

# SMUD Smart Homes

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## Program Manual

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May 2023



**Revision log**

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<b>11/20/2019</b>	1.0	Original publication
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## 1 Introduction

In 2021, we launched a new [Clean Energy Vision](#), an ambitious plan to eliminate carbon emissions from our power supply by 2030. As part of that plan, we continue to prioritize customer adoption of clean energy sources, load management, building electrification, and electric transportation throughout our community. The Smart Homes program provides incentives to home builders to support the installation of [Zero Carbon](#) technologies in new all-electric single family and multifamily homes, so we can all live in a Clean PowerCity<sup>SM</sup>.

Product offerings include:

1. All electric construction incentives, for the installation of heat pump and induction cooking technologies
2. SMUD's Neighborhood SolarShares<sup>®</sup> program, which can be used in lieu of on-site solar for 2019 Building Standards Code compliance. Learn more at [smud.org/en/Business-Solutions-and-Rebates/Neighborhood-SolarShares-fordevelopers](https://smud.org/en/Business-Solutions-and-Rebates/Neighborhood-SolarShares-fordevelopers)
3. Electric vehicle charger incentives
4. Information for home buyers to participate in SMUD's battery storage incentive program. Learn more at [smud.org/StorageResidential](https://smud.org/StorageResidential).

In addition to financial incentives, Smart Homes offers limited technical assistance to builders to help with code compliance and marketing materials that builders and their salespeople can use to explain the benefits of all-electric homes to prospective homebuyers.

The purpose of this Manual is to provide guidance to participating and prospective builders of new homes.

## 2 Program Eligibility

Eligibility is limited to production home builders constructing new homes in the [SMUD service area](#). Production builders build communities or neighborhoods of homes with the same or similar blueprint. They own the land they are building on and usually have a say in how the community is developed.<sup>1</sup>

A single family home is defined as a building that conforms to the R-3 Occupancy as adopted by the City of Sacramento. A multifamily home is defined as a building 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).

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<sup>1</sup> National Association of Home Builders, 2019

### 3 Program Requirements

#### Section 3.1. General Requirements

- Incentives are only available for new homes and multifamily buildings built in SMUD service territory.
- Participating projects must meet minimum program requirements for all homes and multifamily units within the same project.
- Homes must have only electric-powered equipment and no other fuel connections (e.g., natural gas) to or adjacent to the property, including common areas. Certain multifamily equipment and/or pools are exempted. Distributed energy resources (DERs) such as wind and solar are not considered fuel connections.
- Builders must apply prior to beginning any drywall installation.
- All participating units must be new construction dwellings and modeled accordingly.
- 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 compliance certificate. This includes verifications of non-HERS measures as applied in the projects' specified registry.
- Solar photovoltaic (PV) systems installed at the project location shall be minimally sized to comply with code. Minimally sizing the PV array includes downsizing the PV array if a battery is also installed. Rooftop solar PV installation should comply with CEC Title 24 EXCEPTION 5 to Section 150.1(c)14.
- Builder agrees to construct all single family homes with a dedicated 208/240-volt branch circuit installed in the raceway. The branch circuit and associated overcurrent protective device shall be rated to 40 amperes minimum. Builder shall install a 240-volt plug. The plug shall have a rating of 40 amperes according to the United States National Electrical Manufacturers Association (NEMA). The service panel or subpanel circuit director shall identify the overcurrent protective device designated for EV charging purposes as "EV READY" in accordance with the California Electrical Code. The receptacle or blank cover shall be identified as "EV READY" and shall be installed in accordance with the California Electrical Code.

For the heat pump water heater requirement, unit must meet NEEA Tier III or IV requirements for climate zone 12, with a Uniform Energy Factor (UEF) of 2.87 or higher. Installation must include a thermostatic mixing valve. A mixing valve is a physical component installed on your water heater that blends hot water with cold water to ensure a constant, safe water faucet outlet temperature.

- Builders agree to include communicating SMART thermostats eligible for SMUD's My Energy Optimizer certification for single family homes. Builders can agree to install communicating SMART thermostats eligible for SMUD's My Energy Optimizer for Multifamily projects as an optional add-on for 2023 and a required device after 12/31/2023. The list of eligible SMART thermostats can be found at [myenergyoptimizer.org/devices](https://myenergyoptimizer.org/devices).

- Builders agree to segregate circuits by the following types:
  - [Lighting](#) including exit and egress lighting and exterior lighting
  - HVAC systems and components including chillers, fans, heaters, furnaces, package units, cooling towers, and circulation pumps associated with HVAC.
  - Domestic and [service](#) water [system](#) pumps and related systems and components ○ [Plug load](#) including appliances rated less than 25 kVA. ○ Charging stations for electric vehicles
- When segregating the circuits, it is important to remember that no plug load, lighting load, or appliances (including but not limited to: dishwasher, dryer, refrigerator, clothes washer, oven, whole house fan, furnace/heat pump, water heater, sump pumps, etc.) can share a common circuit. This means that any one circuit can only serve either a lighting load, a plug load, or a single major appliance (ceiling fans with lighting should be counted as a lighting load).
- The program envisions the use of conventional panelboards, fuses, circuit breakers, motor control centers, and other standard wiring methods for meeting the requirement to separate electrical loads. The requirement may also be achieved by a well-planned wiring approach, such as connecting all HVAC units to a single feeder from the [service](#) using a combination of through feeds and taps.
- Builders agree to be battery storage ready.
  - New single-family homes must be wired so energy storage systems can easily be added later. Building energy standards require a minimum 225-amp busbar, four backed-up circuit (two of which must be the refrigerator and bedroom receptacle outlet), and either a subpanel or split-bus main panel for those circuits. Refer to 2022 Title 24 Residential Standards Section 150.0(s)
- **\*\*For multifamily properties only\*\*** Builder shall provide accurate design load calculations reflecting the Builder's participation in the program, e.g., all-electric construction and submit to SMUD Grid and Line Design with the application for service.

Qualified homeowners can receive up to \$2,500 in incentives by participating in our residential battery storage incentive program, My Energy Optimizer. There are 3 levels of program participation to choose from. Learn more at [smud.org/StorageResidential](https://smud.org/StorageResidential).

## **4 Incentives and Assistance**

### **Section 4.1. Financial Incentives**

The following incentives are available on a per home basis for all-electric homes. Incentive amounts are determined by the incentive rate in the year in which the home is completed, and the Builder submits an Incentive Request Form or the incentive rate in the year the Builder submits an Incentive Request Form.

Code Changes. Incentives will be nullified if the units become subject to a local or state building code that requires all-electric new construction, as of the effective date of the code.

**Table 1 – Single Family, All-Electric Incentives**

<b>2023 Incentive</b>	<b>Amount Available</b>
Base Incentive for All-Electric Home – requires heat pump water and space heating	\$3,500
Induction Cooktop	\$500
Level II EV Charger	\$400
<b>Total 2023 All-Electric Incentive per Home</b>	<b>Max \$4,400</b>
<b>2024 Incentive</b>	<b>Amount Available</b>
Base Incentive for All-Electric Home – requires heat pump water and space heating, induction cooktop/stove, and eligible smart thermostat	\$3,250
Level II EV Charger	\$400
<b>Total 2024 All-Electric Incentive per Home</b>	<b>Max \$3,650</b>
<b>2025 Incentive</b>	<b>Amount Available</b>
Base Incentive for All-Electric Home	\$2,500
Level II EV Charger	\$400
<b>Total 2025 All-Electric Incentive per Home</b>	<b>Max \$2,900</b>

**Table 2 – ADU\* and Multifamily, All-Electric Units**

<b>2023 Incentives</b>	<b>Amount Available</b>
Base Incentive for All-Electric Unit – requires heat pump water and space heating	\$1,250
Induction Cooktop Bonus	\$500
SMART Thermostat Bonus	\$50
<b>Total All-Electric Incentive per Home</b>	<b>\$1,800</b>
<b>2024-2025 Incentives</b>	<b>Amount Available</b>
Base Incentive for All-Electric Unit – – requires heat pump water and space heating, induction cooktop/stove, and eligible smart thermostat	\$1,500

\*Accessory Dwelling Unit

## Section 4.2. Affordable Housing Bonus

Affordable multifamily buildings are also eligible for the additional incentives

1. 25% of the base incentive
2. CHPWH Design Stipend up to \$50,000
3. CHPWH Equipment Incentive up to 75% of incremental cost of equipment

To qualify, the project must demonstrate at least one of the following:

1. Development is certified as affordable housing based on regulatory designation. Acceptable documentation includes:
  - a. Certification letter from the Sacramento Housing and Redevelopment Agency with a site specific Affordable Regulatory Agreement or land covenant,
  - b. Low-Income Housing Tax Credit Programs Recipient - California Tax Credit Allocation Committee
  - c. Home Investment Partnerships Program (HOME) recipient
  - d. Other documentation dependent on program review and approval.
2. Applicant is an Affordable Housing developer. Acceptable documentation includes:
  - a. Community Housing Development Organization (CHDO) designate
  - b. Other documentation dependent on program review and approval

## Section 4.3. Electric Vehicle Supply Equipment (EVSE) Bonus

The EVSE \$400 bonus incentive offered for the installation of a qualified hard-wired Level 2 charger in single family all-electric developments. To qualify the Builder must install a qualified Level 2 charger in every home of the all-electric development. The most up-to-date equipment requirements can be found at [smud.org/en/Going-Green/Electric-Vehicles/Residential](https://smud.org/en/Going-Green/Electric-Vehicles/Residential), with the addition of a hard-wired specification. The requirements include:

1. Equipment must be new and installed for the first time, hardwired installed on a wall or pedestal mounting.
2. Charging Current: Supply an output current up to 32 amps maximum (7.7 kW) served by a maximum 40-amp breaker.
3. Units with adjustable power output are eligible as long as maximum kW output can be safely served by a 40- amp circuit breaker
4. Equipment must be new and installed for the first time, either hardwired installed on a wall or pedestal mounting or plug-in unit, at the corresponding eligible SMUD service address.
5. Vehicle Connector: Utilize an SAE J1772 compliant charging connector
6. Safety Certifications: UL or equivalent certified by Nationally Recognized Testing Laboratory (NRTL)



7. EPA Certification: ENERGY STAR® Certified
8. Warranty: Minimum 3-year
9. Limit – 1 (one) charger per home

Complete and current technical requirements available at [smud.org/en/Going-Green/Electric-Vehicles/Residential](https://smud.org/en/Going-Green/Electric-Vehicles/Residential).

For EVSE incentive information for potential other Single Family offerings and/or Multifamily homes offerings, visit [smud.org/en/Going-Green/Electric-Vehicles/Business](https://smud.org/en/Going-Green/Electric-Vehicles/Business).

#### Section 4.4. Affordable Housing Design Assistance

SMUD or its authorized representatives can provide limited design assistance at the request of the Builder, related to the specifications or accommodations for all-electric technologies like heat pump water heaters and heat pump space heaters and/or guidance regarding CEC approved energy analysis computer output prepared by the builder's consultants.

#### Section 4.5. Affordable Housing Design Stipend – Central Heat Pump Domestic Water Heating Systems

SMUD or its authorized representatives can provide limited financial assistance at the request of the Builder related to the design, specifications or accommodations for all-electric technologies necessary for central heat pump water heating systems and/or CEC approved energy analysis computer output prepared by the Builder's consultants. The stipend shall be paid to the Builder subject to the following:

1. 30% of the stipend shall be paid at the 100% Design Development Phase as defined by the AIA Handbook of Professional Practice, Latest Edition. The Central Heat Pump Water Heating design (the Work) documents shall at minimum:
  - Include fully dimensioned floor plans and updated space allocations necessary to fix and describe the size and character of the Work.
  - Project performance criteria refined/confirmed.
  - Outline specifications for the Work – draft of the related section of the Project Manual.
  - Enable the Contractor to prepare initial pricing to estimate the incremental cost of the Work.
2. 70% of the Stipend shall be paid at the 100% Construction Documents Phase as defined by the AIA Handbook of Professional Practice, Latest Edition. The Central Heat Pump Water Heating design (the Work) documents shall at minimum:
  - Communicate to the Builder, in detail, what design involves.

- Communicate to the Contractor the quantities, qualities, and the relation of all work required to construct the Central Heat Pump Water Heating design.
- Enable the Contractor to solicit bids or quotations from subcontractors and suppliers to price the Work.
- Enable the Contractor to prepare an Add/Deduct Alternate to establish the incremental cost of the Work.

## Section 4.6. Marketing Assistance

SMUD, at its sole discretion and contingent on availability of funds, may provide Builder and its affiliates marketing support for these projects, which may include, but is not limited to the following:

- Print advertising
- Brochures specific to each project
- Project specific signage
- Special event promotion

All marketing efforts or materials that mention SMUD or display SMUD's logo must be approved in advance by SMUD.

## Section 4.7. Coordination with Neighborhood SolarShares

Program participants are eligible to participate in SMUD's Neighborhood SolarShares<sup>®</sup> Program (NSS Program). The NSS program provides homebuilders and community developers with a no-cost option for meeting the 2019 new residential construction solar mandate embodied in the 2022 Building Energy Efficiency Standards (Title 24, Parts 6 and 11 – herein referred to as the '2022 Energy Code).

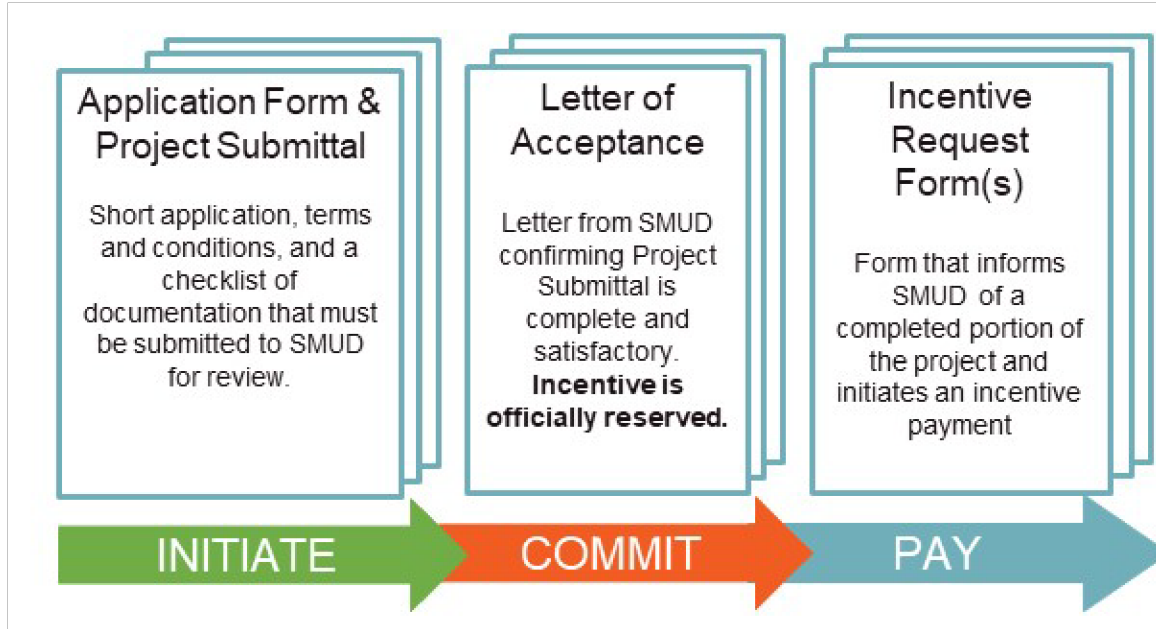
For more information, visit [smud.org/en/Business-Solutions-and-Rebates/NeighborhoodSolarShares-for-developers](https://smud.org/en/Business-Solutions-and-Rebates/NeighborhoodSolarShares-for-developers).

## 5 Participation Process

### Section 5.1. Smaller Projects Less than \$150,000 in Incentives

Figure 1 below shows the Smart Homes program enrollment and documentation process for smaller developments of approximately 30 homes and receiving \$150,000 or less in incentives.

**Figure 1 – Project Lifecycle and Smart Homes Documentation for Smaller Developments**



The Smart Homes application and incentive process can be completed in three steps for smaller development projects:

1. Submit Application for Small Developments and Project Submittal Checklist
2. Receive Acceptance Package: Letter and addition enrollment document from SMUD confirming application and project submittal is complete and satisfactory. **Incentives are officially reserved upon issuance of the letter.**
3. Submit Incentive Request Form to inform SMUD of a completed project and initiate an incentive payment.

## Section 5.2. Larger Projects Over \$150,000 in Incentives

Figure 2 below shows the Smart Homes program enrollment and documentation process for larger developments of approximately 30 homes or more and receiving \$150,000 or more in incentives.

**Figure 2 – Project Lifecycle and Smart Homes Documentation for Larger Developments**



The Smart Homes application and incentive process can be completed in four steps for larger development projects:

1. Submit Application for Large Developments and Project Submittal Checklist supporting documentation. You'll receive an email confirmation of a successful project submittal with an agreement for your signature. Projects that have not submitted supporting documents within 6 months of applying will need to reapply to the program.
2. Return signed agreement to SMUD.
3. Receive an acceptance package with the fully executed agreement and details on how to receive the incentive payment. **The SMUD incentive is officially reserved after this step.**
4. Submit incentive request form(s) to request payment from SMUD after each phase of the project is complete.

## 6 Incentive Commitment Timing

Incentives are subject to change at SMUD's discretion. For large developments, incentives will not be paid until after a final agreement between SMUD and the builder is signed by both parties. All final incentives are subject to management approval, which may include SMUD's Board of Directors depending on the total incentives being requested. Incentives will only be reserved through an executed agreement (large projects) or Letter of Acceptance (small projects).

It is important to note that, regardless of the size of the community, SMUD reserves incentive rates and incentives on a calendar year annual basis. **Incentive funds do not automatically roll over to the following year.**

As an example, Builder A and SMUD execute an Agreement for 20 homes in 2023 and 21 additional homes in 2024. The builder experiences a delay and only completes 15 homes in 2023. The Builder submits an Incentive Request Form for the 15 homes and receives the funds at the 2023 incentive rate. In 2024, the builder hires more workers and catches up on their backlog, completing the delayed 5 homes and the 21 additional homes. Since the builder's incentive for the five delayed homes is not guaranteed to roll over, the Builder contacts SMUD, informs SMUD that they completed 26 homes instead of 21 homes, and requests additional incentive funds for the 5 homes. The additional incentives are not guaranteed and will be offered at SMUD's discretion and at the incentive rate in the year in which the request for payment is made.

Incentives are considered received in a calendar year if the incentive request form is received prior to the end of the calendar year, even if it means that processing and payment occurs in the following year.

**The Smart Homes budgets are finite and could potentially be exhausted. SMUD will only reserve those funds identified per community per year. The projects must be completed within the timeframe provided in the Agreement and invoiced before year-end. Additional program funds are available on a first-come, first-served basis.**

**Future incentive levels are subject to change without notice.**

## 7 Additional Information

TRC Consulting is under contract with SMUD for technical services. Email them at [rnc@trccompanies.com](mailto:rnc@trccompanies.com) or call 866-352-7457 with questions or to discuss your interest or application.