

Advanced Home Upgrade 2019 Incentive Structure

- Must do minimum of 4 measures, 2 of which are shell and 1 HVAC
- \$5,500 maximum incentive per home in CZs 1, 4, 11, 12, 13,16
- \$3,500 maximum in CZs 2, 3, 5

Measure Description	Program Standard	Quantity	Customer Incentive CZs 1, 4, 11, 12, 13, 16	Customer Incentive CZs 2, 3, 5
Shell - Wall insulation	R value \geq 13 (2x4 framing) or R value \geq 19 (2x6 framing), installed per CEC QII Standards.	Minimum 50% total wall area (all walls)	\$500	\$300
Shell - Attic Insulation	R-44 or better, installed per CEC QII standards. Existing insulation maximum R19 in CZ 2, 3, 5. Existing insulation maximum R30 in CZ 1, 4, 11, 12, 13, 16.	100% of accessible attic area (minimum 50% of total attic area)	\$500	\$300
Shell - Floor insulation	R value \geq 19, installed to full-joint thickness, per CEC QII Standards.	100% of accessible floor area (minimum 50% of total floor area)	\$500	\$300
Shell - Whole building/envelope air sealing and Ventilation	0.35 or better ACHn target, 0.5 ACHn minimum performance, achieved in accordance with BPI standards and ventilated per ASHRAE 62.2. (installation of balanced Heat Recovery Ventilation recommended) 1) 15% building leakage reduction (pre vs. post) 2) 30% building leakage reduction (pre vs. post)	800 square foot conditioned area (at 8 ft average ceiling height) minimum		
			\$300	\$200
			\$500	\$300
HVAC - New Ducts and Insulation	Replacement only; R-8 All CZs @ 5% leakage or less. Existing ducts must be 10% leakage or greater to be eligible for upgrade.	100% of accessible ducts; up to 2 systems per dwelling unit	\$500	\$500
HVAC - Cooling	Split AC: SEER 15.0 / EER 12.5 or better Packaged AC: SEER 15.0 / EER 12.0 or better	Up to 2 HVAC systems (total) per dwelling unit	\$500	\$300
HVAC - Heating	Sealed Gas Furnace: 92% AFUE or better Heat Pump: 9.0 HSPF or better		\$500	\$500
HVAC - Ultimate Comfort	Meet 7 Residential HVAC System Commissioning Specifications including Delivered Sensible EER @ 85% or better (85% Delivered Heat for Furnaces)	One system per dwelling unit	\$1000	\$500
Gas Storage Water Heater	0.70 EF/UEF or better	Up to 2 DHWs (total) per dwelling unit	\$300	\$300
Condensing Gas Storage Water Heater	0.90 EF/UEF or better (Sealed Combustion)		\$500	\$500
Electric Storage Water Heater	3.24 EF / 3.09 UEF or better		\$500	\$500
Pool Pump	CEC Title 20 compliant variable speed pool pump replacing existing single or two-speed pump (primary in-ground pool system only; no jacuzzis)	One pool pump per project site	\$500	\$500
Smart Thermostat	EnergyStar certified Smart Thermostats. Must be Wi-Fi enabled and confirmed via test login.	Up to 2 per dwelling unit with corresponding HVAC system	\$100	\$100
Lighting	\$5 per pin-base recessed LED retrofit fixture (Title 24 - JA8 Compliant)	Up to 25 per dwelling unit	\$125	\$125
Per-Project Maximum			\$5,500	\$3,500

Notes:

- Incentive amounts differ based on CEC Climate Zone, customers will be able to look up their climate zone on the PG&E website
- All measures are single measures with a distinct incentive amount
- Incentive amounts are set relative to average post-install metered savings in that climate zone
- Modeling will no longer be required, contractors who use modeling as part of their business process can still upload HPXML files but they will not change the savings recorded or incentives available
- The “Pre-Install” workflow will be eliminated and replaced with a simpler “Funds Reservation” process
- HPHI (Ultimate Comfort) has two incentives; an incentive directly to the contractor (\$1,200) AND an incentive to the customer (\$500 - \$1,000 depending on climate zone).
- CAS testing still applies pre- and post- install

Timeline:

March 31, 2019

Applications must be PRE-INSTALL APPROVED (approved, not just submitted) by 5 pm PST to qualify under the current incentive structure. Approval must have passed Build It Green (BIG) Desktop Review.

April 1, 2019

New application and incentive structure launches.

Dec 5, 2019

All applications approved under the old incentive structure expire if not Post-Install Approved by BIG Desktop Review.

Contractor FAQ:

Overall Policy Questions

Are test-in and test-out forms still going to be required?

CAS and diagnostic (CFM50 [building leakage], CFM25 [duct leakage], etc.) test-in and test-out will still be required. There will always be a test-in and out when we address the pressure dynamics of a home. Also, finding issues with CO and gas leaks early is better than the alternative; flip the conversation to safety and peace of mind. We are working on a digital CAS form for submission directly from the field.

You must use the same method at test-in and test-out, either Duct Leakage to Outside (DLTO) or Total Duct Leakage (TDL).

Can rebates still be assigned to contractor and customer? Where is this selected?

Yes, rebates can be still be assigned to either A) contract signing customer B) contractor C) third-party -- just as they are now. The same form will apply and the contractor will choose the payee in the portal just like the current system. The payee information will be collected on the Post-Install application.

How Will I Create an Application Under the New System?

Program participants will start an application by entering the dwelling address and other fields in the online portal to verify the customer. The Program participant will choose which measures the customer is planning to install and upload the Pre-Install CAS form. After a brief review by BIG Desktop Review the application will be Pre-Install approved. Energy modeling will not be necessary to submit an application.

Are there any minimum out of pocket expenses required for customers (i.e., rebate caps) to participate?

No, there are no out of pocket requirements or rebate caps in relation to customer cost. The total incentive available is capped at \$5,500 for CEC Climate Zones 1, 4, 11, 12, 13, 16 and \$3,500 in CEC Climate Zones 2, 3, 5.

Will we still be receiving realization rate reports? If yes, what will be the basis of the reports as there is no modeled savings?

There will still be information conveyed as average historical savings within the two climate zone groups.

Savings based feedback is planned going forward, but the format and structure is under development. We hope to be able to provide comparison to average historical per project savings relative to actual savings in the form of aggregated savings - more to come on that later. The overall goal is still 1200 kWh and 120 therms per project, average annual savings.

Previously, we only had to do two measures for customers to be eligible for rebates. Do we need to do at least four measures now?

Yes. To be eligible for incentives, you must do at least four measures within a project - with at least two being shell measures and one being an HVAC measure. This program is fundamentally a whole house retrofit program so this requirement is intended to increase per-project impact.

Why are we required to do both shell and HVAC measures together, when many contractors only do one or the other?

Most savings comes from heating and cooling. In order to maximize savings to the customer, it's important to keep as much of the conditioned air inside the building envelope as possible. We have a number of contractors who are building performance contractors and B-license contractors who subcontract. Also, C-license contractors with multiple C licenses may be able to put together an eligible measure combination.

What is the relationship between Advanced Home Upgrade rebates and the BayREN support for Home Energy Score?

The rebates are not delivered concurrently. If a house receives a Home Energy Score (HES) in BayREN territory, you can apply for the HES incentive to BayREN's HES program, while the upgrade measures themselves can only be rebated through BayREN's home upgrade program OR PG&E's Advanced Home Upgrade program.

Will you provide a list of which measures are gas and which measures are electric?

The equipment itself is fuel specific. The other measures are associated with whichever fuel types the customer has.

Why did the program choose to eliminate modeling and move to fixed incentive amounts?

We had three goals with this redesign and a fixed incentive was the only structure that hit all our goals:

1. Align incentive amounts with realized savings at the meter
2. Streamline the application submission process for contractors to make for a faster, simpler process
3. Remove a major barrier to customer participation in requiring an energy model in order to gauge potential incentive

We encourage contractors to continue to model homes as a sales and communication tool. The model will not change incentive amounts available and we suggest you set expectations for modeled savings vs realized savings as the models are tending not to predict savings as accurately as we would like to see unless they are calibrated to customer utility bill data.

Why is the incentive for pool pumps so low when looking at projected energy savings in relation to other measures?

Great question which made us pause and review the savings again. We've raised the incentive for this measure in response.

What type of verification testing will be required after installation, so that we can set customer expectations?

Once the project is complete, a building inspector will need to sign off on the building permit (relevant to energy efficiency upgrade measures work-scope) as usual and submit a copy along with the signed, completed Safety and Quality Acknowledgement (SQA) form. Build It Green may then contact the homeowner to request a Field Quality Control (FQC) inspection to make sure that the installation was done to program standards. In order to minimize the impact on the customer, you can elect to work with our FQC team at test-out.

BIG is not currently planning to change our FQC sampling rate. PG&E may also choose to contact the homeowner for third-party field verification inspection.

The program now has the scope of work value and energy efficiency (EE) measure values split off into two separate lines. How are we supposed to separate out non-EE project costs if we do flat rate pricing?

Your contractor engagement representative can go over your typical scope of work structure to find a way that works best with you. Ultimately, we are trying to get down to the actual installed EE measure(s) cost to the customer. We understand this will be an approximate number as we are not expecting you to expose your profit margins to the customer.

EE Measures cost to the customer is part of our program delivery cost-effectiveness equation and it is the single largest component of this Total Resource Cost (TRC) ratio value. Keeping Advanced Home Upgrade funded long term hinges on showing cost efficiency for ratepayer dollar spent. Making sure we're only recording actual cost for the measures helps us show more accurate and efficient use of ratepayer dollars.

Measure Specific Questions:

Insulation

If attic doesn't have room for R44, if they insulate up to what space allows for, will that measure qualify?

Eave vents would need baffles, but otherwise fill insulation cavity to R-44 wherever possible, and to as close to R-44 as possible when there is less height clearance. Venting is crucial because of potential condensation issues. Typical residential homes need a way to dry out. Additional documentation would be required for attic area(s) that can't achieve R-44 (e.g., multiple depth-measurement and attic-height photos along with work-scope description).

If a customer has a flat roof and are also on a slab foundation, would they still be able to participate in the AHUP program?

Wall insulation is a highly effective energy efficiency upgrade measure. For example, the drill and fill Wall Insulation method can serve as both an insulator and air barrier (building leakage reduction). This could count towards two qualifying shell measures.

When insulating floors with closed cell insulation, would we still need to install it to full-joist thickness?

No, for spray foam insulation, it just needs to meet the R-value requirements set by the program (document on Contract/Scope of Work), and have no gaps in coverages within floor-joist cavities.

Is there an incentive for crawlspace wall insulation?

No. It is not specifically incentivized, but insulating the crawlspace walls will typically help with overall savings to the customer. All savings delivered ultimately show the value of the program and help make the case for continued funding of residential energy efficiency retrofit programs.

HVAC

Which Package HVAC Units are approved models for incentive?

Package units don't meet the heating efficiency requirements, but they can meet the cooling efficiency requirements (15.0 SEER/12.0 EER or better for package units).

If there is a swamp cooler with ductwork, and they replace both HVAC equipment and duct system - would that qualify for the duct replacement rebate?

The cooling equipment measure can be claimed, but swamp cooler duct systems are typically not equivalent to a traditional forced air duct system. Therefore, the duct leakage replacement measure cannot be claimed, unless there is an

existing furnace with its own duct system that is being replaced. If the swamp cooler duct system is damaged, it would still be best practice to repair or replace it for your customer.

For HPHI, there was a recommended best practice to switch out package unit for a split system. Is this required?

Yes, if you are certified, and aiming to claim the HPHI measure. However, this isn't meant to address all scenarios, but on a project where the customer may also be considering a roof replacement, then the opportunity for switching to a split system might make more sense. Meeting HPHI eligibility requires either existing Split Furnace/AC upgrade or switching from existing Packaged Furnace/AC to upgraded Split Furnace/AC.

How are ductless mini splits treated in the program, since you show a heating rebate and a cooling rebate?

If the existing system is all electric, you can claim both the heating and cooling savings. If the existing system is gas and electric, you will only be able to claim the cooling incentive.

We get a number of customers who have a gas furnace and electric air conditioning, and we switch them to a heat pump mini split. Are we able to claim both the electrical heat savings and the cooling savings if the mini split meets both the HSPF and EER requirements?

No, only the cooling. As described in the previous answer (above), due to a rule at the regulatory commission level, we are not able to incentivize fuel switching at this time.

Duct Work

For the duct replacement measure, what are the qualification specifications? Sometimes it is only possible to do a partial duct replacement.

The measure is for duct system replacement. It's possible that less than 100% of the system is accessible, however, all accessible ducts must be replaced and reach 5% or better system leakage to claim the measure.

Did the program consider incentivizing duct sealing? Why or why not?

The decision was made to incentivize replacement only as this ensures that duct insulation is combined with duct leakage reduction. This also helps align with Title 24 requirements for system design and encourages better system supply design.

Poor duct designs lead to high static pressure (typically $>1/2$ " water column), noisy systems, and poor delivery of heating and/or cooling. With high static pressure fan motors typically use more electricity to deliver air than is needed. If poorly designed duct systems are better sealed, it can actually lead to increased electrical consumption.

Are there two incentives for duct work if the customer has two systems?

Yes. If you are replacing two separate existing systems (independent ducted forced-air HVAC equipment -- heat pump or furnace/AC) you can claim that measure twice.

Does duct replacement count as the one required HVAC measure in the four measure minimum?

Yes. New ducts or new HVAC equipment counts (heating and cooling sides of HVAC equipment are counted separately toward the four measure minimum).

Can we install R-6 ducts, bury them in insulation, and claim that they are performing to an R-8 value?

R-8 ducts must be installed regardless of whether they are being buried in attic insulation or not.

Burying ductwork in insulation will conserve additional energy and increase comfort and this is considered a best practice. There are cases when insulation is disturbed after your projects are completed and in those scenarios we need to be able to rely on a minimum R value persisting in order to justify the incentive. When considering the total cost of a whole home energy retrofit the material cost difference from R6 to R8 is marginal and labor costs are typically the same. Also, if R-44 attic insulation is being installed, that measure also qualifies for an incentive.

Smart Thermostats

What qualifies as proof of Wi-Fi connection for a Smart Thermostat rebate?

The easiest thing to do is take a photo of the customer's computer screen or smart phone logged into the thermostat via Wi-Fi. Depending on which manufacturer of thermostat is chosen, there may be other methods. There may be more than one possible method for providing proof of your chosen Smart Thermostat's Wi-Fi connection, but as long as verification of a completed connection can be clearly observed from the photo documentation, then it should be acceptable.

Is there contractor pricing for Smart Thermostats?

We have special contractor rates only for **ecobee** at this time. Negotiations with other brands are ongoing. Please look for future information on contractor pricing in upcoming newsletters.

Does the Smart Thermostat count as an HVAC measure if they have an existing high efficiency system?

Not at this time.

Other Measures

Measures not found on the current list of incentivized items. Why were they not included?

- **Tankless water heaters**
 - Programs have found that many customers don't need to be incentivized to install a tankless water heater and they tend to over-consume energy after one is installed.
- **Windows**
 - Windows are a very expensive measure which occasionally don't provide enough savings to balance out the customer cost. Customers often don't need to be incentivized for window upgrades.
- **Heat pump water heaters**
 - The current efficiency specification of "3.24 EF / 3.09 UEF or better" can only be achieved with a heat pump storage water heater. In order to claim the measure there must be an existing (less efficient) electric storage water heater.
- **Whole house fans**
 - Whole house fans can save energy when properly installed and operated. However, because they depend heavily on user behavior, actual savings can be unreliable and was not under consideration for this round of Program changes.

Customer Qualifications:

What is the minimum amount of time a customer must 'Share their Data'?

One year pre- and post-installation minimum. New homeowners can participate but may not have enough data to contribute to aggregated actual savings feedback.

Can a new homeowner without past energy bills still participate in the program? Is there a minimum amount of time a customer needs to be in a home to participate in the program?

No current minimum. There is a potential policy change coming in 2020 on this but for now they can participate.

If customer has rental properties, what are the logistics for landlord/renter participation?

Same as they are currently. The Program is open to both property owners and renters (with permission from the property owner). PG&E can only issue rebates or incentives to the PG&E Utility Account Holder on record (by default) until that account owner conveys the incentive to someone else via the Customer Payment Assignment Form (CIPA). The CIPA Form is available for download at www.homeupgrade.org/resources/documents.

What are the guidelines for customers with solar (who won't show much change in utility usage pre- and post-project), and customers who decide to get solar after their home upgrade (i.e., reduce before they produce)?

Right now they can participate as normal. That may change in 2020 when we begin screening customers based on potential savings.

What are the eligibility / program qualifications for the following types of customers living in shared territory?

- **PG&E all electric home (no gas or propane)**
- **PG&E electric / other utility gas supply**
- **Other utility electric supply / PG&E gas**

All electric: PG&E all electric customers with no PG&E gas qualify for all electric fuel measures, (no propane fuel measures)

PG&E electric: customers receiving electricity from PG&E qualify for all measures using electric fuel

PG&E gas: customers receiving gas from PG&E qualify for all measures using gas fuel

SoCalGas: customers receiving electricity from PG&E and gas from SoCalGas qualify for all gas & electric fuel measures

Other providers:

Customers receiving electricity from PG&E but gas from another non-SCG provider qualify only for electric fuel measures

Customers receiving gas from PG&E but electric from another provider qualify only for gas fuel measures

When in doubt, the fuel provider tells you what the customer qualifies for (and it has savings benefits derived from that PG&E and/or SoCalGas fuel type).

PG&E Chapter 11 Bankruptcy

PG&E has shared information on their [intended operational plan](#). Please use this language as official guidance for all inquiries.

Program operation is covered in the [FAQ](#).