

Solving the Mystery: How Contractors Approach Heat Pump Sales in California

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ABSTRACT

Federal, state, and utility programs are relying on heat pump technology to reduce greenhouse gas emissions. Heat pump adoption in California currently lags behind other regions of the country. Opinion Dynamics set out to understand how contractors in California approach homeowners seeking to replace their gas furnace or gas storage water heater. Our trained staff posed as homeowners at 30 homes to assess whether (1) a contractor offered a heat pump, (2) which pros and cons they mentioned, (3) whether they offered incentives, financing, or handled permits, and (4) if they investigated the electric supply. Our findings show substantial variation in contractor practices and sentiments, though we see a correlation between participation in incentive programs and the promotion of heat pump equipment. We observed that contractors were more likely to mention drawbacks related to heat pump water heaters compared to HVAC heat pumps. And, we found that important misconceptions still exist among some contractors about heat pumps and their alternatives: that gas tankless water heaters are more efficient than heat pumps and that HVAC heat pumps are less reliable than furnaces because of their year-round operation. Together, our findings inform how homeowners should locate contractors who are likely to sell them a heat pump and suggest areas for contractor training.

Introduction and Study Purpose

Many states and utilities are investing in programs to encourage the installation of heat pumps for space and water heating to meet greenhouse gas reduction and energy goals. While heat pumps have become more common in areas of the country such as the southeast, northeast, and northwest, heat pumps still represent a tiny proportion of the installed base in California: HVAC heat pumps are in 4% of California homes and HPWH are in .4% of single-family homes per the most recent Residential Appliance Saturation Survey (DNV GL Energy Insights USA, Inc. 2020). Research in California has shown that the lack of an installer workforce is a bottleneck to getting more heat pumps installed in that state (Loomis 2023). Opinion Dynamics' research has shown that contractors have engaged in risk pricing practices with their heat pump projects, whereby they inflate their project costs as a sort of insurance strategy to cover the potential for unforeseen risks (Opinion Dynamics 2022). In other words, contractors less familiar with heat pumps see them as riskier projects, more likely to yield a customer callback than standard gas-fired furnaces and central air conditioners, and therefore they add to their project bids to compensate for the potential callback and troubleshooting.

These resultant higher costs with heat pump projects, above and beyond any incremental equipment costs, threaten the ability for market transformation and widespread heat pump installations. TECH Clean California is the statewide flagship retrofit heat pump program in California, aiming to transform the California market for space- and water-heating heat pump equipment. At the outset of TECH Clean California in late 2021, there was the expectation that by developing a contractor workforce and incentivizing customers, the scaling of heat pump adoption would help lower heat pump project costs. As demand for heat pumps grows, contractors will become more experienced in this type of work, which will reduce the need for risk pricing. At the same time, manufacturers will ramp up production to meet

the increased demand, resulting in reduced equipment costs. Together, these factors should lead to an overall decrease in the costs of heat pump projects. Once heat pump project costs are at parity with a furnace and central air conditioner replacement, then, it will be a natural choice for homeowners to choose heat pump equipment.

The COVID-19 pandemic and resulting supply chain impacts, however, disrupted the planned chain of events. The cost of cold-rolled steel and other raw materials increased, and the shutdown of manufacturing plants in Asia contributed to shortages of electronic components. These factors, coupled with increasing demand due to electrification policies, increased costs for both space- and water-heating equipment. This situation meant that, instead of seeing equipment costs go down as demand increased, the cost of all kinds of energy-using equipment was going up, those powered by electricity and natural gas. The market transformation that TECH Clean California was expecting to see was now threatened.

Opinion Dynamics is serving as the third-party, independent developmental evaluator for TECH Clean California. This role allowed us to access total heat pump project costs in California. What we did not have, however, was access to commensurate gas project equipment costs. Without understanding how heat pump project costs compared to gas equipment costs, we had a blind spot for understanding how much more the out-of-pocket costs are for homeowners purchasing a heat pump over a like-for-like gas equipment replacement. Therefore, we did not understand how large the incremental, upfront cost barrier would be for heat pump adoption in California.¹

To better understand this issue, we conducted a first-of-its-kind mystery shopping cost study to understand how contractors approached sales and pricing of heat pump projects when presented with a customer seeking to replace their gas equipment. Our trained staff posed as homeowners and met with licensed contractors to talk about replacing gas-powered equipment in 30 homes (20 HVAC and 10 water heating) across California. This method provides an unbiased perspective on how contractors approach heat pump sales.

Study Design and Research Goals

In California, gas-fired furnaces and storage tank water heaters are the dominant systems in single-family homes, installed in about 67% and 90% of homes, respectively (DNV GL Energy Insights USA, Inc. 2020). When these systems need replacing, contractors often opt for like-for-like replacements. This approach is typically quicker, easier, and more likely to satisfy customers—especially if the previous equipment met their needs. Contractors can usually install the new unit in the same location and use a rule-of-thumb sizing method, assuming there are no prior complaints about comfort or hot water availability. In contrast, switching to a different technology, such as a heat pump, introduces more complexity. It may require customer education and an adjustment period, as heat pumps operate differently and may deliver performance in unfamiliar ways (Opinion Dynamics 2023).

On top of these complexities, when performing fuel substitution, the contractor may encounter an electrical panel that does not have enough capacity to accommodate the heat pump's electric load. Upgrading an electrical panel or conducting panel optimization can add to project costs, may necessitate subcontracting to an electrician, or require an additional permit. Therefore, our presumption was that when confronted with a gas replacement project, contractors are likely to pursue a gas replacement option and may inflate costs associated with heat pump projects, if they were even willing to install one.

To investigate contractor practices selling and pricing heat pumps, we trained 11 of our staff to pose as homeowners at single-family homes with aging gas-fired furnaces and gas storage water heaters to get replacement project bids. These homes were throughout California, in each of the state's three

¹ We collected project cost data and the incremental cost findings will be published in late 2025. Cost findings are not the focus of this paper and are therefore not presented here.

climate regions, and ranged in size, whether they had solar photovoltaic (PV) panels, and whether they had open slots in their electrical panel. See Table 1 for a description of the homes included in the study.

Table 1. Description of Home Characteristics

Category	Count of Water-Heating Homes (n=10)	Count of HVAC Homes (n=20)
Square Footage		
1,001 to 2,000 sq. ft	4	11
2,001 to 3,000 sq. ft	6	8
3,001 to 4,000 sq ft	0	1
Age of Existing Gas Equipment		
Under 4 years old	3	2
4-6 years old	3	0
7-10 years old	1	0
Over 10 years old	3	18
Existing Water Heater Tank Size		
Tankless	1	N/A
40 gal	5	N/A
50 gal	3	N/A
75 gal	1	N/A
Air Conditioning Present		
Yes	N/A	12
No	N/A	8
Electrical Panel Status		
With any open slots	4	15
No open slots	6	5
Solar PV		
None	4	11
PV (no battery)	5	8
PV + battery	1	1
Climate Region		
Marine	2	4
Hot-Dry	8	15
Cold	0	1

To secure the homes for our study, we issued a request to friends, family, and colleagues who lived in California, had gas-powered equipment, and were willing to let one of our staff members into their home to meet with up to four contractors. The homeowners participated in a preliminary interview about their home and walked our staff through the home so they knew where the equipment, electrical panel, and other relevant items were. Sometimes, the real homeowner was home at the time of contractor visits and described themselves as either roommates or tenants. The homeowners were provided with the contractors' bids and a \$250 gift card at the end of the site visits.

Contractors were approached to schedule a visit to the home if they serviced the home's area and offered heat pump equipment. To find the contractors, we first looked at the Switch Is On website at

switchison.org. That website houses a contractor lookup tool where the user can specify they are looking for HVAC heat pumps or water-heating heat pumps. The search results also show whether the contractor is signed up to offer heat pump rebates, including TECH Clean California incentives. If we needed more contractors after visiting that website, we performed general web searches and contacted the contractor if their website indicated they offered heat pump equipment. Our staff scheduled with four contractors per house, but occasionally a contractor did not show up, and therefore the number of contractors per house ranged from three to four. When scheduling the visits, contractors were told the homeowner was looking to replace gas-powered equipment.

Our staff mystery shoppers were provided scripts, coached on what to say, and used checklists to record fieldnotes while meeting with the contractors. After the contractors left, the mystery shoppers entered detailed notes into an online data collection form.

The main datapoints that we sought to collect from the contractor interactions included:

1. Whether the contractor or mystery shopper mentioned a heat pump first.
2. The contractors' attitudes toward heat pumps, including pros and cons mentioned.
3. The extent to which the contractor investigated the adequacy of the electrical supply for the heat pump.
4. Whether the contractor offered incentives, financing, or permits.

We analyzed the data between TECH Clean California contractors and those not enrolled in the program separately. Below, we present findings from the on-site visits our mystery shopper staff conducted with HVAC and water-heating contractors, split out into a water-heating section and a HVAC section.

HVAC Heat Pump Findings

Seven trained mystery shoppers met with 79 HVAC contractors at 20 homes. Just over half of the contractors (n=44) were enrolled in TECH Clean California. These visits occurred in June and July of 2024.

Recommended Equipment

Three-quarters of contractors (59 of 79; 75%) brought up heat pumps as an option first, before the mystery shopper did. TECH-enrolled contractors were more likely to mention heat pumps voluntarily (36 of 44; 82%) compared to their non-enrolled counterparts (23 of 35; 66%). Contractors most commonly offered both gas and electric options voluntarily, which was about half of the time (44 of 79; 56%, see Figure 1).

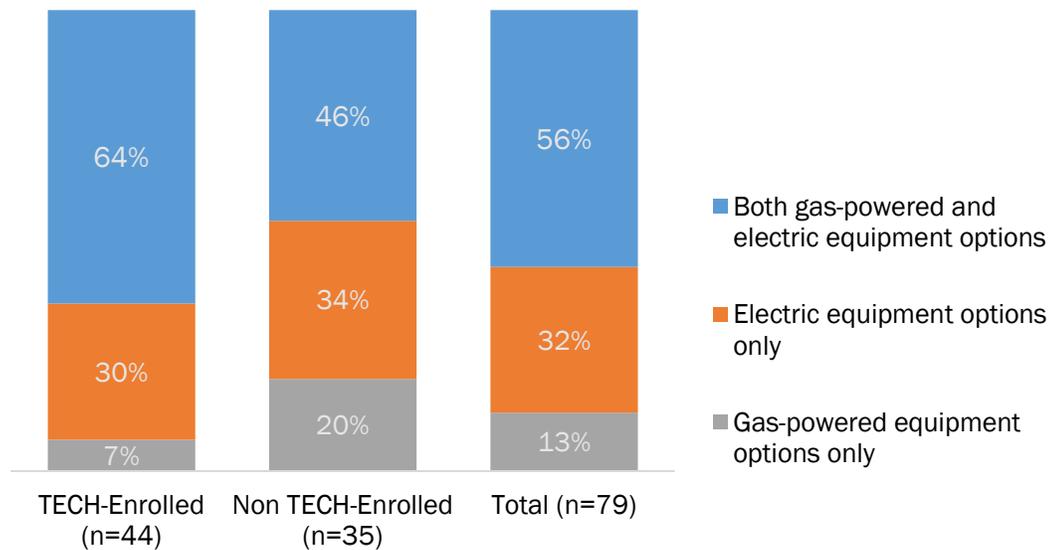


Figure 1. Fuel Options Contractors Offered Voluntarily to Replace HVAC Equipment

We observed notable differences between contractors participating in TECH Clean California and those who were not, suggesting a correlation between program enrollment and a shift away from promoting gas equipment. Twenty percent of non-enrolled contractors voluntarily offered only gas equipment options, compared to just 7% of TECH-enrolled contractors. Additionally, TECH-enrolled contractors were significantly more likely to proactively recommend a heat pump before any discussion of rooftop solar—58% (21 of 36) versus 22% (5 of 23) among non-enrolled contractors. Given that heat pumps run on electricity, a customer’s interest in adding solar should make this option more appealing. However, non-TECH contractors often required more prompting to suggest heat pumps, indicating that TECH Clean California participation may be associated with contractor behavior favoring cleaner technologies or contractors inclined toward cleaner technologies are more likely to participate in TECH Clean California.

Pros and Cons of HVAC Heat Pumps

Contractors mentioned the benefits of HVAC heat pumps more often than they mentioned drawbacks. We elaborate on each below.

Pros of HVAC Heat Pumps Mentioned by Contractors

The majority of contractors (59 of 79; 75%) mentioned at least one benefit associated with heat pumps, including thermal comfort, energy efficiency, and supporting home electrification. Over a third of contractors (31 of 79; 39%) highlighted indoor comfort benefits of heat pump systems, particularly in terms of both thermal comfort and quiet operation. Eleven contractors (14%) emphasized that heat pumps provide both heating and cooling, making them a good option for year-round comfort, with four contractors specifically mentioning the added benefit of cooling. Some contractors (6 of 79; 8%) noted that heat pumps offer more-even temperatures throughout the home, reducing fluctuations common in traditional natural gas or electric resistance systems. Two contractors also shared their perspective that heat pumps maintain a more comfortable humidity level, avoiding the dry air often associated with gas heating.

Many contractors also emphasized the energy efficiency benefits of heat pumps, with a third of contractors (24 of 79; 30%) highlighting how they outperform traditional gas systems. One contractor

noted that heat pumps are three times more efficient than gas furnaces, and others pointed out the added efficiency of variable-speed heat pumps, which offer more precise temperature control and use less energy than conventional gas systems.

Several contractors (6 of 79; 8%) also noted that heat pumps are an efficient all-electric option, aligning with the growing trend of moving away from gas-based systems. While one contractor described people aiming for zero carbon emissions as a small, "extreme" group, others emphasized the broader appeal of electric systems, particularly for homeowners concerned about indoor air quality. Two contractors specifically highlighted the benefits for individuals with respiratory concerns like asthma. Additionally, five contractors noted that new regulations require all new gas furnaces to be low NOx, a feature they described as "unreliable" and "rushed to market," further strengthening the case for switching to all-electric heat pumps. Four contractors also framed heat pumps as a "clean" or "green" option, contributing to sustainability trends.

Finally, seventeen contractors (22%) pointed out that the benefits of electrification and energy efficiency are greatly enhanced when combined with solar power. Heat pumps are particularly advantageous for homeowners who already have or plan to install solar systems, as solar energy can offset the heat pump's energy usage and significantly lower operational costs.

Cons of HVAC Heat Pumps Mentioned by Contractors

About half of contractors (40 of 79; 51%) mentioned at least one concern about heat pumps, including performance in cold temperatures, space requirements, and reliability. The most common concern among contractors (24 of 79; 30%) was related to challenges with the heating performance of heat pumps, specifically their slower heating times, limited output of hot air, and effectiveness in colder climates. Nine contractors (11%) noted that heat pumps take longer to heat a home compared to traditional gas furnaces. Gas furnaces can quickly blast hot air into the home, while heat pumps rely on extracting heat from the outside air, which can be a slower process, especially in colder weather. As a result, five contractors noted that the heat provided by heat pumps is often cooler compared to the hotter air produced by gas furnaces, which may be uncomfortable for individuals accustomed to higher temperatures. Additionally, several contractors (4 of 79; 6%) highlighted that heat pumps may struggle to provide sufficient warmth when temperatures fall below 30 degrees Fahrenheit, and some contractors even cautioned against relying solely on heat pumps as a heating source in such conditions. One mystery shopper shared that even after they brought up cold climate heat pumps, the contractor said he "wouldn't install a heat pump as the sole heating source." Seventeen contractors (22%) recommended leaving the existing gas furnace as a backup heating system.

Eleven contractors (11%) also expressed concerns about the placement of heat pump units and space requirements. Some contractors cited concerns about placing the indoor unit in areas with limited space, which could necessitate additional work and installation costs. Contractors also highlighted challenges with outdoor unit placement, particularly related to permitting issues in areas with special jurisdiction rules that limit expanding the home's footprint. As a result, the outdoor unit may need to be placed in less-than-ideal locations, such as under a deck with insufficient vertical clearance or near a neighbor's home, where the noise could be problematic. Four contractors mentioned concerns with noise, and one said that the mystery shopper's specific location had a noise ordinance that no heat pump unit compressor could pass.

Finally, five contractors raised concerns about the reliability of heat pumps, citing their perceived shorter lifespan and higher maintenance needs compared to traditional systems. One contractor stated that they believed heat pumps typically last 10-12 years, whereas furnaces and air conditioners can last 15-20 years. Another contractor explained that this reduced longevity is because heat pump compressors are used year-round for both heating and cooling, unlike furnace and AC systems, which are seasonal (the reader should note that this is a misperception). Additionally, one contractor highlighted the complexity of heat pump systems, suggesting that their increased maintenance requirements and lower reliability

could be a concern, particularly for landlords looking for a more dependable, low-maintenance option, which seems to be their opinion instead of a fact.

Electrical Supply

About three-fourths of contractors (57 of 79; 72%) inspected the adequacy of the wiring, electrical panel space, and/or service capacity during their visit. Nearly half of the HVAC contractors (34 of 79; 43%) indicated that the home would need electrical upgrades to accommodate a heat pump. About one-quarter of contractors (18 of 79; 23%) said they would need to install new wiring, such as running 220V or 240V lines from the electrical panel to the heat pump's indoor or outdoor units or replace damaged wiring.

Less than half of HVAC contractors (34 of 79; 43%) discussed the electrical panel with mystery shoppers during their visit. These discussions did not necessarily indicate that an upgrade was needed; in many cases, contractors noted that the existing panel had sufficient capacity. In fact, only three contractors (4%) mentioned that the existing electrical panel would need to be optimized to accommodate the additional load from the heat pump system. Only one contractor (1%) noted that a full electrical panel replacement would be necessary due to insufficient electrical capacity; while others (3 of 79; 4%) suggested that the homeowner should consider upgrading their electrical panel in the future because it was either old or small.

When asked who would perform the electrical modifications needed in the home in order to install a heat pump, over half of the contractors (35 of 42; 83%) indicated that they were able to complete the necessary work themselves; only a minority (6 of 42; 14%) required the homeowner to hire someone else to do the work.²

Financing, Incentives or Permits

More than half of the HVAC contractors (48 of 79; 61%) mentioned incentives, rebates, or tax credits for electric equipment without any prompting from the mystery shopper, and no contractors mentioned incentives for gas equipment options. Most contractors discussing incentives, rebates, or tax credits were TECH-enrolled contractors (31 of 48; 65%).

About half of the HVAC contractors (43 out of 79, or 54%) mentioned permits or Home Energy Rating System (HERS) raters. The quotes for permits and HERS/energy testing varied widely, with contractors offering prices ranging from \$500 to \$3,000. Some contractors (6 of 79; 8%) indicated that permits were not required, while others stated they were necessary to qualify for incentives or rebates. A few contractors steered the mystery shoppers away from getting a permit because it could get expensive and require additional work, with one stating it could "trigger a whole slew of house renovations to bring it to code."

Over half of the HVAC contractors (45 of 79; 57%) offered financing options to the mystery shopper. The most common method (18 of 45; 40%) was discussing the options verbally, while nearly a third (13 of 45; 29%) included financing details in the quote, while about a quarter (12 of 45; 27%) offered both options—through the quote and verbally. Twenty-four contractors offered terms between 6-36 months with zero interest. Five contractors mentioned the financing would be through a "Go Green Home" loan, which has interest rates between 4% to 6% depending on the length of the loan.

² For 15 of the 57 contractors that inspected the adequacy of the electrical supply, the mystery shopper was unable to find out who would perform electrical work.

Water-Heater Findings

Across the ten homes, our eight mystery shoppers met with 37 water-heating contractors. Of those contractors, ten were enrolled in TECH Clean California. One home had a tankless gas water heater while the other nine homes had a gas storage water heater.

Recommended Equipment

Similar to HVAC, contractors most often offered both gas-powered and electric water heaters on their own without prompting (21 of 37; 57%). Contractors enrolled in TECH Clean California were again more likely to offer electric options, though we caution the reader that this is a small number (3 of 10 compared to 5 of 27 non-TECH enrolled contractors). See Figure 2 for a breakdown of fuel options offered by the 37 water-heating contractors.

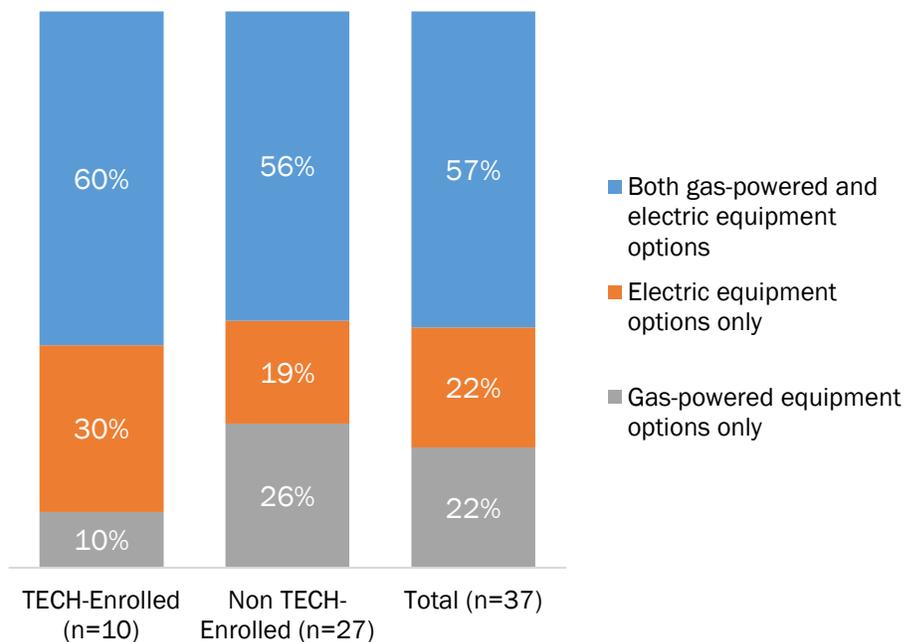


Figure 2. Fuel Options Contractors Offered Voluntarily to Replace Water-Heating Equipment

Contrary to HVAC heat pumps, water-heating contractors were unlikely to be the first to mention a heat pump as an option. The mystery shopper introduced the heat pump water heater (HPWH) as an option about two-thirds (25 of 37; 68%) of the time. Contractors enrolled in TECH Clean California were slightly more likely to mention a HPWH unprompted (4 of 10; 40%) than those not enrolled in the program (9 of 27; 30%).

Gas tankless water heaters came up in conversations much more frequently with contractors who were not enrolled in TECH Clean California (74%) compared to those who were (30%). Gas tankless water heaters were the contractors' most highly recommended equipment due to their perceived efficiency and lower price than HPWHs. While nine contractors (24%) recommended gas tankless water heaters, only two (5%) said HPWHs would be the best option, citing their efficiency. Instead, a handful of contractors (5 of 37; 14%) suggested electric storage water heaters for homeowners considering a switch to electric systems.

Although 12 contractors (32%) initiated discussions about HPWHs, 10 of them mentioned the HPWH only after the mystery shopper expressed interest in getting solar PV. Two contractors discussed a HPWH before mentioning solar.

Pros and Cons of HPWHs

Contractors mentioned drawbacks of HPWHs more often than they mentioned their benefits. We elaborate on each below.

Pros of Heat Pump Water Heaters Mentioned by Contractors

About half of the contractors (18 of 37; 49%) discussed benefits associated with HPWHs. Contractors who discussed the benefits of HPWHs highlighted a variety of advantages, particularly in relation to energy efficiency, cost savings, and compatibility with solar energy systems.

The most frequently cited benefit was the compatibility of HPWHs with solar power. Eleven contractors (30%) noted that HPWHs are well-suited for homes with existing PV systems, as they can rely on the grid and lower electricity costs. Some contractors noted that the cost of heating water with electricity is often offset by the savings from solar, particularly in areas with high utility rates.

Additionally, three contractors mentioned that the HPWHs support future electrification goals and help homeowners transition away from gas systems entirely. For instance, two contractors highlighted that electrifying a home is a forward-thinking strategy, particularly in California, where there are ongoing efforts to phase out gas equipment.

Contractors also highlighted the energy efficiency and reliability of HPWHs as key benefits. Five contractors (14%) emphasized the significant energy savings, with one noting that HPWHs use only 10-12% of the energy required by traditional gas or electric storage water heaters. Several contractors also pointed out that this efficiency often translates into noticeable savings on monthly utility bills. Alongside energy savings, four contractors (11%) also highlighted the reliability and low maintenance needs of HPWHs. One contractor referenced the generous 10-year warranties offered by many models and manufacturers' support when any issues arise.

Finally, a few contractors (3 of 37; 8%) mentioned that the cooling effect of HPWHs is an added benefit in hot climates. They explained that during operation, the heat pump expels cool air, which can lower the temperature near the HPWH. This cooling effect can increase comfort levels in areas like garages, where many HPWHs are installed in California.

Cons of Heat Pump Water Heaters Mentioned by Contractors

A greater number of contractors (29 of 37; 78%) raised concerns about HPWHs. Contractors that the mystery shopper perceived as "skeptical" of or "against" HPWHs tended to focus primarily on concerns, while those with a "supportive" or "champion" attitude were more likely to discuss both the benefits and the concerns. The most frequently mentioned issues were space requirements and hot water supply. Other challenges included difficulties accessing rebates, reliability concerns, and noise or vibration issues.

Space limitations were the most common concern among contractors, with twelve contractors (32%) accurately noting that HPWHs were larger than the existing gas water heaters and would take up more space in the home. Contractors noted that HPWHs are usually sized larger to accommodate hot water demand and often require additional clearance around the unit. This added space requirement was especially problematic in homes with tight configurations, and several contractors mentioned that the unit would need to be relocated if switching to a HPWH.

Another key concern was the hot water recovery rate. Ten contractors (37%) expressed valid concerns that HPWHs have slower recovery times than traditional gas or electric models, which can be problematic for households with high hot water demand, such as homes with larger families. In some

cases, contractors recommended opting for a larger unit, such as an 80-gallon model, to ensure there was sufficient hot water available. However, opting for a larger unit presented its own set of challenges, including higher costs and the need for more space, which not all homes could accommodate.

Contractors also highlighted issues related to reliability and noise/vibration. Five contractors (14%) raised concerns about the reliability of HPWHs, mainly due to their personal uncertainty of the long-term performance of the technology. Finally, four contractors (11%) noted potential noise and vibration issues, warning that the sound generated by HPWHs could transmit through walls and disrupt living spaces, including bedrooms, which was also found in the Opinion Dynamics (2023) study.

Electrical Supply

About half (21 of 37; 57%) of contractors inspected the homes' wiring, electrical panel, and/or service capacity during their visits. TECH Clean California-enrolled contractors were much more likely to inspect the home's electrical systems (8 of 10; 80%) than non-enrolled contractors (13 of 27; 48%).

About three-quarters (28 of 37; 76%) of contractors said they would need to upgrade the home's electrical systems to accommodate a heat pump water heater. This typically involves ensuring the home's electrical panel can support the increased load and installing new circuits and wiring. In a minority of cases, contractors mentioned that the home would require a complete panel upgrade to handle the new system, especially if the existing panel was outdated or overloaded. Other contractors emphasized the importance of adding a dedicated 220V circuit and wiring from the panel to the location of the new HPWH, with additional costs for hiring an electrician. Four contractors also mentioned the option of 120V HPWHs, which could plug into existing outlets, but two of those contractors recommended against them because they take even longer to heat water. Only a third (10 of 33; 30%) of contractors who indicated that electrical upgrades would be necessary stated they could complete the work themselves.

Financing, Incentives, and Permits

Less than half (16 of 36; 44%) of the water-heating contractors voluntarily mentioned incentives, rebates, or tax credits for water heating equipment. Contractors enrolled in TECH Clean California were more likely to bring up incentives voluntarily. Specifically, 78% (7 of 9) of TECH-enrolled contractors mentioned electric or gas incentives, compared to 33% (9 of 27) of non-TECH-enrolled contractors.³ Both groups were more likely to mention electric incentives than gas incentives, but TECH-enrolled contractors who mentioned incentives all mentioned electric incentives, while two also mentioned gas incentives. In contrast, non-TECH-enrolled contractors mentioned electric incentives 30% of the time and gas incentives 19% of the time. Six contractors (16%) expressed uncertainty about the availability of rebates for HPWHs, citing pauses or shortages in funding, with one contractor describing the rebates as "unstable."

The majority of contractors (25 of 37; 70%) did not offer financing options to the mystery shoppers. Of the 12 contractors that offered financing, half verbally mentioned financing options and one-third provided financing as an option in the quote. Five contractors offered 12-24 months of 0% interest, and two offered rates between 10% and 15%.

Eleven contractors (30%) mentioned permits or HERS testing. Two of those contractors said that permits were optional depending on whether the homeowner wanted one, while the other nine remaining contractors said a permit would be required. In actuality, most, if not all California jurisdictions require permits for HPWH installations, which come with extra cost and an extra visit from the HERS rater.

³ We are missing data for one TECH contractor on this topic, that is why it is reported out of 9 instead of 10.

Summary and Conclusions

This study's results confirm that there is substantial variability in the way contractors approach projects with single-family customers seeking to replace gas-powered equipment. The findings also suggest that contractors enrolled in incentive programs approach heat pump sales differently. If a California homeowner is seriously considering a heat pump, they should locate a contractor who participates in an incentive program. Websites that promote home electrification are a good place to start. Although, as we learned through this study, even if a contractor promotes heat pumps on their website, that is no guarantee that the contractor will offer a heat pump or investigate the adequacy of the electrical panel to accommodate it.

The markets for space-heating and water-heating heat pumps are clearly distinct, with contractors more likely to offer HVAC heat pumps unprompted than water-heating models. In both cases, participation in TECH Clean California increases the likelihood that contractors will recommend heat pump technologies without being prompted and discuss incentives, rebates, and tax credits with customers. Additionally, when a home has, or is expected to have, a solar PV system, contractors are more likely to present a heat pump as an option.

Contractors discussed a variety of pros and cons with the mystery shoppers. Cons across HVAC and water heating heat pumps included that the heat pumps can be noisy, larger, and not heat the air or water as fast as traditional equipment.

A majority of contractors offered gas tankless water heaters as replacements for the gas storage tank water heater due to their lower upfront cost and a perception that they are highly energy efficient. If market transformation for HPWHs is to be achieved, tackling contractors' perceptions of tankless water heaters will be necessary.

Contractor perceptions of HVAC heat pumps are mixed. A minority view them as less reliable due to their year-round operation, unlike traditional systems that work far less often. However, other contractors actively encouraged mystery shoppers to consider heat pumps, citing concerns with the ultra-low NOx furnaces now required in some jurisdictions. Contractors also highlighted several advantages of heat pumps, including compatibility with solar PV systems, improved thermal comfort and indoor air quality, and greater energy efficiency. If the market for heat pumps in California is to catch up to other places in the US, addressing contractors' negative perceptions of heat pumps will be necessary. Incentive programs are helping move the needle, but additional contractor training is necessary to address their remaining concerns.

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