Attachment D: Heat Pump Market Readiness and Program Enhancements

This appendix responds to City Council direction[1] to:

- Improve the EcoHome program for heat pump installations
- Assess EcoHome and contractor incentives to inform potential Reach Code updates
- Conduct enhanced engagement and education for homeowners and contractors

It also provides an update on upcoming Bay Area Air District zero-NOx appliance regulations and describes how SJCE programs are preparing the community and workforce for implementation.

Key findings from program data and market analysis include:

- Adoption of heat pump HVAC and water heating systems in San José are growing, but heat pump water heater adoption remains low.
- Upfront installation costs remain the primary barrier to wider adoption, particularly for water heating.
- Upcoming Bay Area Air District zero-NOx appliance regulations are expected to significantly increase demand for heat pump water heaters beginning in 2027.
- SJCE programs can help prepare the market through incentives, contractor development, and customer education.
- Staff will continue to collect market data—including installation costs, contractor capacity, program participation trends, customer satisfaction, and post-installation bill impacts—to inform future policy discussions.

Current SJCE Resources Supporting Heat Pump Adoption

SJCE provides resources to support homeowners at every stage of choosing a heat pump—from learning about the technology through community education, to exploring options with the Go Electric Advisor service, Incentive Finder tool, and the EcoHome Network of vetted contractors, to moving forward with installation through EcoHome Rebate and EcoHome Payment Plan (Table 7). SJCE also supports contractors through information sharing and training to help expand local capacity for heat pump installations.

[1] Memo from Mayor, Candelas, Cohen, Mulcahy & Tordillos, December 2, 2025

Table 7. SJCE homeowner support for heat pump adoption

Stage	Resources
Awareness	• Heat pump education: community programming that includes workshops and experiential events, including use of the all-electric home trailer; informational webpages covering heat pumps and the Bay Area Air District's appliance policy • Program marketing: drives awareness of resources; flyers and social media posts about heat pump technology and how to get started on a home electrification journey
Consideration and Evaluation	• Incentive Finder[2] tool: online tool that provides a customized list of rebates based on household location and income • Go Electric Advisor: free service that helps homeowners understand which electric appliances are a good fit for their home, costs, savings, and available rebates and provides step-by-step guidance on switching to an all-electric home • EcoHome Network Directory: online list of contractor contact information to help customers easily find contractors who have experience installing heat pumps[3]
Action	• EcoHome Rebate: rebates for heat pump water heaters; heat pump HVAC systems; battery storage; electric panels; circuit pausers and splitters; prewiring for future electric cooktops, EVs, and dryers; and attic insulation • EcoHome Payment Plan: zero-interest on-bill financing for home electrification upgrades, paid back on customers' electricity bill
Experience	• Communications to optimize bill savings: after customers install their heat pump, SJCE intends to send them communications on rate plan options and enrolling their equipment in Peak Rewards for Smart Homes

Participation Trends and Market Data

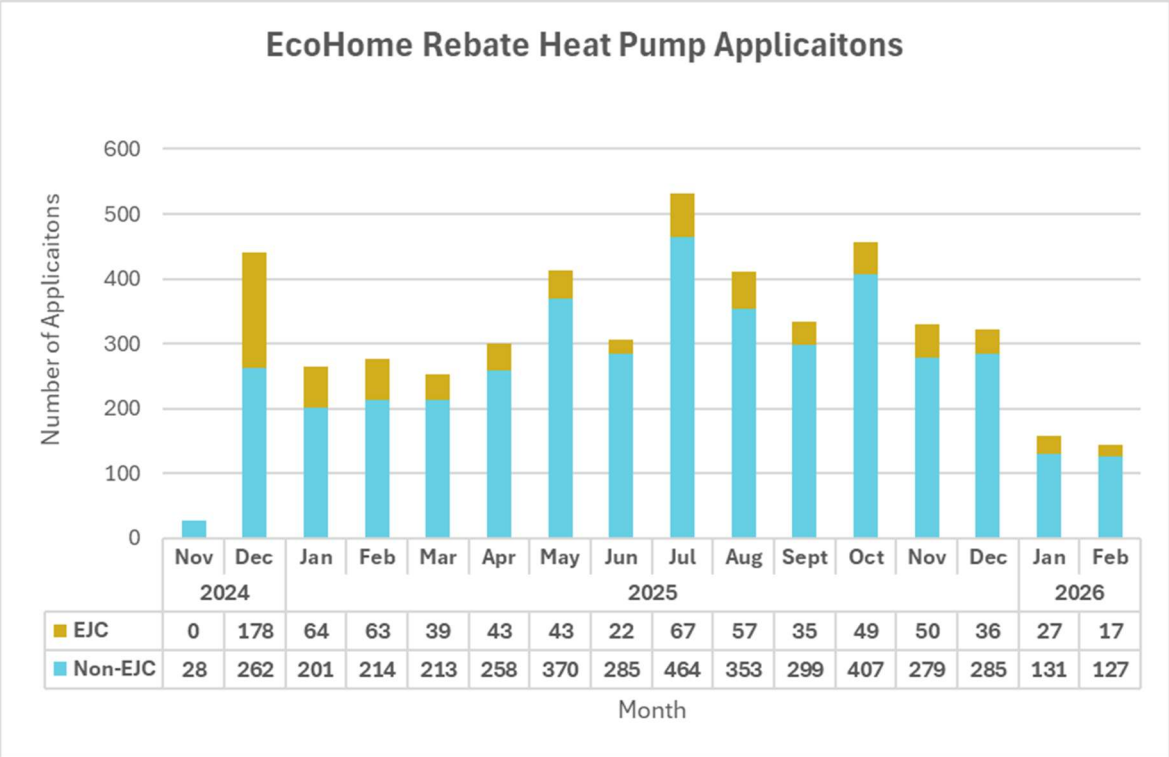
Program Awareness and Participation

Tracking the number of rebate applications submitted each month helps measure program awareness and the effectiveness of marketing and outreach efforts. Increases in applications can indicate that campaigns, contractor engagement, or promotions are successfully reaching customers. Monthly trends can also reveal the influence of external factors, such as expiring tax credits or other rebate programs ending, which may drive customers to act. Figure 1 below shows the month-to-month differences in application volumes for heat pumps in EcoHome Rebate. December 2024 and July 2025 saw increases in applications from program promotion in the SJCE newsletter that is sent to all residential customers. In May, the battery storage program offering launched, driving up applications for heat pumps in addition to battery storage applications, because of general program promotion. In October, contractors were

[2] https://sjce.govcentives.com/
[3] EcoHome Network website (also available in Spanish and Vietnamese).

notified that heat pump heating, ventilation, and air conditioning (HP-HVAC) incentives would be reduced beginning November 1, 2025, which drove up applications prior to the program change. Program participation outpaced projections in calendar year 2025, so resources were focused primarily on application and claim review and program operations rather than on large marketing campaigns. The lower application volumes in January and February 2026 were anticipated because the federal tax credit for heat pump installations expired at the end of 2025. In calendar year 2026, program marketing and promotion will be a larger focus, along with continued heat pump education efforts. Monitoring application volume will continue to help program administrators evaluate what is driving participation and adjust outreach strategies accordingly.

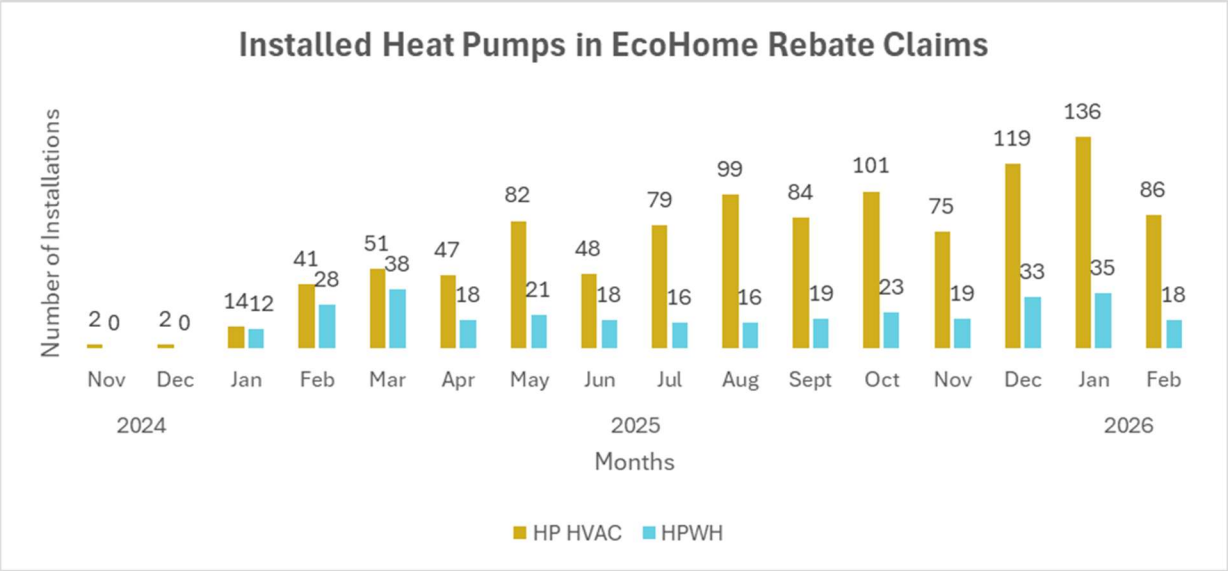
Figure 1. Monthly volume of applications for heat pump rebates in the EcoHome Rebate program for market rate customers as well as environmental justice community (EJC) customers



	Nov 2024	Dec 2024	Jan 2025	Feb 2025	Mar 2025	Apr 2025	May 2025	Jun 2025	Jul 2025	Aug 2025	Sept 2025	Oct 2025	Nov 2025	Dec 2025	Jan 2026	Feb 2026
EJC	0	178	64	63	39	43	43	22	67	57	35	49	50	36	27	17
Non-EJC	28	262	201	214	213	258	370	285	464	353	299	407	279	285	131	127

Not all rebate applications result in installed heat pumps – only about 75% of approved applications complete the program with installed equipment. After an application is approved, projects still require time for scheduling, installation, and inspection before the final claim is submitted. On average, it takes about 74 days from application approval to claim submission. Because of this timeline, monthly application numbers are an early indicator of future installations rather than a direct measure of completed projects in that same month. The number of heat pump water heaters (HPWH) and HP HVAC systems that successfully submitted claims for EcoHome Rebate are shown in Figure 2 below.

Figure 2. Count of monthly installed heat pumps that submitted successful rebate claims in the EcoHome Rebate program, by heat pump technology



As shown in Figure 2, HP HVAC adoption is much higher than heat pump water heater adoption. This trend is consistent across other counties and California as a whole. In March 2025, Canary Media reported that of the roughly 1 million units of HVAC equipment sold annually in California, about 20% are heat pumps and of about 800,000 water heaters sold each year, only 3% to 5% are heat pump models.[4] In a September 2025 survey conducted for the Energy Department by pollster Truth North, 20-24% of respondents reported already having a heat pump water heater or heat pump HVAC, with a 3% margin of error. According to the technology adoption curve, after 15% of a population adopts a technology, the technology moves from early adopters to the early majority. While interest in new technology and personal values may influence some decisions, the primary factors determining whether customers choose a heat pump instead of a like-for-like gas system are the upfront cost of the equipment and the expected ongoing operating costs.

Market Data Collected through Program Participation

Customers can use both the EcoHome Rebate and Payment Plan programs for a single heat pump installation. Through February 2026, the rebate program recorded 1,380 equipment installations, while the Payment Plan program recorded 133. Nearly all Payment Plan participants also used the rebate program, so Payment Plan data represents a subset of the rebate data. Installation costs from both programs are shown in Tables 8 and 9.

Table 8. Average project costs for single-family home electrification upgrades participating in EcoHome Rebate N=164 for HPWH and N=813 for HP HVAC

[4] https://www.canarymedia.com/articles/heat-pumps/california-unveils-first-state-plan-to-unleash-heat-pumps

	25th Percentile	Median	75th percentile
Heat Pump Water Heater	$5,899	$6,800	$7,957
Heat Pump HVAC	$15,376	$17,577	$22,514

Table 9. Average Project Costs for Single-Family Home Electrification Upgrades Participating in EcoHome Payment Plan N=126

	25th Percentile	Median	75th percentile
Heat Pump Water Heater	$5,909	$7,161	$8,447
Heat Pump HVAC	$14,869	$17,452	$22,500

Table 10. Average project costs for gas-powered appliance replacement

Technology	Average cost
Water heater	~$2,500[5]
Furnace and air conditioning	~$13,700[6]

Source:

Table 11. Installation cost gap between gas-powered and electric appliances (includes equipment, permit, and installation costs)

Technology	Median cost gap
Heat pump water heater	~$4,300
Heat pump HVAC	~$3,800

The project cost data shows a clear upfront cost gap between gas-powered appliances and heat pump technologies, particularly for water heating. The EcoHome Rebate program provides reliable data on installed costs for heat pump technologies, but there is less comprehensive data available for comparable gas appliance replacements. Current gas cost estimates are largely based on contractor surveys and industry averages rather than detailed project-level reporting. Because installation costs can vary widely depending on home conditions and contractor practices, additional data on gas replacement projects would improve future cost comparisons.

Electrifying without a panel upgrade

In addition to equipment and installation costs, another common concern when electrifying homes is whether an electrical panel upgrade is required. Electrification can require sufficient electrical capacity and spare breaker spaces in a home's electrical panel. Electricity flows from the grid through PG&E distribution infrastructure to a home's electrical panel, which distributes power throughout the home. Panels are made

[5] https://philbarnettplumbing.com/water-heater-cost
[6] https://opiniondynamics.com/wp-content/uploads/2025/06/TECH_Cost_Study_-_FINAL_Phase_I_Findings_2.12.24_2.pdf

up of a series of circuit breakers that control the electrical current flowing to outlets and appliances. Circuit breakers also protect the home from electrical overloads and current spikes.

Approximately 32% of single-family homes in San José were built after 1978 and are more likely to have a 200-Amp panel. The remaining 68% of homes built before 1978 are more likely to have a 100-Amp panel or lower and may need new electrical panels for safety reasons, especially those older than the 1960s.[7] The tools in Table 12 below enable electrification without upgrading the panel.

However, panel upgrades are not always required for electrification projects. Data from the EcoHome Rebate program shows that most heat pump installations proceed without a panel upgrade. Among EcoHome projects completed to date, approximately 6% of heat pump water heater installations and 4% of heat pump HVAC installations pursued an electrical panel upgrade, while 15% of installations including a heat pump water heater and a heat pump HVAC system pursued a panel upgrade. This indicates that in many homes, electrification upgrades can be completed using existing electrical infrastructure or with alternative load-management solutions.

Several technologies can help households electrify without upgrading their electrical panel. These tools manage electrical load within the home, allowing appliances to operate without exceeding panel capacity.

Table 12. Tools that enable whole home electrification without an electrical panel upgrade *(Source: Peninsula Clean Energy Design Guidelines for Home Electrification*[8])

Tool	**What It Does**
Circuit-sharing device	Allows two appliances to share the same circuit (e.g., EV charger and dryer).
Circuit-pausing device	Pauses appliance (typically EV charger) when total electrical draw nears panel capacity.
Smart panel	Monitors and controls electrical load, turning breakers on/off as needed.
120V HPWH	Uses a standard 120V outlet, avoiding infrastructure upgrades.

Utility Bill Impacts

In addition to installation costs, understanding utility bill impacts is important for evaluating the long-term outcomes of electrification programs and the value-add to San José residents. Existing research on heat pump bill impacts shows mixed results, with

[7] Building Electrification Institute, San Jose Building Stock and Housing Analysis, August 2020: https://www.sanjoseca.gov/home/showpublisheddocument/90629/638017001081730000

[8] https://www.peninsulacleanenergy.com/wp-content/uploads/2023/02/Design-guidelines-for-home-electrification-v021023.pdf

some studies focused on the South Bay indicating savings of over $300-$400 per year[9] while other statewide studies indicating between a $37 decrease and a $15 increase each in utility bills in a year.[10] Evaluation of bill impacts as a result of heat pump installations in San José is a long-term goal for Energy Department staff.

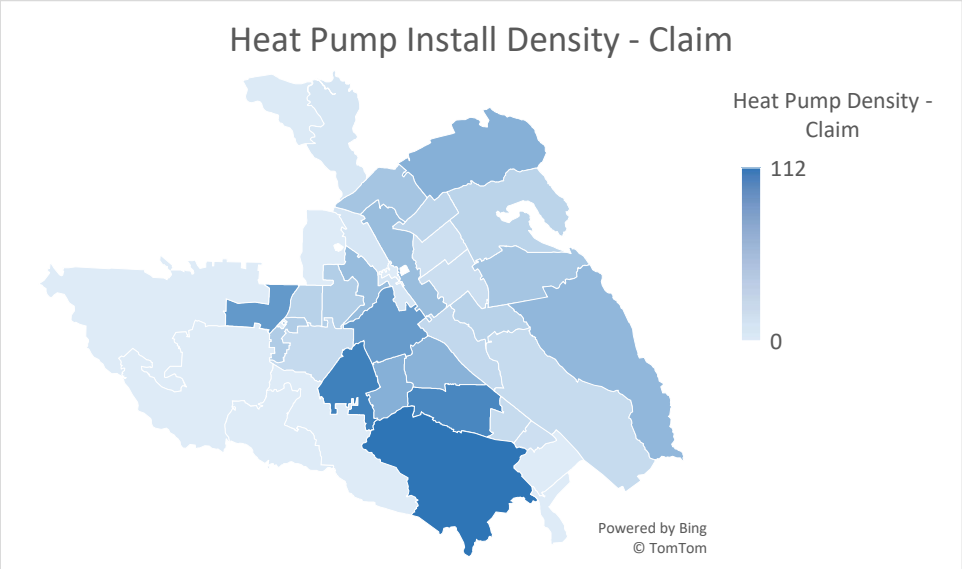
Program Participant Feedback and Demographics

From post-participation surveying, customers rated their overall satisfaction with the EcoHome Rebate program at a 4.6/5. 88% of respondents are satisfied or very satisfied with the Program, and 94% would recommend it. Nearly all respondents have a positive perception of SJCE after participating and felt SJCE was helpful in their home electrification journey.

SJCE EcoHome Payment Plan post-participation survey results found that customers rated their likelihood of recommending the program to a friend, family, or colleague as 4.94/5. Customers are overwhelmingly satisfied with the resources available from SJCE with 72% of respondents qualifying the programs as excellent and 23% as good resources to the community and 94% of respondents said the program had a positive impact on their opinion of SJCE. When asked about the terms of the Payment Plan 94% of respondents thought the loan term was just right but 50% of respondents thought the loan amount was too little.

Figure 3 below shows the geographic distribution of EcoHome Rebate participants with the majority of heat pumps being installed in South San José.

Figure 3. Heat pump installation density by zip code



[9] https://svcleanenergy.org/wp-content/uploads/Bill-Impacts-of-Home-Electrification-Across-the-Bay-Area.pdf
[10] https://opiniondynamics.com/wp-content/uploads/2025/09/TECH-Population-Pathway-Impact-Analysis-Report-FINAL.pdf

Contractor Market Development

Home electrification work in the Bay Area is being met by an estimated 3,000 to 5,000 full-time equivalent workers, mainly in HVAC, general construction, and electrical trades and a smaller portion specialized in engineering, envelope/insulation, and plumbing.[11] In a 2024 building electrification workforce assessment and gap analysis, the Energy Department's consultant Energeia estimated that 424 more full-time equivalent electrification workers are needed locally in 2030 to meet the demand in the installation of electric appliances driven by local rules (namely the Bay Area Air District zero NOx appliance rules) and state building codes, when accounting for upgrading the skills of existing workers.

SJCE has several initiatives to encourage more contractors to install heat pumps.

- To date, 47 contractors are listed in the EcoHome Network Directory and promoted to SJCE's residential customers. Criteria for being listed on directory include completion of at least three EcoHome Rebate projects, no labor code or OSHA violations, and no unpaid wage theft judgments. To promote high road jobs in the electrification transition, in fall 2025 staff added a voluntary additional designation or badge on the EcoHome Network for firms who meet specific high road criteria related to worker training and benefits, including paying prevailing wage, providing more comprehensive healthcare coverage for the worker and their family, affiliation with a State-listed apprenticeship program, and requiring safety training. Staff are currently working with contractors pursuing the high road badge.
- Staff developed a quarterly newsletter to contractors with resources that include rebate and other program resources, trainings and events, and information on how to sell heat pumps to homeowners.
- In 2026, SJCE hopes to award $400,000 in grants for local training providers and educational institutions to purchase electrification training equipment.
- SJCE partners with organizations including the County of Santa Clara and Silicon Valley Clean Energy to host education and training events for contractors each year.
- Finally, in April 2026 SJCE will launch a heat pump incentive for contractors who are new to heat pumps. Contractors who have completed fewer than three projects in the EcoHome Rebate program can get $1,000 for their first six installations, for a total of $6,000. Contractor incentives, those that target contractors rather than end users, can be particularly powerful in transforming markets because they directly influence the professionals who make technology and equipment recommendations for homeowners. By lowering the learning curve and early financial risk for contractors, contractor incentives can accelerate adoption, standardize installation practices, and help build a more confident contractor network.

[11] Sarah Thomason, Chelsey Bryant, Sharon Jan, and Kelly Haines (2024): Bay Area Residential Decarbonization Industry and Workforce Overview

Bay Area Air District Zero-NOx Appliance Regulations

In 2023, the Bay Area Air Quality Management District (now called the Bay Area Air District), covering nine Bay Area counties, voted to ban the sale of water and space heaters that emit nitrogen oxides in 2027 and 2029, respectively. Currently, the only zero-nitrogen oxide space and water heating appliances are electric. The rule is intended to reduce emissions of nitrogen oxides (NOx), which contribute to smog formation and respiratory health impacts, and will apply when existing appliances are replaced at the end of their useful life. A similar regulatory effort was previously pursued by the South Coast Air Quality Management District in Southern California; however, the agency later modified its rules to provide additional flexibility.

The first rule focused on water heaters is set to go into effect on January 1, 2027. The rule applies to gas tank water heaters manufactured after that date, so gas equipment is expected to remain on shelves for the first part of 2027. In October 2025, Bay Area Air District staff proposed broad categories of potential exemptions that could allow flexibility in cases where installing a zero-NOx appliance would cause a financial burden, either due to household income or site-specific constraints that result in unusually high project costs. Specific exemption criteria and implementation details have not yet been finalized. Exemptions are expected to be discussed by the Air District Board in May 2026 and voted on in fall 2026.

Energy Department staff are collaborating with other Community Choice Aggregators to advocate to the Bay Area Air District to consider the needs of residents who will be financially burdened by the rule, scale financing support and financing options for all residents, and contractor training.

Program Enhancements for FY 2026-2027

This section responds directly to Council's direction to improve and assess the EcoHome program. For heat pump HVAC systems, program participation and technology adoption are healthy. For the next fiscal year staff propose to maintain heat pump HVAC rebates at their current level, while pursuing additional marketing to drive program participation while the tax credits are no longer available.

For heat pump water heaters, program participation and technology adoption are still low while the upcoming Air District regulations will necessitate many more installations in San José. To prepare the marketing for the upcoming requirements, the EcoHome rebate for HPWH will increase in spring 2026. Increasing incentives ahead of the regulation timeline is intended to help build workforce readiness and market capacity before the rules take full effect. By supporting more installations in advance, the program aims to ensure that contractors gain familiarity with HPWH technologies, installation best practices, and common site conditions. Higher installation volumes also help distributors and contractors adjust equipment stocking practices, reducing supply constraints and improving availability once demand increases under the new regulations. In addition to higher base incentives, the program will offer limited-time bonus rebates throughout 2026 to create urgency and further accelerate adoption. These short-term promotional incentives are designed to encourage contractors to prioritize heat pump water heater installations. By combining increased base rebates

with temporary bonus incentives, the program seeks to expand contractor participation, strengthen the local supply chain, and prepare the regional workforce for the broader shift to electric water heating.

The EcoHome Rebate program EJC qualifications are intended to offer higher incentives for residential customers living in select geographical communities and for income-qualified customers.[12] From program launch through the end of 2025, only 11% of projects were completed by EJC customers. Staff recommends exploring expanding the definition of EJC to cover more geographic areas to hopefully reach more middle-income residents. In advance of the Air District regulations coming into effect in early 2027 staff plan to evaluate expanding this definition further, provided there are reliable methods to verify income eligibility. Expanding eligibility could help address a key gap in electrification adoption: households that do not qualify for traditional low-income assistance programs but still face significant cost barriers when replacing major appliances. One potential pathway for verifying income eligibility may be through exemptions or documentation processes associated with the Air District rules. Any updates to the EJC definition would need to balance equity goals, program funding availability, and administrative feasibility, ensuring that income verification processes are clear, consistent, and accessible for customers while maintaining the program's focus on supporting communities that face the greatest barriers to electrification.

The EcoHome Payment Plan program will continue to support customers with upfront costs of electrification in addition to the rebate program. An evaluation of the Payment Plan Pilot program will be conducted after the initial $1.25 million pilot funding is fully deployed. Staff will assess participation, repayment performance, and its effectiveness in helping customers manage upfront electrification costs. The evaluation will consider how well the payment plan complements rebates in reducing out-of-pocket expenses and supporting heat pump adoption. Based on the findings, staff will explore potential program adjustments, such as increasing maximum loan amounts or extending loan repayment terms, to ensure the financing offering continues to effectively address upfront cost barriers.

In addition to direct update to the EcoHome incentive program, SJCE is launching a heat pump incentive for contractors who are new to heat pumps. Contractor incentives, those that target contractors rather than end users, can be particularly powerful in transforming markets because they directly influence the professionals who make technology and equipment recommendations for homeowners. The goal of this program will be to increase the number of contractors familiar with installing heat pumps and selling heat pumps to customers. Staff will continue to support contractor education and training opportunities and keep San Jose contractors informed through regular newsletters.

[12] Customers can qualify for the EJC rebate by demonstrating one of the three criteria: enrollment in either SJ Cares, California Alternate Rates for Energy Program (CARE) or Family Electric Rate Assistance Program (FERA); Enrollment in another Income-Qualifying Program; or Households located within a census tract with CalEnviroscreen 4.0 percentile of 60% or more AND verification of household income up to 150% AMI. More information on qualifying criteria can be found on the rebate webpage: https://sanjosecleanenergy.org/wp-content/uploads/2025/08/08-EcoHome-Environmental-Justice-Communities-Qualifications-8.18.25.pdf

In addition to improvements to the rebate program and expanded contractor support, customer education will be a major focus of program efforts moving forward. Many installation decisions are influenced by customer familiarity with the technology, perceived reliability, and expectations about cost and performance. By leveraging EcoHome rebate program participant testimonials, program data on installation costs, and program participant bill impacts analysis, SJCE will be able to build confidence in the community. Education efforts may include explaining how heat pumps work, their efficiency and comfort benefits, expected installation timelines, and how rebates and other incentives reduce upfront costs. By strengthening both contractor engagement and customer education, the program can help ensure that demand and supply develop together. Contractors need customers who are informed and interested in heat pump technologies, while customers benefit from working with contractors who are experienced and confident installing these systems.

Assessment Framework for Future Policy Considerations

In September 2025, staff presented the City Council with a potential reach code that would require installation of heat pump HVAC systems when single-family households replace an existing air conditioner and pull a permit for it. The proposal included exemptions for low-income households and would have applied only to permitted replacements, which occur approximately 1,200 times per year in San José. The City Council ultimately did not move forward with the measure due to concerns about the potential cost burden on homeowners. Since then, staff have continued to collect market data through the EcoHome programs to better understand installation costs, contractor capacity, and customer adoption of heat pump technologies.

Participation data from EcoHome will play an important role in informing any future policy considerations. Staff are tracking the number of heat pump HVAC and heat pump water heater installations, monthly participation trends since the program launched in December 2024, and participation among residents in environmental justice communities. Staff are also monitoring market readiness, including contractor participation in the EcoHome Network. While contractors have not reported significant capacity constraints at current participation levels, additional analysis will be needed to understand whether the local contractor market could support significantly higher demand that could result from a policy change.

Staff are also collecting detailed cost and customer experience data to better understand the financial and practical impacts of electrification upgrades. Project invoices provide detailed installed cost information that allows staff to track the incremental cost of heat pump equipment relative to conventional gas alternatives. Customer surveys assess satisfaction with the EcoHome program. As more projects are completed, staff will expand this analysis to include customer feedback on equipment performance, comfort, energy bills, and the likelihood that participants would have proceeded with an installation without the rebate. The program now has approximately one year of billing data for the earliest installations, and by the end of 2026 staff expect to have hundreds of projects with one year of post-installation billing data, enabling a more robust study of bill impacts.

While program participation is growing, additional data will help determine whether market conditions are sufficient to support future policy changes. Staff will continue to evaluate these metrics—including cost trends, contractor capacity, program uptake, customer survey results, and post-installation performance—as the EcoHome market grows. Updated analysis and findings will be included in the annual Climate Smart San José progress update to Council in fall 2026 to help inform any future policy discussions.