Energy Standards Roof Assembly Option B
Ducts in Conditioned Space	
Option C Vented attic with no insulation at roof deck. Ceiling insulation required separately above finished attic ceiling. Ducts and air handler equipment in conditioned space that is NOT a sealed attic.	Table 150.1-A of the Energy Standards Roof Assembly Option C Form: CF2R-MCH-20b

- High Performance Walls: The home is constructed with high performance walls in compliance with the prescriptive requirements as defined in the 2016 Building Efficiency Standards (Title 24, Part 6) TABLE 150.1-A. Per this requirement, walls must have a maximum U-factor of 0.051. U-factors can be calculated by building the construction assembly in CEC-approved compliance software, including the inside finish, sheathing, cavity insulation, and exterior finish. Some examples of various wood-framed wall assemblies, associated construction, and U-values are provided below.

Examples of Wood-Framed Wall Assemblies and U-Factors, Assuming Gypsum Board Interior

Stud	Cavity Insulation	Cavity Insulation Type	Exterior Insulation	U-Factor
2x6	R 21	Loose-fill cellulose or high density batt	R 4	0.051
2x6	R 19	Low density batt	R 5	0.051
2x4	R 15	High density batt	R 8	0.050
2x6	R 31	Closed-cell spray foam (ccSPF)	R 2	0.050
2x6	R 23	High density batt or mineral wool	R 4	0.049

How this is verified: The project will submit an energy model with high performance walls and/or attic at project application. A HERS rater will field verify construction assembly.

☐ **2019 Title 24 Code Windows (max U-factor 0.30, SHGC 0.23)**

All windows must have a maximum U-factor of 0.30 and a maximum SHGC of 0.23. (excludes doors, sliding glass doors, and skylights).

How this is verified: At the time of application, the project will submit a specification sheet for windows, glazed doors, and skylights with the manufacturer’s name, U-factor, and Solar Heat Gain Coefficient (SHGC). This is verified by a HERS rater in the field.

☐ **High Efficiency Water Heater: In-Unit Water Heaters Must Be Heat Pump Water Heaters w/ EF of 3.0+ or gas tankless w/ EF of 0.92 and 220v outlet. Central Water Heaters Must Be Heat Pump Water Heaters w/ EF of 3.0+ or gas boiler w/ AFUE of 0.95 and 220v outlet.**

For in-unit water heating systems, the project must install either a heat pump water heater with an energy factor (EF) of 3.0 or greater **OR** a gas tankless water heater with an EF of 0.92 or greater. For gas tankless water heaters, a 30 amp 220V receptacle must be provided for future installation of a heat pump water heater. The electrical service panel must be permanently labeled as “For Future Water Heater.”

For central water heating systems, the project must install either a heat pump water heater with an EF of 3.0 or greater **OR** a gas boiler/water heater with an AFUE or EF of 0.95 or greater. For gas boilers/water heaters, a 30 amp 220V receptacle must be provided for future installation of a heat pump water heater. The electrical service panel must be permanently labeled as “For Future Water Heater.”

How this is verified: At the time of application, the project will submit a specification sheet for the water heater with the manufacturer’s name/model number and efficiency rating. If installing a solar water heater, a CF-SR form is also required. A HERS rater will field verify the water heater nameplate and efficiency.

Heating/Cooling Ducts That Are Well-Sealed, Insulated (R-8), and Located Primarily in Conditioned Space (Note: Buried Deeply in Attic Insulation Can Qualify)

Where ducts are installed for heating and/or cooling purposes, they must be verified by a HERS rater to have a leakage rate of 5 percent or less than nominal system air handler airflow per the procedures described in Residential Appendix RA3.1. All ducts must be insulated to R-8. Ducts must either a) be verified by a HERS rater to have 12 linear feet or less of ducts located outside conditioned space per Residential Appendix RA3.1.4.1.2 **or** b) meet the definition of buried ducts per Residential Appendix RA3.1.4.1.5. Systems without ducts are exempted from this requirement.

How this is verified: The project will note duct leakage, location, and insulation levels on the CF1-R documentation provided at the time of application. A HERS rater will field test and verify the duct location/design, airtightness, and insulation levels and upload a completed CF-3R to the HERS registry.

WaterSense Efficient Plumbing Fixtures (SCP Territory Only)

All installed toilets, urinals, showerheads, faucets, and automatic irrigation controls must be certified to the performance criteria of the [US EPA WaterSense Specification](#). Flow rates for these items must be per CALGreen (2016 Title 24 Code, Part 11).

How this is verified: As this measure is included in CALGreen code (2016 Title 24 Code, Part 11), an inspector from your jurisdiction or a CALGreen Special Inspector will provide field verification of this measure.

Water Efficient Landscaping (SCP Territory Only)

The project must meet the requirements for your local landscape ordinance or the current California Department of Water Resources’ Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent **or** use one of the free landscape design templates provided by Sonoma-Marin Saving Water Partnership.

How this is verified: As this measure is included in CALGreen code (2016 Title 24 Code, Part 11), an inspector from your jurisdiction or a CALGreen Special Inspector will provide field verification of this measure.

ENERGY STAR Tier 2 Appliances

The project must install ENERGY STAR Tier 2-certified appliances for all refrigerators, dishwashers, clothes washers, and bathroom exhaust fans in either apartment units or common areas.

How this is verified: A HERS rater will field verify that all appliances are ENERGY STAR rated.

□ **220V Outlet at Stove/Range, Water Heater, Clothes Dryer and 120V at Fireplace (if any)**

For all natural gas and/or propane equipment installed in the apartment units or common areas, the project must install dedicated circuits and receptacles for future electrification of the appliance. The amperage supplied must be no less than: water heating (30 amp), clothes dryer (30 amp), stove/range (50 amp), fireplace (15 Amp) and must be permanently labeled at the service panel as “For Future [Appliance Name]”.

How this is verified: Construction plans will show receptacles and associated loads for stove/range, water heater, and clothes dryer. A HERS rater will field verify location of receptacles and labelling of service panel.

□ **Electric Vehicle Charging Stations Provided for 3 Percent of Parking Spaces**

Three percent of the total amount of parking spaces provided, but in no case less than one space, must have level two electric vehicle charging station installed and activated. Resources for discounted and/or free charging stations are available from [SCP](#) and [PG&E](#).

How this is verified: If ordered through SCP or PG&E, charging station can be verified through an electronic signal once installed and activated. For items not ordered through SCP or PG&E, a HERS rater will field verify the installation of the charging station.

6.5.3 All-Electric Home Requirements

The All-Electric Home is eligible for a \$6,250 incentive for multifamily homes. This program option offers a flexible performance pathway and a simple menu-based pathway detailed below.

6.5.3.1 All-Electric Home Performance Pathway Requirements

The following measures must be completed as a part of the All-Electric Home performance pathway.

□ **20 Percent Above Title 24 Energy Code with All-Electric Appliances**

Demonstrate a 20 percent improvement in time dependent valuation (TDV) energy, as shown on a CF-1R or PERF-1C report generated by an approved Title 24 compliance software using only electric equipment. The Title 24 compliance software must be approved by the CEC at the time the permit was approved. The energy model and associated CF-1R/PERF 1-C must be completed by a CEA.

How this is verified: At the time of application, the project will submit Title 24 CF1R documentation authored and signed by a 2016 Title 24 code CEA and the associated energy model (.bld or .ribd) for review. A HERS rater will field verify energy features associated with this documentation.

□ **Design Roof for Additional Structural Loads Associated with Solar Panels and Add Conduit for Future Installation**

The structural design loads for roof dead load and roof live load must be clearly indicated on the construction documents or provided in supplemental documentation. This is required so that the structural loads are known if a solar energy system is installed in the future. Conduit must be routed from the proposed future solar zone to the main service panel. The main electrical service panel must have a reserved space to allow for the installation of a double pole circuit breaker for a future solar electric installation and must be permanently labeled as “For Future Solar Electric.”

How this is verified: The construction plans will show dead and live loads associated with the roofing. A HERS rater will verify labelling of service panel.

□ **Electric Vehicle Charging Stations Provided for 3 Percent of Parking Spaces**

Three percent of the total amount of parking spaces provided, but in no case less than one space, must have level two electric vehicle charging station installed and activated. Resources for discounted and/or free charging stations are available from [SCP](#) and [PG&E](#).

How this is verified: If ordered through SCP or PG&E, charging station can be verified through an electronic signal once installed and activated. For items not ordered through SCP or PG&E, a HERS rater will field verify the installation of the charging station.

6.5.3.2 All-Electric Home Simple Menu-Based Pathway Requirements

The following measures must be completed as a part of the All Electric Home simple menu-based pathway.

□ **2016 Title 24 Code High Performance Walls**

The home is constructed with high performance walls in compliance with the prescriptive requirements as defined in the 2016 Residential Compliance Manual (Title 24, Part 6) TABLE 150.1-A. Per this requirement, walls must have a maximum U-factor of 0.051. U-factors can be calculated by building the construction assembly in CEC-approved compliance software, including the inside finish, sheathing, cavity insulation, and exterior finish. Some examples of various wood-framed wall assemblies, associated construction, and U-values are provided below.

Examples of Wood-Framed Wall Assemblies and U-Factors, Assuming Gypsum Board Interior

Stud	Cavity Insulation	Cavity Insulation Type	Exterior Insulation	U-Factor
2x6	R 21	Loose-fill cellulose or high density batt	R 4	0.051
2x6	R 19	Low density batt	R 5	0.051
2x4	R 15	High density batt	R 8	0.050
2x6	R 31	Closed-cell spray foam (ccSPF)	R 2	0.050
2x6	R 23	High density batt or mineral wool	R 4	0.049

How this is verified: The project will submit an energy model with high performance walls and/or attic at project application. A HERS rater will field verify construction assembly.

□ **2016 Title 24 Code High Performance Attics**

The home is constructed with a high performance attic Option A, B, or C as defined by the prescriptive requirements in the 2016 Residential Compliance Manual (Title 24, Part 6) TABLE 150.1-A or a totally sealed, unventilated attic that meets the same overall U-value requirements of the prescriptive high performance attic requirements.

Note: Because Climate Zone 2 does not have a requirement for High Performance Attics in Title 24, please reference the U-value and insulation requirements of Climate Zone 4.

Requirements for Roof/Ceiling Insulation Per Residential Compliance Manual (§150.1(c).1)

STRATEGY

HOW TO COMPLY

High-Performance Ventilated Attics

Option A	Vented attic with continuous insulation applied above the roof deck. Ceiling insulation required separately above finished attic ceiling.	Table 150.1-A of the Energy Standards Roof Assembly Option A
Option B	Vented attic with batt, spray in cellulose/fiberglass secured with netting, or SPF. Ceiling insulation required separately above finished attic ceiling.	Table 150.1-A of the Energy Standards Roof Assembly Option B

Ducts in Conditioned Space

Option C	Vented attic with no insulation at roof deck. Ceiling insulation required separately above finished attic ceiling. Ducts and air handler equipment in conditioned space that is NOT a sealed attic.	Table 150.1-A of the Energy Standards Roof Assembly Option C Form: CF2R-MCH-20b
----------	--	--

How this is verified: The project will submit an energy model with high performance walls and/or attic at project application. A HERS rater will field verify construction assembly.

Quality Insulation Installation (QII) Inspected by a HERS Rater

A HERS rater must inspect insulation and air leakage control methods according to the methods detailed in the Residential Appendix RA3.5.

How this is verified: A HERS rater will submit documentation of compliance with the QII test to the appropriate HERS registry. Program staff will verify this documentation when the project requests the final incentive check.

Cool Roof

For a low-sloped roof (i.e., a surface with a pitch less than or equal to 2:12), the project must install a product labeled by the Cool Roof Rating Council (CRRC) to have a minimum aged solar reflectance of 0.20 and a minimum thermal emittance of 0.75, or a minimum SRI of 16. For a steep-sloped roof (i.e., a surface with a pitch greater than 2:12), the project must install a product labeled by the CRRC to have a minimum aged solar reflectance of 0.63 and a minimum thermal emittance of 0.75 or a minimum SRI of 75.

How this is verified: The project will submit a specification sheet that shows emissivity and reflectivity value of the roofing product. Lawrence Berkeley National Laboratory produced a calculator that determines the SRI by designating the solar reflectance and thermal emittance of the desired roofing material. The calculator can be found at:

http://www.energy.ca.gov/title24/2016standards/documents/solar_reflectance/

□ **2019 Title 24 Code Windows (Max U-factor 0.30, SHGC 0.23)**

All windows must have a maximum U-factor of 0.30 and a maximum SHGC of 0.23.

How this is verified: At the time of application, the project will submit a specification sheet for windows, glazed doors, and skylights with the manufacturer's name, U-factor, and Solar Heat Gain Coefficient (SHGC). This is verified by a HERS rater in the field.

□ **High Efficiency Water Heater: NEEA Tier 3 Heat Pump Water Heater w/ Grid Integration Controls Installed (Central Systems Exempt from Grid Integration)**

The project must install a heat pump water heater that meets NEEA's Tier 3 Advanced Water Heater Specification **and** has an installed communication port that operates in compliance with CTA 2045 (or equivalent open modular interface standard) with specific demand response signals. An up-to-date list of water heaters that comply with the NEEA Tier 3 Advanced Water Heater Specification can be found here:

<http://neea.org/advancedwaterheaterspec>.

Central hot water systems that serve more than one residential unit are exempt from the requirement for grid integration.

How this is verified: At the time of application, the project will submit a specification sheet for the water heater with the manufacturer's name/model number and efficiency rating. If installing a solar water heater, a CF-SR form is also required. A HERS rater field verifies the water heater nameplate and efficiency.

□ **For Central Domestic Hot Water Systems: Drain Water Heat Recovery or Demand Controlled Recirculation**

For central domestic hot water systems that serve more than one residential unit, projects must install either a drain water heat recovery system **or** a demand-controlled recirculation system.

A qualified plumber must install the drain water heat recovery systems and attach the home's incoming cold water line through the unit to the water heater. Vertical drain water heat recovery unit(s) must be compliant with CSA B55.2 and tested and labeled in accordance with CSA B55.1. Sloped drain water heat recovery unit(s) must be tested and labeled with IAPMO IGC 346-2017. Potable water-side pressure loss of drain water heat recovery units must be less than 3 psi (20.7 kPa) for individual units connected to one or two showers. Potable water-side pressure loss of drain water heat recovery units must be less than 2 psi (13.8 kPa) for individual units connected to three or more showers.

Demand controlled recirculation systems in multifamily buildings operate by sensing hot water demand and recirculation return temperatures. The temperature sensor should be installed at the farthest end of the recirculation loop close to the last branch pipe.

How this is verified: The project will submit an energy model with drain water heat recovery and/or a demand-controlled recirculation system at project application. A HERS rater will field verify installation of these measures.

□ **High Efficiency Heat Pump for Heating/Cooling (EER of 12.5+, HSPF of 9.5+)**

The project must install a heat pump (ducted or ductless) for space heating and space cooling with a minimum EER of 12.5 and/or HSPF of 9.5 in all residential units.

How this is verified: At the time of application, the project will submit a specification sheet for the heating equipment with the manufacturer's name/model number and efficiency rating and a specification sheet for the air conditioner with the manufacturer's name/model numbers for condenser/coil match or AHRI reference number for each proposed unit (ahridirectory.org). A HERS rater will field verify the HVAC nameplate, efficiency, and ducting airtightness.

□ **Heating/Cooling Ducts That Are Well-Sealed, Insulated (R-8), and Located Primarily in Conditioned Space (Note: Buried Deeply In Attic Insulation Can Qualify)**

Where ducts are installed for heating and/or cooling purposes, they must be verified by a HERS rater to have a leakage rate of 5 percent or less than nominal system air handler airflow per the procedures described in Residential Appendix RA3.1. All ducts must be insulated to R-8. Ducts must either a) be verified by a HERS rater to have 12 linear feet or less of ducts located outside conditioned space per Residential Appendix RA3.1.4.1.2 or b) meet the definition of buried ducts per Residential Appendix RA3.1.4.1.5. Systems without ducts are exempted from this requirement.

How this is verified: The project will note duct leakage, location, and insulation levels on the CF-1R documentation provided at time of application. A HERS rater will field test and verify the duct location/design, airtightness, and insulation levels and upload a completed CF-2R to the HERS registry.

□ **Smart Thermostat**

The project must install a smart thermostat that provides the following: intelligent recovery, staging, ramping, or another control mechanism that prevents the unnecessary operation of supplementary electric resistance heating when the heat pump alone can meet the heating load. Ductless mini-split systems are exempt from this requirement.

How this is verified: A HERS rater will field verify the smart thermostat.

□ **WaterSense Efficient Plumbing Fixtures (SCP Territory Only)**

All installed toilets, urinals, showerheads, faucets, automatic irrigation controls must be certified to the performance criteria of the [US EPA WaterSense Specification](#). Flow rates for these items shall be per CALGreen (2016 Title 24 Code, Part 11).

How this is verified: As this measure is included in CALGreen code (2016 Title 24 Code, Part 11), an inspector from your jurisdiction or a CALGreen Special Inspector will provide field verification of this measure.

□ **Water Efficient Landscaping (SCP Territory Only)**

The project must meet the requirements for your local landscape ordinance or the current California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELo), whichever is more stringent or use one of the free landscape design templates provided by Sonoma-Marín Saving Water Partnership.

How this is verified: As this measure is included in CALGreen code (2016 Title 24 Code, Part 11), an inspector from your jurisdiction or a CALGreen Special Inspector will provide field verification of this measure.

□ **Induction Cooking**

The project must install induction technologies for all ovens and ranges. To test out an induction cooktop for free from SCP, please visit <https://sonomacleanpower.org/inductioncooking/> or email programs@sonomacleanpower.org.

How this is verified: A HERS rater will field verify the induction cooktop.

□ **ENERGY STAR Tier 2 Appliances**

ENERGY STAR Tier 2-certified appliances must be installed for all refrigerators, dishwashers, clothes washers, and bathroom exhaust fans. A list of current ENERGY STAR appliances can be found here: <https://www.energystar.gov/products/appliances>.

How this is verified: -A HERS rater will field verify that all appliances are ENERGY STAR rated.

□ **All LED Lighting, Including Common Areas and Exteriors**

All lighting at the property, including in-unit, common area, and exterior lighting must use LED fixtures and/or bulbs.

How this is verified: - The project will submit an energy model with lighting wattages. A HERS rater will field verify lighting is installed per the Title 24 report. TRC may request a lighting fixture schedule for review.

□ **Heat Pump or Electric Clothes Dryers**

The project must install heat pump or electric clothes dryers for all in-unit or central laundry rooms.

How this is verified: A HERS rater will field verify the heat pump or electric clothes dryers.

□ **Electric Vehicle Charging Stations Provided for 3 Percent of Parking Spaces**

Three percent of the total amount of parking spaces provided, but in no case less than one space, must have level two electric vehicle charging station installed and activated. Resources for discounted and/or free charging stations are available from [SCP](#) and [PG&E](#).

How this is verified: If ordered through SCP or PG&E, the charging station can be verified through an electronic signal once installed and activated. For items not ordered through SCP or PG&E, a HERS rater will field verify the installation of the charging station.

7. Program Frequently Asked Questions

The following section represents questions frequently asked of program staff. For any remaining questions, please contact RNC@TRCcompanies.com or programs@sonomacleanpower.org.

Program Processes

Q. I have purchased a lot where the home was destroyed, but I was not the previous occupant. Am I eligible for this program?

Yes, program qualification is based on lot, not occupant.

Q. Can I qualify for the program if I was not previously a Sonoma Clean Power or PG&E customer?

Yes, all homes, condominiums, and apartments red-tagged by CAL FIRE are eligible to participate, regardless of whether the current owner received service from Sonoma Clean Power or PG&E before.

Q. I am building a new home, but I am not on a lot effected by the fire. Can I participate in this program?

The Advanced Energy Rebuild program applies only to homes that were red-tagged by CAL FIRE, so you would not be eligible for participation. PG&E runs a separate program for new homes called the California Advanced Homes Program (CAHP) that you would be eligible to participate in. For more information about CAHP, visit: <http://cahp-pge.com/> or e-mail CAHP@TRCcompanies.com.

If you owned a home that was red-tagged by CAL FIRE and are rebuilding in PG&E or Sonoma Clean Power territory on a different piece of land, you are still eligible for incentives with proof of address and utility service on the red-tagged property.

Q. What is a certified energy analyst (CEA) and why is it required for the program?

Certification as a CEA signifies that a consultant understands the California Building Energy Efficiency Standards (Title 24, Part 6). CEAs also have an understanding of broader energy efficiency issues, are committed to providing quality service to clients, and have made a commitment to conduct business in an ethical fashion. For more information on the CEA certification, please visit www.cabec.org.

Q. Can a professional engineer (PE) substitute the requirement for a certified energy analyst (CEA)?

No. The consultant who generates the Title 24 documentation must be a CEA.

Q. Does the CEA have to be certified for the 2016 standards or is a 2013 certification okay?

A 2016 certification is required.

Q. Do I need a CEA if I am using the simple menu-based pathway?

Yes, a CEA is always required for all projects.

Q. Do I need to demonstrate that my home is 20 percent better than current Title 24 energy code if I am using the simple menu-based pathway?

No, you would meet program requirements if you install all items outlined under the menu-based pathway **and** pass current energy code (at greater than zero percent) per Title 24 documentation.

Q. Can a manufactured or prefabricated home participate in this program?

Provided the manufactured/prefabricated home is permitted with Title 24 energy calculations (specific to California), rather than the less rigorous country-wide code, prefabricated/manufactured homes are allowed in the program.

All-Electric Home

Q. If I have an interior gas fireplace in my home, does that prevent me from participating in the all-electric home pathway?

Yes, a home with an interior gas fireplace would only be eligible for the \$7,500 Advanced Energy Home incentive. An interior or exterior electric fireplace or an exterior propane fireplace would still be eligible to receive the all-electric home incentive.

Q. Can my home have a natural gas meter if I pursue the all-electric home pathway?

No. A home participating in the all-electric home pathway cannot include a natural gas meter.

Q. Is it possible to reach 20 percent compliance with an all-electric home?

For guidance, please contact us at RNC@TRCcompanies.com or programs@sonomacleanpower.org.

Bonus for Renewable Energy

Q. Can a leased solar panel or battery system receive the \$5,000 incentive?

Yes.

Q. Can I only participate in the solar panel and battery storage system bonus? Or do I need to participate in either the advanced energy home or all-electric home pathway?

The renewable energy incentive is a bonus and must be combined with either the advanced energy home or all-electric home incentive. It is not currently offered as a standalone incentive.

Q. If I am building a main house and an ADU, can I receive the solar and battery bonus for each building?

Yes, your ADU will be eligible for a \$2,500 bonus if you install a dedicated solar and battery system that meets program requirements.

Building Features

Q. Can I comply with the menu-based pathways if my ducts are located in the crawlspace?

A. Yes, a sealed crawlspace with a low watt draw exhaust fan (no more than 0.20 watt/cfm exhaust only) will be allowed to meet this requirement. Unvented crawlspaces should meet all code requirements of Section R408.3 of the California Residential Building Code.

Marketing

Q. Are there program marketing materials that I can provide to potential clients?

Yes, for the most up-to-date marketing materials, please email programs@sonomacleanpower.org or RNC@TRCcompanies.com.