



Fact Sheet: Heat Pump Water Heater Incentive Programs

A Heat Pump Water Heater (HPWH) is a high-efficiency electric water heater that transfers heat from the air into water stored in a tank using compression technology such as those found on all household refrigerators. HPWHs can be sold in a “unitary” tank configuration, similar to common residential tank water heaters, and a “central system” configuration for multifamily and commercial applications. The benefits of HPWHs include:

- Greenhouse gas (GHG) emission reductions from the building sector as a result of displacing natural gas and propane combustion water heating;
- Increases in electrical efficiency as a result of replacing electric resistance water heaters; and
- Utility bill savings for ratepayers as a result of technology efficiencies and the ability to shift electric consumption to parts of the day when renewable energy resources are abundant and electricity prices are lowest.

BACKGROUND

- The California Public Utilities Commission (CPUC) is currently implementing or reviewing 16 separate building electrification programs incentivizing heat pumps or related equipment – 15 of which fund HPWHs – offered by electric Investor Owned Utilities (IOUs) and/or in electric IOU service territory. Eleven programs have received CPUC approval and the other five programs are at various stages of CPUC review.
- The combined CPUC-approved and proposed building electrification funding is approximately \$435 million through 2024 (see Figure 1 below). This funding is inclusive of three energy efficiency programs that are implementing electrification measures that have passed the Fuel Substitution Test adopted in D.19-08-009. This test allows funding from the state’s annual \$1 billion energy efficiency program portfolio to be used toward fuel substitution measures (i.e., electric-to-gas or gas-to-electric end-uses) that do not increase source energy usage or harm the environment.¹
- In addition to the HPWH incentive programs proposed by the electric IOUs, four community choice aggregators (Marin Clean Energy, San Jose Clean Energy, Silicon Valley Clean Energy, and Sonoma Clean Power), two publicly owned utilities (Sacramento Municipal Utility District and City of Palo Alto), and three other state agencies (California Department of Community Services and Development, Bay Area Air Quality Management District, and South Coast Air Quality Management District) are currently providing incentives for HPWHs.

¹ D.19-08-009 adopted requirements for the Fuel Substitution Test as a replacement for the Three-Prong Test established under D.92-02-075. The CPUC issued the Fuel Substitution Technical Guidance document on 10/31/2019 specifying the details of how measures can pass the test and be approved by the CPUC.



COORDINATION & FUTURE OPPORTUNITIES

- Through its various phases, the CPUC’s Building Decarbonization proceeding (R.19-01-011) will explore future tariffs, programs, and policies, such as the transformation of the HPWH market, to further decarbonize the California’s building sector and meet the state’s building decarbonization goals established pursuant to AB 3232 (Friedman, 2018) and other legislation.

The four phases of the Building Decarbonization proceeding include:

- Phase 1 – Implementation of the Building Initiative for Low-emissions (BUILD) Program and Technology for Clean Heating (TECH) Initiative. The BUILD Program will provide incentives for all-electric new residential construction. The TECH Initiative will help develop the market for low-emission space and water heating technologies for new and existing residential buildings through consumer education, contractor training, and vendor training, as well as the provision of upstream and midstream appliance incentives. Program rules and budgets for the two pilot programs were adopted in D.20-03-027.
- Phase 2 – Adoption of statewide pilot programs to incentivize the reconstruction of all-electric homes or the incorporation of other building decarbonization approaches following a natural disaster.
- Phase 3 – Exploration of opportunities to better coordinate the state’s building and appliance energy efficiency standards to maximize building decarbonization benefits. To further develop technologies and strategies identified as part of this exploration process, the CPUC will consider voluntary incentive programs that deliver low emission solutions in buildings over time in concert with modifications to these building codes.
- Phase 4 – Development of a long-term building decarbonization policy framework that explores the necessary rules, policies, and rate designs required to achieve California’s GHG emission reduction targets and goals.



FIGURE 1: SUMMARY OF HPWH INCENTIVE PROGRAMS

The incentive programs listed in the table below include both HPWHs and other major building end-uses devices/appliances, such as Heat Pump Heating Ventilation and Air Conditioning (HP HVAC) systems.

Program	Technology Type	Sector	Budget Incentive (millions)	Description	Implementation Status
MCE's LIFT Program	HPWH HP HVAC	Residential– Multifamily	\$3.5	This program is funded through the Energy Savings Assistance Program (ESAP) budget through 12/31/2020.	Implementation activities are ongoing. Funds expire on 12/31/2020.
PG&E's & SCE's Wildfire Rebuild Programs	HPWH HP HVAC HP Dryer Induction Stove	Residential & Commercial	\$6.7	These programs provide incentives for "above" code and all-electric reconstruction of structures destroyed by wildfires.	Program implementation of both programs is ongoing.
San Joaquin Valley (SVJ) Clean Energy Pilot	HPWH HP HVAC Induction Stoves Solar Thermal for 53 households Gas Line Extension to 224 Households	Residential– Low-Income	\$47.4	Total program budget is \$56 million. \$47.4 represents electrification funds. This program will install up to an estimated 1,667 HPWHs at an estimated cost of \$4.8 million of the total program budget.	Early implementation activities – including community outreach, appliance purchasing, and site visits – are ongoing.
Southern California Edison's (SCE's) DR DAC & Grid Responsive HPWH Study	Grid-enabled HPWHs	Residential– Low-Income	\$1.3	This program will cover all costs for the installation of grid-enabled control on SCE installed SVJ pilot HPWHs.	Program Advice Letter was approved in August 2019. Early control designs and strategies work ongoing.
Pacific Gas & Electric (PG&E) - Watter Saver Pilot program	Grid-enabled HPWHs	Residential	\$6.4	This program will cover all costs for the installation of grid-enabled controls on HPWHs.	Program Advice Letter was submitted on 12/31/2019, suspended on 01/31/2020, and is currently under review by the CPUC.
Energy Efficiency & Fuel Substitution Measures	HPWH HP HVAC HP Dryer Induction Stove	Residential & Commercial	\$31	SCE and BayREN are incentivizing electric appliance retrofits. Energy efficiency electrification programs are likely to increase in 2021.	Energy Division approved five fuel substitution work papers and is currently reviewing an additional three. Each working paper represents an individual electrification measure.



Building Initiative for Low emissions Development (BUILD) Program	HPWH HP HVAC HP Dryer Induction Stove	Residential	\$80	This program will provide incentives to builders to construct all-electric homes. Program funding is pending CPUC adoption.	D.20-03-027 adopted rules and program budget of \$80 million. Energy Division and CEC staff are developing a program implementation plan.
Technology and Equipment for Clean Heating (TECH) Initiative	HPWH HP HVAC	Residential	\$120	This program will provide incentives to HP technology to encourages sales and adoption. Funding is pending CPUC adoption.	D.20-03-027 adopted rules and a program budget of \$120 million. Energy Division will issue a program implementer RFP soon.
Self-Generation Incentive Program (SGIP)	HPWH	Residential & Commercial	\$44.6	This program will provide incentives for HPWHs, and eligibility requirements of (grid-enabled or not) are forthcoming.	The CPUC hosted a Part 1 workshop on 3/19/2020. A Part 2 workshop is scheduled for 5/7/2020. Slides are available at https://www.cpuc.ca.gov/sgip/
SCE's ESA Building Electrification Pilot (2021 – 2026)	HPWH HP HVAC HP Dryer Induction Stove	Residential	\$47.5	This program focuses on electrifying existing ESAP eligible buildings is pending CPUC approval.	A.19-11-004. A Proposed Decision is scheduled for issuance in Winter 2020.
SCE's ESA Building Electrification New Construction Pilot	HPWH HP HVAC HP Dryer Induction Stove	Residential	\$21	This program focuses on encouraging the electrification of new low-income buildings. Funding is pending CPUC approval.	A.19-11-004. A Proposed Decision is scheduled for issuance in Winter 2020.
MCE's Low-Income Tenant and Families (LIFT) 2.0 Program	HPWHs HP HVAC	Residential (Multi-family)	\$10.6	This whole building multifamily program would focus on energy efficiency and fuel substitution measures installation in qualifying low-income properties.	A.19-11-007. A Proposed Decision is scheduled for issuance in Winter 2020.
SCE Smart Water Heater Program	HPWHs	Residential & Commercial (Small)	\$15	This proposed program will will cover all costs for the installation of grid-enabled controls on HPWHs to enable energy storage.	A.20-03-004 Pending Commission approval. Program planning will commence in 2022.

Total CPUC Potential Program Incentive Funding through 2024 - \$435 Million