

DOCKETED

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Advanced Energy Rebuild Program

July 2019

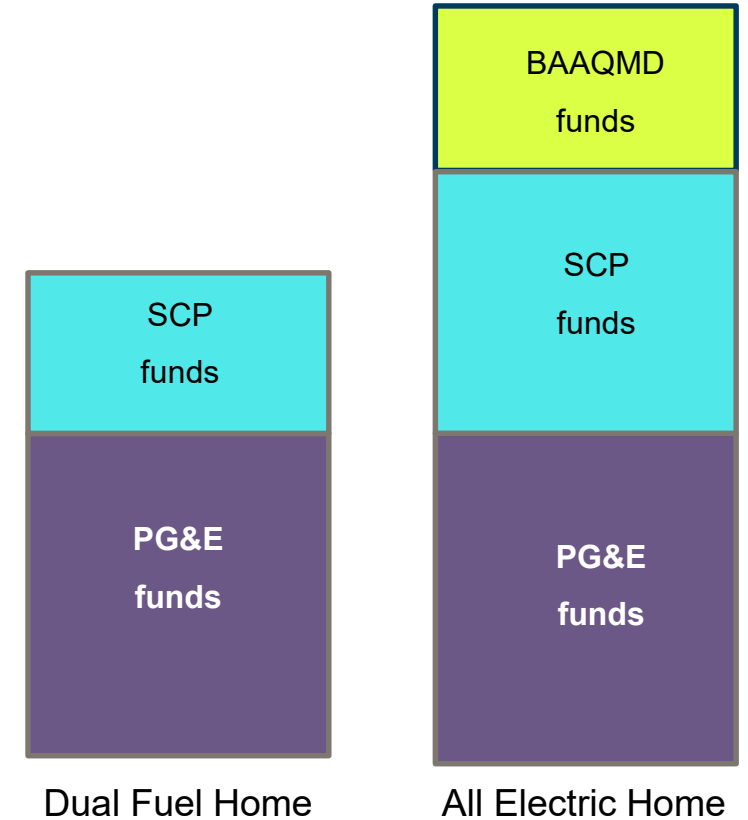


Together, Building
a Better California



Advanced Energy Rebuild

Collaboration between Sonoma Clean Power,
Pacific Gas and Electric (PG&E) and the Bay Area
Air Quality Management District.
-Launched in May 2018.





2019 Bay Area Metro Awards: Grand Award to: ADVANCED ENERGY REBUILD PROGRAM

The Bay Area Metro Awards were presented on June 6, 2019, at a ceremony in Oakland recognizing 13 people, projects, organizations and local governments advancing solutions to ease the Bay Area's housing crisis, improve the transportation system or make the nine-county region more resilient.

Collaboration stood out as a key theme for the new awards program since many of the winners were based on effective partnerships: From a team of transit agencies' heroic efforts during the North Bay fires.

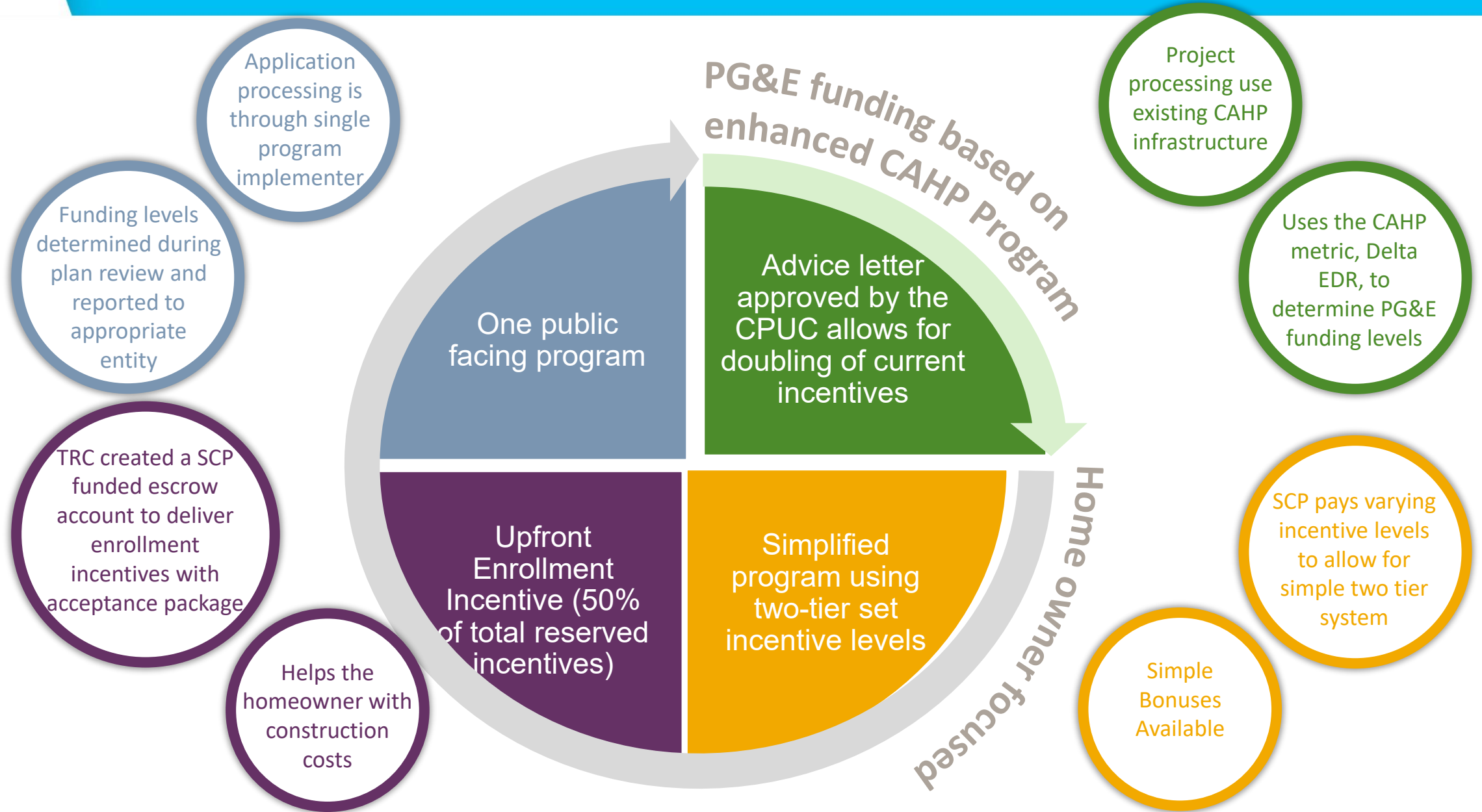
Three public transit operators and a public energy program were recognized for their work to save lives, protect communities and aid in rebuilding in response to the October 2017 North Bay fires.

<https://mtc.ca.gov/whats-happening/news/special-features/2019-bay-area-metro-award-winners>



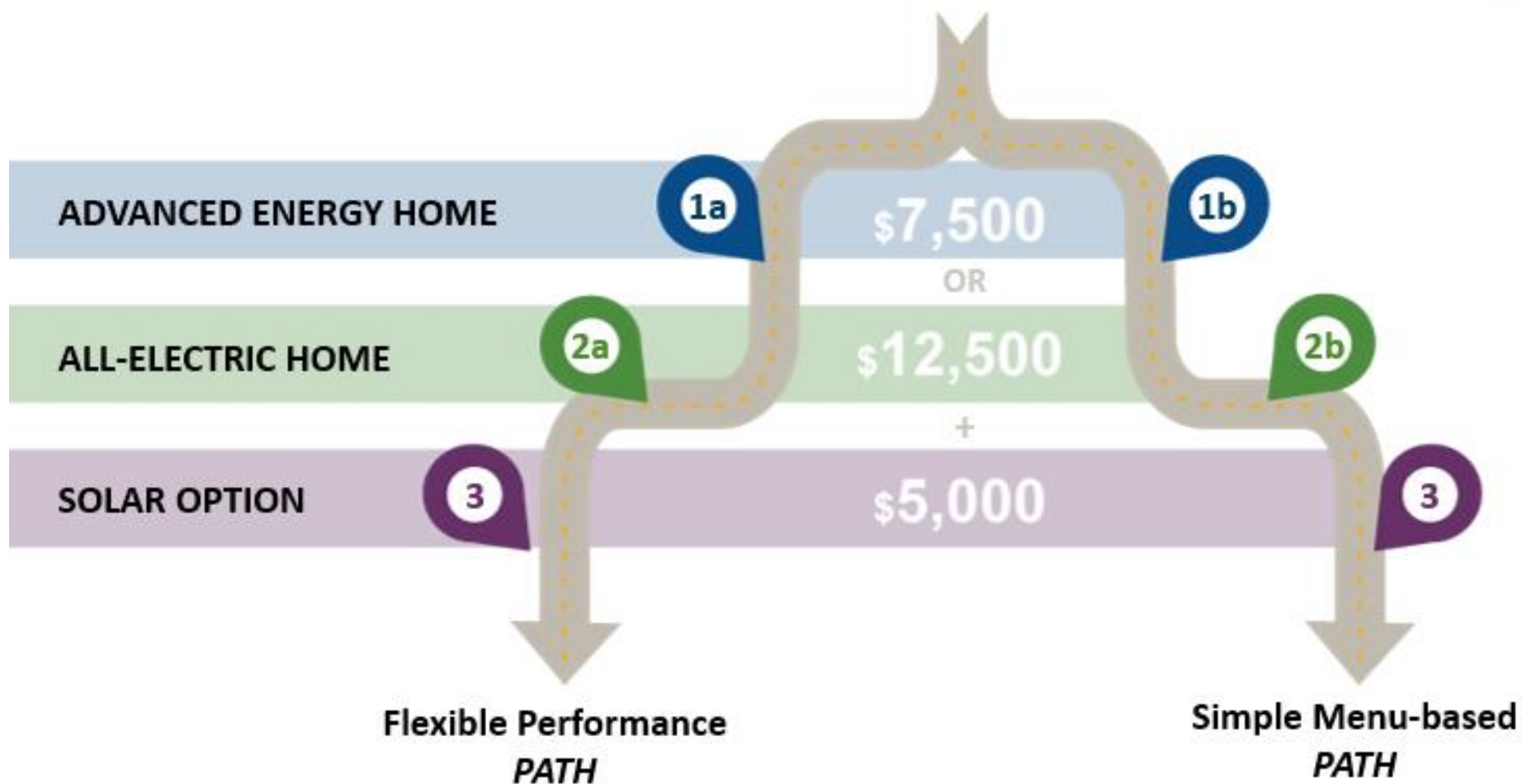


Program Design





Program Pathways





Pathway 1 – Advanced Energy Home (\$7,500)

1 **Advanced Energy Home**

\$7,500

Flexible Performance Path

- 20% above Title 24 energy code
- 220V outlet at stove/range, water heater, and clothes dryer
- Design roof for additional structural loads associated with solar panels, and add conduit for future installation
- Electric Vehicle Charging Station - Equipment free from Sonoma Clean Power

\$7,500

Simple Menu-Based Path

- 2016 Title 24 High Performance Walls or 2016 Title 24 High Performance Attics (note: unvented attic can qualify)
- 2019 Code windows (Max U-factor 0.30, SHGC 0.23)
- High efficiency water heater: Heat Pump Water Heater w/ EF of 3.0+ or gas tankless w/ EF of 0.92 and 220v outlet
- Heating/cooling ducts that are well sealed, insulated (R-8), and located primarily in conditioned space (note: buried ducts as defined by Title 24 can qualify)
- WaterSense efficient plumbing fixtures
- Water efficient landscaping
- Energy Star Appliances
- 220V outlet at stove/range and clothes dryer
- Electric Vehicle Charging Station – Equipment free from Sonoma Clean Power



Pathway 2 – All Electric Home (\$12,500)

2 All Electric Home

\$12,500

Flexible Performance Path

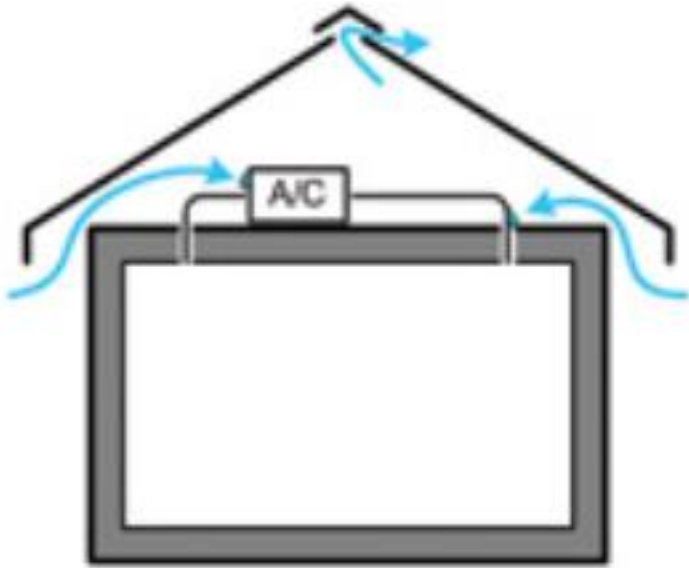
- 20% above Title 24 energy code, all electric end uses
- Design roof for additional structural loads associated with solar panels, and add conduit for future installation
- Electric Vehicle Charging Station - Equipment free from Sonoma Clean Power

\$12,500

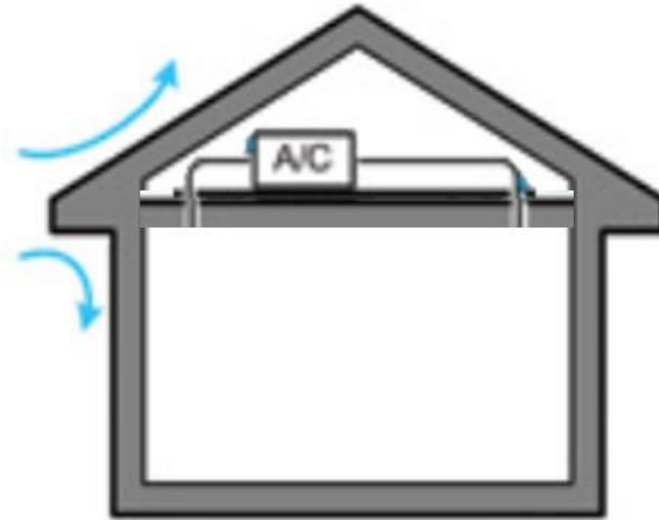
Simple Menu-Based Path

- 2016 Title 24 High Performance Walls
- 2016 Title 24 High Performance Attics (note: unvented attic can qualify)
- Insulation Inspected by a HERS Rater (QII)
- Building Enclosure Airtightness verified by a HERS Rater (less than 3 ACH50)
- "Cool" Roof
- 2019 Title 24 Windows (Max U-factor 0.30, SHGC 0.23)
- NEEA Tier 3 Heat Pump Water Heater w/ grid-integration controls installed
- High efficiency heat pump for heating/cooling (EER of 12.5+, HSPF of 9.5+)
- Heating/cooling ducts that are well sealed, insulated (R-8), and located primarily in conditioned space (note: buried ducts as defined by Title 24 can qualify)
- Smart Thermostat
- WaterSense efficient plumbing fixtures
- Water efficient landscaping
- Induction Cooking
- Energy Star Appliances for all Refrigerators, Dishwashers, Clothes Washers, and Bathroom Fans
- Heat Pump or Electric Clothes Dryer
- Electric Vehicle Charging Station – Equipment free from Sonoma Clean Power

Unvented Attics – Resilient and Efficient



(Conventional) Ventilated Attic



Unventilated Sealed Attic



Accessory Dwelling Units

AER is offering incentives for accessory dwelling units (*not typical for residential new construction programs*)

- First dwelling unit that is rebuilt will receive the full incentive, the second will receive 50% of the total eligible incentive





Additional Program Resources

- Education classes at the North Coast Builder's Exchange
- Certification Courses (and discounts!) for Certified Energy Analysts and HERS Raters
- Induction Cooktop Lending Program





The AER Origin Story

Oct 2017

Both PG&E and SCP were separately working on programs for the affected homes.

Jan/Feb 2018

SCP attained additional funding through BAAQMD.

- Funding for GHG reducing technologies (heat pumps, solar + battery).

Nov/Dec 2017

PG&E and SCP combined efforts.

- Didn't want to compete with each other or confuse home owners.
- Allows for larger incentives, and more efficient, grid-friendly homes.

May 2018

AER program launches.



Roles



PG&E

Resource funding
for kWh and therm
savings

Responsible for
program
administration cost



SCP

Internal funding for
GHG reduction

Marketing,
Outreach, and
Recruiting



BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

BAAQMD

Funding for specific
GHG reducing
technologies



TRC

Program
implementation,
design consulting,
and project
processing
infrastructure

Stakeholder
education (HERS
Raters, Energy
Consultants, Builders)

AER: A Different Kind of RNC Program

Typical Residential Program

Developer owns all the land

Entire developments under one application

Multiple homes per plan type

Incentives processed for groups of homes

VS

AER Program

Each individual lot has a different homeowner

One home per application

One home per plan type

Individual incentive processing for each home



Production Builder vs. Home Owner

Production Builder

Concerned only about the first costs

Efficiency is not a motivator

Wants to meet code as cheaply and easily as possible

Does not have to live in the home

VS

Home Owner

Life-cycle cost is a factor

Efficiency/energy savings is a motivator

Wants best home possible

Comfort and resilience are major selling points



AER Program Application Statistics

105



Total Applications Submitted

207



Total Homes

104 single family
7 ADUs
96 multifamily

33



All-Electric Applications Submitted

3,246

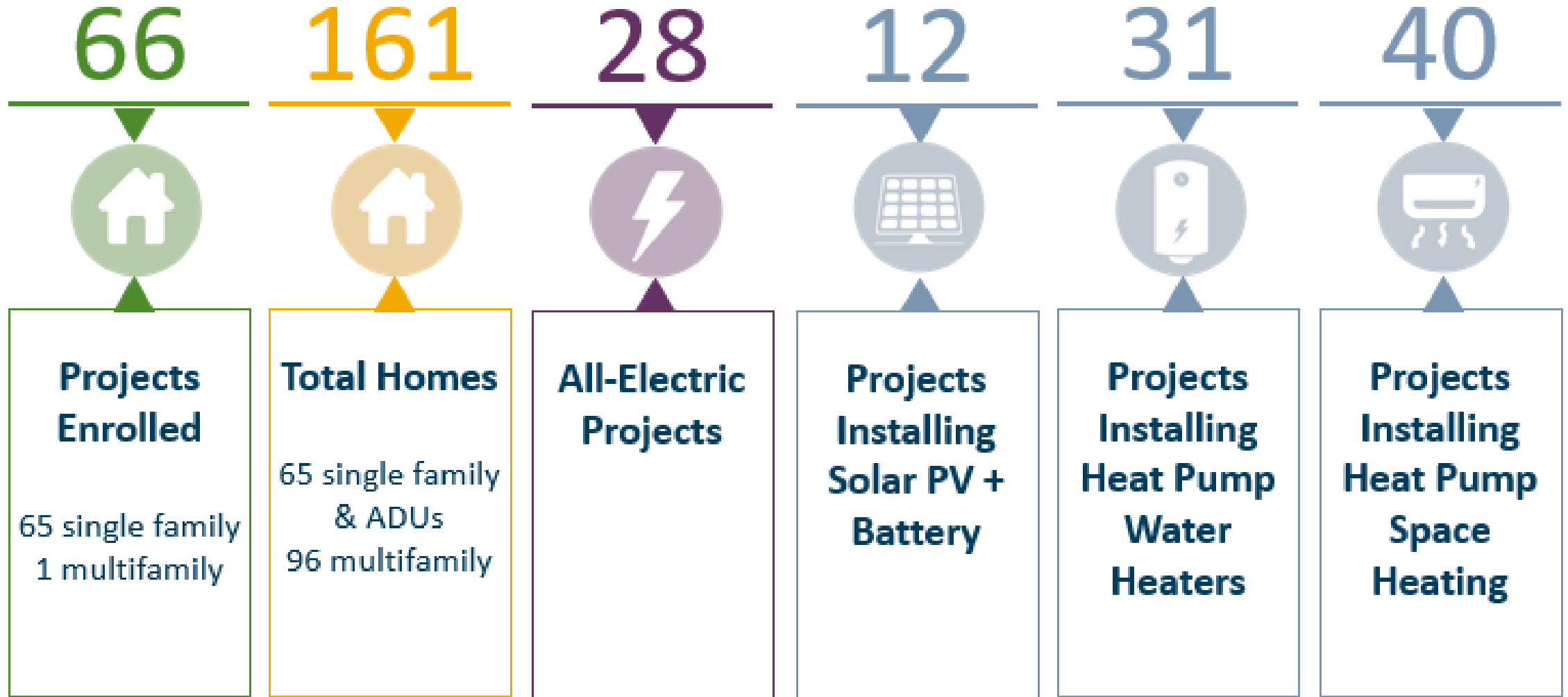


Total Permits Pulled

6% participating in AER



AER Program Enrollment Statistics



Projects Enrolled

65 single family
1 multifamily

Total Homes Enrolled

65 single family & ADUs
96 multifamily

All-Electric Projects

Projects Installing Solar PV + Battery

Projects Installing Heat Pump Water Heaters

Projects Installing Heat Pump Space Heating



AER Program Statistics

9,620



**Total
Enrolled
kWh Savings**

(60 kWh /
dwelling unit)

62,780



**Total
Enrolled
Therms
Savings**

(387 therms /
dwelling unit)

340



**Total Tons of
Enrolled
GHG Savings**

(2.1 tons /
dwelling unit)

\$985,000



**Total Incentives
Reserved**

(\$6118 / dwelling
unit)

24.0%



**Average T-24
Above Code
Compliance**



AER Program Average Incentives

\$9,615 /home



Single Family Home Average Incentive

BAAQMD: \$1,476 /home
PG&E: \$3,188 /home
SCP: \$ 4,950 /home

\$3,750 /unit



Multifamily Unit Average Incentive

PG&E: \$920 /unit
SCP: \$2,830 /unit



What are Participating Home Owners Saying?

Thank you so much and thanks for all the work everyone put into this. My family and I are incredibly grateful to be recipients of this program!

...we look forward to living in our new highly energy efficient home, one that you have helped motivate us to build.

It's exciting, innovative and good for our environment. I learned a lot about energy efficient choices and I'm really glad I went that way.

The Advanced Energy Rebuild helped our family reach our goal of designing and building the most efficient home possible. Funds from this program helped offset upgrades in our HVAC system and water heater that would have been extremely difficult to do to otherwise.



Why did you choose not to participate in the Advanced Energy Rebuild program?

- + Not flexible enough. Overemphasis on "electric" versus "green"
- + Can't tell what measures will ultimately lead to rebates until you've made most / all architectural and design decisions.
- + Too many requirements when we were already dealing with way too many things.
- + I was already rebuilding, too many changes needed.

- + Didn't know if we qualified, didn't know if we would have the money needed to qualify with certain build features needed, and builder not supportive of the idea.
- + Started but too difficult to work with CEA so stopped.

- + Too expensive and complicated. Current building code provides sufficient insulation.
- + Felt the extra gains were not worth the incentive
- + Although I would have like to participate the cost of meeting the requirements were much more than the incentive to participate particularly given we were underinsured like most people.
- + Not cost effective