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Witnesses: Various



Exhibit 2: Program Cards

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Program Name: Efficiency and Sustainable Energy Home Program (EASE)		
Program ID: BayREN08 New / Existing: Existing Expected Program Duration: 2028 - 2035		
Portfolio Segment: Equity	Program Implementer Type: REN	Third-Party Program Implementer (applicable to IOUs only): N/A
Applicable Sector: Residential		Customer Group(s): Single Family Residential
Sector Challenges: Comprehensive energy upgrades offer a multitude of benefits to single family low- and moderate-income households (defined as households with an income of 120% AMI or lower), including energy affordability, improved health, comfort, and resilience. Yet this market segment faces high barriers to participation, including financial constraints that are not overcome with traditional market-rate incentives, low digital literacy and language access. Qualifications to access energy efficiency programs are often too restrictive and burdensome, and do not serve households with deferred maintenance issues, such as asbestos or mold, common among low- and moderate-income households. For rental properties, owners are typically not motivated by current programs to implement energy efficiency measures due to the split incentive issue, resulting in renters less likely to benefit from energy upgrades. Property owners often limit renters from participating in efforts that alter the property.		Sector Opportunities (Expected Outcome(s)): EASE Home was designed based on the feedback of over 40 community partners, over 20 energy program implementers and installers, and a household survey of over a thousand Bay Area single-family residents. Identified barriers to program participation are overcome by reducing both upfront costs and the complexity of home upgrades. The program targets underserved households in the Bay Area, especially moderate-income, health-burdened, and limited English proficiency (LEP) populations. The program will continue to test innovative solutions to meet specific community needs and opportunities, and will seek to become a decarbonization leader by providing an easy-to-participate customer experience, while connecting with other decarbonization and healthy home efforts within the Bay Area. EASE Home demonstrates to participants how energy efficiency measures can transform the home into a healthier, more comfortable, and safer environment, and result in energy bill savings. Renters are also able to participate in EASE Home with the property owners' written permissions.
Brief Program Description: (Including customer target, program strategies employed, expected program outcome): EASE Home is a direct install program for income-qualified single-family residential customers providing energy efficiency measures including whole-home air sealing, insulation and duct sealing or repair. An		

Program Name: Efficiency and Sustainable Energy Home Program (EASE)	
Energy Advisor makes a preliminary site visit to provide personalized recommendations and is available for post installation support. Participants receive information about how to properly use the new equipment to ensure the potential for energy savings is realized. The program requires prevailing wages and incentivizes high-road workforce practices, ensuring that the transition to clean energy supports good jobs and economic opportunity. The program utilizes marketing and outreach channels from local county government offices, offering high trust and hands-on support for residents, especially for those with low digital literacy or in-language needs. Campaigns focus on targeted outreach to high-priority communities (e.g. moderate-income, health-burdened, and limited English proficiency populations) through partnerships with local community-based organizations and ethnic media platforms. In 2028, the program plans to distribute do-it-yourself energy efficiency kits as an easy entry point to energy efficiency for potential EASE Home participants and renters. EASE Home plans to add strategic electrification interventions for high-priority households, identified by the program’s home assessment data. Prioritization will be based on existing health conditions (e.g. asthma in the household), housing and equipment conditions (e.g., appliances that are near end-of-life and with potential for fuel substitution), and environmental conditions (e.g., lives in a high pollution and heat burdened area). The program will look for ways to ensure that added electric load will be controllable, enrolled in demand-response programs, and monitored to identify combined electricity and gas bill savings.	
Known Equity Concerns in the Selected Markets (if applicable): Most income-qualified programs do not include moderate-income households (defined as households at or below 120% Area Median Income) despite this group often lacking the capital to finance improvements. Indeed, BayREN’s 2024 household survey found that 37% of moderate-income respondents struggled to afford food or medicine in the past year, with 1 in 4 unable to pay their energy bills at some point in the past year. Maintaining affordable bills while improving home health and comfort remains a challenge for moderate-income households. Low- and moderate-income households tend to live in older homes with higher rates of deferred maintenance, such as pest issues, mold issues, or outdated electric wiring. Most energy efficiency programs do not address these types of issues and many do not serve buildings with these	Proposed Solutions to Equity Concerns (if applicable): EASE Home targets moderate-income households with a program design based on extensive feedback regarding the barriers to this population. In addition to covering a significant portion of the project cost through incentives, EASE Home focuses on upgrades that offer direct benefits in energy savings as well as improved comfort and health, such as energy efficiency and weatherization upgrades. The program offers significant administrative and technical support from enrollment to post-installation, minimizing burdens for the participants. In-language marketing and outreach is utilized, and in-language interpretation services are offered for the customer journey. Through local government channels, the program offers high-trust, personalized enrollment support. Additionally, a portion of the program budget is allocated for deferred maintenance issues that need to be remediated in order to install energy efficiency and clean energy upgrades.

Program Name: Efficiency and Sustainable Energy Home Program (EASE)	
problems, leaving the homes with the highest health and safety risk underserved. Navigating incentive programs can be difficult due to complex technical requirements, administrative burdens, and varying program rules. Language and digital accessibility barriers further limit access for vulnerable populations.	
Intervention Strategy: ● Incentives/Direct Install ● Technical Assistance ● Marketing & Outreach/Information (in language)	Delivery Type: Downstream – Direct Install
Measurement and Verification Methods: Deemed. The program will also be assessed as needed and as written up in BayREN's Annual Evaluation, Measurement, and Verification plan.	Program Total System Benefit (TSB) for 2028-2031: \$14,698,399
Annual Budgets for 2028-2031: 2028: \$11,039,273 2029: \$11,176,533 2030: \$11,229,205 2031: \$11,318,040	Cost Effectiveness (TRC and PAC Test Ratios) for 2028-2031: TRC: 0.33 PAC: 0.36
Anticipated directional and scale changes in budget for years 2032-2035: Anticipate an increase in budget for this program for the 2032-2035 period, dependent on program performance.	Market Actors necessary for success: ● Energy efficiency and electrification contractors, including home performance contractors, electricians, and general contractors ● Community-Based Organizations, including community health organizations and nonprofit affordable housing providers ● Public health agencies ● BayREN counties
High-level description of delivery workforce including necessary scale and its risks: Workforce requirements include contractors and associated support industries such as electricians. There is a sufficient quantity of these workers in the territory to meet anticipated program demand. However, contractors that work throughout the nine county Bay Area rather than just one county would be beneficial. Additionally, contractors that do both energy efficiency and electrification work would be helpful. Additional	

Program Name: Efficiency and Sustainable Energy Home Program (EASE)
workforce needed are program support professionals such as Energy Advisors and training providers. There are specific needs for providers that speak languages other than English.
Near-term Program Output(s) (1-4 years): ● Install weatherization and energy efficiency upgrades, with necessary health and safety repairs, in over 3,600 moderate-income single-family homes. ● Pilot strategic electrification upgrades by targeting households most likely to benefit the most; for example, families facing high health burdens, heat burden, and/or near end-of-life appliances. ● Develop specific solutions to overcome obstacles faced by target audience: moderate-income households, households with a primary language other than English, and health- and pollution-burdened populations. ● Track and report on energy and non-energy benefits associated with home energy upgrades, such as health-related or resilience-related improvements.
Long Term Outcome (5-10 years): ● 100% of program resources are directed to underserved single-family households. ● Between 2028 and 2035, at least 7,200 underserved single-family households in the Bay Area will receive energy-saving upgrades that deliver quantifiable health, climate resilience, and utility bill benefits to residents. ● Program serves as a model for program design that serves moderate-income households, households with a primary language other than English, and health- and pollution-burdened populations. ● Program is seamlessly integrated with housing and health service providers in the Bay Area, and clean energy technologies are the norm for the entire housing retrofit sector.
Does this program interact with other programs in this PA portfolio? If so, describe: Yes. EASE Home interacts with the other residential and cross-cutting programs in the BayREN portfolio. BayREN EASE Home is complemented by BayREN’s cross-cutting WE&T and residential program, BayREN Works. BayREN Works has two complementing components: 1. Youth ambassadors are trained to directly install energy efficiency measures such as high-efficiency lightbulbs and faucet aerators for single-family homes. Qualifying households interested in permanent building upgrades are then referred to EASE Home to continue their energy upgrade journey. 2. Contractors new to clean energy technologies are paired with experienced installers in a mentorship program for hands-on training and incentives to complete their first electrification installs. BayREN Works will draw from EASE Home’s pool of experienced installers to provide mentorship and training. BayREN’s multifamily and single-family programs actively coordinate on projects at 2–4-unit properties. In general, if a 2–4-unit property has individual systems, it can be served by the single-family program.

Program Name: Efficiency and Sustainable Energy Home Program (EASE)	
BayREN EASE Home works with BayREN's Codes and Standards program to increase the capacity of local governments to achieve state and local goals for decarbonization.	
Program Metrics and Indicators (KPIs): • Total number of underserved households within EASE (and GHC) with projects or served by BayREN (equity targeted) (EQ01a) • Energy benefits for underserved customers from EASE (and GHC) – (19, 21, 29, 31, 39, 41, EQ6d, EQ7f, EQ8d) • Non-energy benefits (# customers receiving NEBs) • GHG reductions (EQ05d) • Expected bill savings for underserved customers (EQ2a) • TSB (EQ9a)	
Does this program utilize Integrated Demand Side Management (IDSM)? The program will provide information about IDSM measures and programs to participants but does not provide IDSM technical support.	Link to Existing Implementation Plan, if existing: https://cedars.cpuc.ca.gov/documents/download/3591/mainchange_summary%7Cmain%7Credline/

EASE Home Case Study: Supporting Aging in Place in Marin County

Donna moved into her Novato home during the July 4th weekend of 1975. For more than five decades, the home has served as a long-term residence and gathering place for family and friends.

As housing maintenance and health-related costs increased, Donna began seeking ways to improve home comfort without taking on significant financial burden. She learned about BayREN's Efficiency and Sustainable Energy (EASE) Home program at a local forum hosted by the Marin County Commission on Aging. Donna decided to enroll after learning that the program provided technical guidance, coordinated contractors, and capped participant costs. "I thought the program was a good idea for my home," she said.



Example of the condition of a home attic before EASE Home upgrade includes fully disconnected ducts with asbestos and signs of rodent activity.

Launched in mid-2025, the EASE Home program supports energy efficiency improvements for moderate-income homeowners. To date, the program has served more than 300 participants across the Bay Area, including Donna, who completed her upgrades in October 2025. Her project included attic insulation and whole-home weatherstripping, among other measures. The new attic insulation more than doubled the thermal resistance of the existing material, improving indoor temperature stability throughout the year. Weatherstripping reduced air leakage around exterior doors, lowering drafts and overall heating demand.

Other program participants have reported similar outcomes. One Oakland homeowner shared, "It is definitely warmer inside the house because we have not had to turn our heater on, and that is saving us much needed money." A Napa homeowner highlighted the program delivery process, noting that the "energy advisor helped prioritize upgrades to address the home's most pressing issues while maximizing overall impact."

By managing the full upgrade process—from home assessment through installation—the EASE Home program reduces administrative and logistical barriers that often prevent homeowners from pursuing energy improvements. For residents like Donna and others, these upgrades support lower energy use, improved comfort, and the ability to remain in their homes over time.

Program Name: Bay Area Multifamily Building Enhancements Program (BAMBE)		
Program ID: BayREN02 New / Existing: Existing Expected Program Duration: 2028 - 2035		
Portfolio Segment: Equity	Program Implementer Type: REN	Third-Party Program Implementer (applicable to IOUs only): N/A
Applicable Sector: Residential		Customer Group(s): Multifamily Residential
Sector Challenges: Many existing multifamily buildings lack basic energy efficiency features, have aging, energy-intensive systems and appliances, and have owners who struggle to access the resources and capital needed to make energy upgrades. Owners may also be hesitant to invest in upgrades that deliver bill savings to residents, which makes it difficult to recoup the cost (the “split incentive” issue). These challenges are especially pronounced for small, below-market rate multifamily properties that are affordable to renters earning below Area Median Income (AMI). The vast majority of these properties were built prior to the 1970s (and CA building energy codes), are independently owned, and do not easily qualify for low-income or other programs. Many properties also struggle with deferred maintenance issues, which can make energy upgrades more difficult, expensive, and less of a priority. Another overall challenge for the sector is that residents lack decision-making and financial power to make upgrades to their own homes.		Sector Opportunities (Expected Outcome(s)): Having upgraded more than 700 properties and 50,000 units across the Bay Area, the BayREN Multifamily program (BAMBE) has identified an opportunity to focus on a particularly underserved part of the market: small, below-market rate properties. Often referred to as unsubsidized or naturally occurring affordable housing (NOAH), these properties provide housing for low-income families, with an estimated 19,000 properties—and 350,000 units—representing more than 40% of the multifamily housing stock in the Bay Area. By building on the success of the existing program and focusing a greater share of resources on these properties, the program will advance climate, health, and resilience outcomes for some of the area’s most vulnerable residents, improving the energy efficiency of an aging housing stock and thereby reducing demand on the grid. The program will further explore the specific needs and challenges of this property type to better identify the optimal delivery channel and services needed to successfully upgrade a greater number of these properties while retaining effective elements of the existing program’s design to ensure program goals are met.

Program Name: Bay Area Multifamily Building Enhancements Program (BAMBE)	
Brief Program Description: BAMBE currently delivers no-cost technical assistance and rebates based on project scope and property location. Properties that are located in census tracts burdened by extreme heat, poor air quality, and high housing costs can access higher incentives for measures that directly address these burdens. Rebated measures include energy efficiency and electrification upgrades that save energy, lower greenhouse gas emissions, and improve resident health, safety, and comfort. By guiding property owners through the specification and installation of advanced systems, BAMBE ensures that multifamily buildings, where renters typically have little decision-making power, receive upgrades that directly benefit residents. Since program inception in 2013, BAMBE has served approximately 50,000 units in more than 700 properties—about 6% of the Bay Area’s multifamily stock. Many of these properties have been smaller, independently owned, and/or operated by an affordable housing organization. Leading into the 2028 program cycle, BayREN will be assessing the most effective delivery channels and program offerings to better address the unique needs of small, below market rate properties as they make up a particularly underserved segment of the multifamily sector. Program strategies being considered for implementation in or after 2028 include: incentivizing multi-benefit upgrades; connecting owners to basic repair services or a revolving loan fund; continuing to benchmark properties to monitor post-upgrade energy use and bill impacts; participating in research related to quantifying non-energy benefits (NEBs); piloting new, more targeted marketing tactics; and providing post-installation education to owners and residents to maximize energy savings and NEBs of newly installed measures. Some incentive funds may be used for pilot projects that showcase the potential for innovative energy efficiency technology to scale in the multifamily sector, such as a combination water and space heat pump systems.	
Known Equity Concerns in the Selected Markets (if applicable): Multifamily property owners are often not motivated to replace existing, energy intensive and aging equipment and systems, since the benefit of energy efficiency mostly flows to the renters. And—even if they are motivated to make upgrades—small, below-market rate multifamily properties face unique barriers, including having limited access to up-front capital or financing and owning older building systems with greater basic repair needs (e.g. electrical work that is not up to code) and therefore increased upgrade costs. Residents in these properties are already economically burdened, making higher energy costs from the old equipment particularly challenging.	Proposed Solutions to Equity Concerns (if applicable): The program will address these challenges by providing incentives for energy efficiency measures that deliver both energy and non-energy benefits for owners and residents. This will be paired with high quality technical assistance and/or a direct-install equivalent delivery method to guide owners through the process of upgrading their building and navigating program requirements. The program will also explore the possibility of offering a revolving loan fund and/or partnering with basic repair programs to help owners lower the cost burden of upgrading their properties. BAMBE will continue to serve properties in census tracts burdened by extreme heat, poor air quality, and high housing costs, and will focus program offerings on smaller buildings (under 50 units) and those that are considered below market rate. The program will result

Program Name: Bay Area Multifamily Building Enhancements Program (BAMBE)	
	in a multitude of benefits directly flowing to the residents, including energy affordability.
Intervention Strategy: Primary intervention strategies include: • Technical Assistance • Incentives • Marketing and Outreach	Delivery Type: Downstream Given the unique needs of small, below-market rate multifamily properties, the program may shift to incorporate some elements of a direct-install delivery model beginning in 2028. This will be informed by market research and stakeholder engagement conducted in 2026-2027.
Measurement and Verification Methods: Deemed. The program will also be assessed as needed and as written up in BayREN's Annual Evaluation, Measurement, and Verification plan.	Program Total System Benefit (TSB) for 2028-2031: \$13,305,401
Annual Budgets for 2028-2031: 2028: \$9,289,660 2029: \$9,386,584 2030: \$9,485,452 2031: \$9,586,373	Cost Effectiveness (TRC and PAC Test Ratios) for 2028-2031: TRC: 0.56 PAC: 0.46
Anticipated directional and scale changes in budget for years 2032-2035: A slight increase in budget for this program is anticipated for the 2032-2035 period, dependent on program performance.	Market Actors necessary for success: • Contractors • Heat pump hot water heater and HVAC suppliers • BayREN counties • Community-based organizations (CBOs), including tenant and property owner groups and community health organizations • Public Health Agencies • Program Administrators
High-level description of delivery workforce including necessary scale and its risks: The workforce required for this program includes licensed contractors (especially those serving small multifamily properties and heat pump water heater/HVAC specialists), technical assistance providers, and potentially home repair service providers. There are no current concerns with workforce availability or risks for this program, but the program aims to explore any gaps or needs in the workforce (or in the workforce-owner relationship) through upcoming market research and stakeholder engagement.	

Program Name: Bay Area Multifamily Building Enhancements Program (BAMBE)	
Near-term Program Output(s) (1-4 years): ● Program incentives, education, and technical support maximize energy and non-energy benefits for owners and residents in at least 200 properties. ● Market research and stakeholder engagement informs program delivery methods and offerings to meet the needs of small, below-market rate properties. Findings from this research are shared with other programs/actors serving this segment of the multifamily sector. ● At least 5 pilot projects showcase innovative energy efficiency technology in the multifamily sector. ● Program has explored and documented additional support services, e.g. partnerships with basic home repair programs and/or a revolving loan fund to support comprehensive upgrades.	
Long Term Outcome (5-10 years): ● At least 65% of program resources are directed to small, below-market rate properties. ● By 2035, at least 400 small, below-market rate properties in the Bay Area have received energy-saving upgrades that deliver quantifiable utility bill savings, health and climate resilience benefits to residents. ● The program serves as a model for program design that serves small, below-market rate multifamily properties that can be replicated beyond the BayREN territory.	
Does this program interact with other programs in this PA portfolio? If so, describe: Yes. The BAMBE and single family EASE Home programs actively coordinate on projects with 2–4-units, as a property of this size with a central system can be served by the multifamily program. BAMBE will coordinate with HERE, Codes & Standards, and BayREN Works on training, education, and outreach to relevant stakeholders, including multifamily contractors.	
Program Metrics and Indicators (KPIs): ● # of MF projects upgraded ● # of MF units upgraded ● # of MF units upgraded - equity targeted (EQ01a) ● Energy benefits/savings (common area and in-unit separate) – (52 and 54, lifecycle net kWh and therms, respectively; EQ6d, EQ7f, EQ8d) ● Non-energy benefits (NEBs) delivered (# multifamily units receiving NEBs) ● GHG reductions (EQ05d) ● Bill impacts for multifamily owners and residents (EQ2a) ● TSB (EQ9a)	
Does this program utilize Integrated Demand Side Management (IDSM)? Yes. BAMBE will provide technical assistance for IDSM for interested properties to promote load shifting that reduces peak electricity load, lowers utility bills for residents and owners, and delivers	Link to Existing Implementation Plan, if existing: https://cedars.cpuc.ca.gov/programs/BAYREN02/details/

Program Name: Bay Area Multifamily Building Enhancements Program (BAMBE)	
resilience benefits during extreme weather events or power outages.	

Case Study for the Bay Area Multifamily Building Enhancements (BAMBE) Program: House of Dignity - Empowering Vulnerable Residents in Alameda County

The House of Dignity apartment building, located in Oakland, provides 56 units of housing for some of Alameda County's most vulnerable residents, including veterans, people living in encampments and others experiencing homelessness. In 2024, this 100-year-old property underwent a large electrification retrofit through BayREN's Multifamily Program (BAMBE) and the Low-Income Weatherization Program (LIWP).



The House of Dignity in Oakland, CA went through major improvements with support from BAMBE and LIWP.

The project included replacing outdated heating systems with modern in-unit heat pump HVAC units and a central heat pump water heater. "The contractors were wonderful—they communicated well and treated the residents with respect, which was key to building trust and connection." The upgrades now allow residents to set their own home temperature, offering them a greater sense of freedom and comfort. In addition to these improvements, the building was equipped with solar PV panels, further reducing energy costs and supporting the property's sustainability goals.

Thanks to the vision of the late Executive Director Marguerite, who was committed to reducing costs and positively impacting the environment, the project has not only improved the quality of life for residents but also built a stronger sense of community and pride in the building. "The upgrades have made the building feel more luxurious for both staff and residents," said one team member.

Program Name: BayREN Works		
Program ID: BAYREN09 New / Existing: Existing Expected Program Duration: 2028 - 2035		
Portfolio Segment: Equity	Program Implementer Type: REN	Third-Party Program Implementer (applicable to IOUs only): N/A
Applicable Sector: Cross-Cutting: Workforce Education & Training		Customer Group(s): • New workforce - Disadvantaged, hard-to-reach, and underserved youth and young adults • Existing workforce – new-to-electrification installing contractors • Single Family Residential – renters and homeowners • Multifamily Residential – renters
Sector Challenges: The energy sector faces a workforce shortage, while demand for services increases. Youth and young adults, particularly youth living in underserved and disadvantaged communities, often lack awareness of and access to the career opportunities this sector offers. In addition, they may lack the skills, networks, and experience to help them navigate and compete in the sector job market. In parallel, there are not enough contractors who have the skills and expertise to install the clean energy technologies needed to meet expected demand, especially with the Bay Area Air Quality Management District’s zero-NOx appliance rules anticipated to begin in 2027. Most Bay Area installers and residents are unprepared for the ban on gas water heater sales and installation. Many appliances, such as water heaters, are still installed by residents, handypersons, or contractors without pulling a permit, making traditional outreach via Building Departments or TECH Clean CA less effective.		Sector Opportunities (Expected Outcome(s)): The program will provide energy efficiency jobs to local, low-income youth, as well as paid training and additional work experience with other energy sector employers. Additionally, there will be a focus on contractor readiness to install healthy, safer, and climate-friendly appliances, targeting diverse contractors, by providing hands-on training with experienced electrification contractors. Partnerships with existing workforce training programs to design complementary offerings will be explored. The program will also engage small, local, and diverse contractors and handypersons, since studies show that this group is responsible for the largest share of appliance change-outs for equipment such as water heaters.

Program Name: BayREN Works	
While many workforce programs offer training and education, few programs offer hands-on training and in-field shadowing opportunities.	
Brief Program Description: (Including customer target, program strategies employed, expected program outcome): BayREN Works has two components, one focused on training low-income youth, and the other an electrification mentorship program for contractors. The youth education component provides low-income youth with paid career experience in energy efficiency jobs and other energy-related opportunities, increasing their employability and building the energy workforce. The youth are trained to deliver no-cost home visits, including an assessment and the installation of energy- and water-saving measures, for renters, multifamily residents, and underserved single-family residents. Measures include low-flow showerheads, power strips, LED light bulbs, and window film. In this Business Plan cycle, Climate Careers will continue outreach targeted to hard-to-reach, underserved, and disadvantaged communities. Post-summer, the program aims to continue 80% of these youth on to paid externships with 40-50 employers, at least 40% of which will be energy- or climate-focused. The electrification mentorship program provides electrification workshops, connects contractors who are new to electrification technologies with experienced mentors, and offers technical assistance to contractors to help build confidence with the technology. The program will start with heat pump water heater installations as field-training opportunities for local minority contractors, who first shadow installations and then are given their own projects while receiving prevailing wages. BayREN started testing this approach in 2025, when five local minority contractors received training on their first HPWH projects while earning prevailing wages. The program will scale this approach to the entire Bay Area region and plans to train a minimum of 50 new-to-electrification contractors annually. Starting with heat pump technology, the program will expand to a wider range of emerging technology or technical skills involved in electrification, such as load calculations and panel right-sizing.	
Known Equity Concerns in the Selected Markets (if applicable): Youth, particularly low-income youth of color, are underrepresented in the job market. Further, contractors that typically take on emerging technology first are the biggest and most established firms. Small, local, diverse contractors are often left out and are at risk of being left behind as the market transforms towards HP technology. In San Francisco, for example, 4 firms were responsible for more than 60% HPWH installations utilizing a TECH Clean CA rebate.	Proposed Solutions to Equity Concerns (if applicable): BayREN Works addresses workforce challenges by providing well-paying training and employment (work-based learning) to local, low-income youth as residential Energy Specialists, supplemented with professional skill-building, followed by an introduction to other energy- and climate-related job opportunities and networks through paid internships, engaging local employers seeking workforce talent.

Program Name: BayREN Works	
	The electrification mentorship program will focus recruitment on small, local, minority and women contractor firms.
Intervention Strategy: • Direct Install • Marketing and Outreach/Information • Workforce Development: Training & Employment	Delivery Type: • Workforce Development: Training & Employment • Downstream
Measurement and Verification Methods: Deemed. The program will also be assessed as needed and as written up in BayREN's Annual Evaluation, Measurement, and Verification plan.	Program Total System Benefit (TSB) for 2028-2031: \$596,402
Annual Budgets for 2028-2031: 2028: \$3,390,299 2029: \$3,489,147 2030: \$3,588,678 2031: \$3,692,958	Cost Effectiveness (TRC and PAC Test Ratios) for 2028-2031: TRC: 0.04 PAC: 0.04
Anticipated directional and scale changes in budget for years 2032-2035: Anticipate an increase in budget for this program for the 2032-2035 period based on an increase in customers and youth served, increase in contractor firms served, and an inflation/cost of living adjustment.	Market Actors necessary for success: • Local governments • Local educational institutions and youth-serving organizations • Industry partners • Contractors • Workforce readiness partners
High-level description of delivery workforce including necessary scale and its risks: Necessary workforce includes: • Energy sector employers to serve as externship hosts • Experienced electrification installers to serve as mentors Currently there is no shortage in either of these groups.	
Near-term Program Output(s) (1-4 years): • Install EE, basic electrification, health, resilience, and water-saving equipment in 6,400 local homes (single-family, multi-family, renters, owners, HTR, DAC). • Provide 6,400 households with information, education, and resources for deeper energy savings and electrification/decarbonization.	

Program Name: BayREN Works	
● Train and employ 288 local, low-income youth for future careers in energy efficiency and the clean economy. ● Engage 40 to 50 climate sector employers annually as externship hosts, with at least 40% of those being in the energy sector. ● Train and incentivize 200 new-to-electrification contractors across the Bay Area to do their first electrification install	
Long Term Outcome (5-10 years): ● Low-income youth obtain the skills, experience, and exposure needed to pursue careers in the clean energy and climate sectors. ● Youth employment and earnings increase over time as a result of program participation. ● Customers save energy and water, reduce their utility bills, build household-level resilience, and enjoy improved health, comfort, and safety in their homes. ● Underserved, HTR, and other equity-targeted customers have greater access to and increased participation in other EE, electrification/decarbonization, resilience, and IDSM programs, helping meet state energy goals. ● A majority of Bay Area installers are able to install healthy, efficient, and clean energy technologies necessary to meet local and state climate goals.	
Does this program interact with other programs in this PA portfolio? If so, describe: Yes. BayREN Works' works closely with BayREN's other residential programs, especially the single family program. Youth in Climate Careers will refer residents interested in permanent building upgrades to EASE Home. EASE Home will also facilitate shadowing opportunities for the electrification mentorship program.	
Program Metrics and Indicators (KPIs): ● # DAW contractors served (EQ01f) ● # low-income youth trained and employed as Energy Specialists (EQ01f) ● # contractors completing their first electrification installation ● # of energy sector partners engaged and providing externships (MS01) ● # low-income youth employed in externships with energy sector partners ● # hours of paid employment for local, low-income youth	
Does this program utilize Integrated Demand Side Management (IDSM)? The program does not utilize separate IDSM funds but does support energy efficiency and demand response (DR).	Link to Existing Implementation Plan, if existing: https://cedars.cpuc.ca.gov/documents/download/3620/mainchange_summary%7Cmain%7Credline/

BayREN Works Case Study:

From Intern to Energy Advisor: Ronald's Journey from Climate Careers to EASE Home

Ronald Andrew Catahimican first started his energy career in 2019. As an intern with Rising Sun's Climate Careers program, offered through BayREN, he learned how to conduct in-home energy assessments and install energy- and water-saving devices for renters, multifamily residents, and underserved single-family residents. "I loved showing people how much they could save with the Energy Savings Toolkit," he recalls.

Inspired, he earned a BA in Environmental Studies and Economics at UC Santa Cruz and returned to BayREN as an Energy Advisor for the Home+ program, spending three years helping families choose the right home upgrades. During this time, he earned BPI and LEED certifications.

Ronald is now an EASE Home Energy Advisor for BayREN's single family program. A Bay Area native, he has completed over 300 home site visits, helping residents identify critical improvements for older homes to reduce energy bills and improve comfort, such as attic insulation and air sealing. He enjoys serving his community. "Participants are eager to learn how upgrades can improve comfort and save energy," he shares.

This past fall, Ronald began a master's program in Energy Systems Management at the University of San Francisco. His long-term goal is to work with a local organization or utility and launch his own sustainable energy business. BayREN is proud to see a Climate Careers graduate leading the way in building healthier, more energy-efficient homes.



Ronald supporting an EASE Home customer.

Program Name: BayREN Refrigerant Replacement (BRRR)		
Program ID: BAYREN10 New / Existing: Existing Expected Program Duration: 2028 - 2035		
Portfolio Segment: Equity	Program Implementer Type: REN	Third-Party Program Implementer (applicable to IOUs only): N/A
Applicable Sector: Commercial		Customer Group(s): Small- and Medium-sized Businesses
Sector Challenges: There are many challenges to the Commercial SMB sector, and even more so for programs focused on refrigerant replacement. These include: - Contractors' resistance to upgrading poorly maintained refrigeration equipment. Due to liability concerns, refrigeration contractors will refuse to upgrade systems with signs of damage or deferred maintenance for energy efficiency. - Workforce readiness, as contractors lack experience with natural refrigerants in small refrigeration systems. - Language and cultural barriers. Limited multilingual outreach reduces access and trust. - Financial constraints. Many SMBs operate with thin margins and have limited credit, making energy upgrades difficult without no-cost or low interest financing. - Program design limits. Strict rules, data needs, and pay-for-performance models can exclude small sites. - High program costs. Efficiency contractors usually prioritize large customers, since recruiting and serving small and HTR businesses requires linguistic, cultural, and financial tailoring.		Sector Opportunities (Expected Outcome(s)): The program is designed to overcome these challenges: - Contractors' resistance to upgrading poorly maintained refrigeration equipment – Offer incentives to repair existing remote condensing units or replace them with new equipment. This helps build contractor confidence in installing energy-efficiency measures and increases the likelihood of achieving the intended performance outcomes. - Workforce readiness - Partner with other organizations to provide training on natural refrigerant installations and regulations. - Language & cultural barriers - This will be addressed by deploying local government or community-based organization (CBO) staff with in-language skills to establish clear communication and translate all outreach and marketing material, including websites and case studies. - Financial constraints - Offer no-upfront-cost upgrades, on-bill repayment, or low-interest financing. - Program design limits - Simplify enrollment with the use of a web-based app, to allow more flexible eligibility.

Program Name: BayREN Refrigerant Replacement (BRRR)	
- Contractor trust and capacity. There are few trusted, culturally competent contractors to serve diverse communities. - Workforce equity gaps. Local and diverse refrigerant contractors are often left out due to high barriers to program entry.	- High program costs – Use aggregators or turnkey providers to bundle small projects and reduce admin costs. Explore the viability of the issuance and sale of BayREN Business environmental attribute certificates (EACs are monetized voluntary carbon credits) to offset some of the cost. - Contractor trust & capacity - Train and certify local, culturally competent contractors (aggregators). - Workforce equity gaps – In collaboration with CBOs and local governments, recruit local and diverse contractors in procurement and workforce development.
Brief Program Description: (Including customer target, program strategies employed, expected program outcome): BRRR tackles one of the most pressing challenges facing SMB food stores and florists: unregulated, outdated refrigeration systems that leak harmful refrigerants, waste energy and increase costs. BRRR provides direct-install services that include essential system repairs, leak fixes, environmentally friendlier refrigerant replacements, and energy efficiency upgrades. To ensure lasting benefits, participants receive hands-on maintenance training and a checklist for ongoing system care. The program addresses deferred maintenance that is traditionally a major barrier to energy efficiency, particularly with this customer segment. This approach reduces greenhouse gas emissions, lowers utility bills, and prevents costly emergency repairs, helping businesses remain competitive in a challenging economic landscape. BRRR also helps small businesses transition to refrigeration systems using natural refrigerants. The program prioritizes serving SMB in Low-Income and Disadvantaged Communities. It also serves SMB located beyond those communities if they qualify as Hard-to-Reach businesses, including those with 25 or fewer employees.	
Known Equity Concerns in the Selected Markets (if applicable): Small businesses, especially those that qualify as HTR or those located in low-income or disadvantaged communities, often struggle to access ratepayer funded programs, as the efficiency market has historically overlooked this sector since the potential energy savings are often too small (whether on-bill or claimed) compared to the outreach and recruitment effort needed in HTR	Proposed Solutions to Equity Concerns (if applicable): To address the challenges small and HTR businesses face in accessing ratepayer funded programs, the BRRR Program will deploy targeted outreach through trusted CBO and multilingual outreach materials to improve awareness and participation. Simplifying enrollment processes and offering right-sized incentives for small projects make it easier and more attractive for refrigeration contractors to serve in this sector. Building a trained, culturally competent contractor workforce and enabling

Program Name: BayREN Refrigerant Replacement (BRRR)	
communities to address language, technology and other barriers. Many of these SMBs also face refrigeration repairs due to deferred maintenance and lack the knowledge of how to maintain their systems properly. Small businesses will likely be left behind in the transition to natural refrigerants without technical and financial assistance and will face rising operational costs and stranded assets as existing refrigerant supplies decrease and become more expensive due to federal and state regulations. The risk is a widening gap between this customer segment and the trajectory of state and local energy and climate goals.	contractors to bundle projects can help overcome cost and capacity barriers. Training for contractors can ensure the knowledge and skills needed to install quality natural refrigerant projects. Providing no-cost refrigeration audits and preventive maintenance training for business owners, and financing solutions such as low-interest loans can reduce technical and financial obstacles and all of these will be explored. Finally, tailoring the program design to the specific needs of different Bay Area communities and tracking local impacts can build trust and encourage ongoing participation.
Intervention Strategy: ● Marketing & Outreach, ● Technical Assistance ● Incentives/Rebates	Delivery Type: Downstream
Measurement and Verification Methods: Deemed. The program will also be assessed as needed and as written up in BayREN's Annual Evaluation, Measurement, and Verification plan.	Program Total System Benefit (TSB) for 2028-2031: \$523,071
Annual Budgets for 2028-2031: 2028: \$4,652,038 2029: \$4,708,528 2030: \$5,362,429 2031: \$5,410,310	Cost Effectiveness (TRC and PAC Test Ratios) for 2028-2031: TRC: 0.03 PAC: 0.03
Anticipated directional and scale changes in budget for years 2032-2035: Anticipate an increase in budget for this program during the 2031-2035 period, depending on factors such as program performance, local policy development affecting refrigerant regulations and demand for upgrade support in this target market.	Market Actors necessary for success: ● Refrigeration contractors ● Refrigerant manufacturers, distributors and recyclers ● State and local policy bodies

Program Name: BayREN Refrigerant Replacement (BRRR)

High-level description of delivery workforce including necessary scale and its risks:

This program relies on a network of licensed refrigeration contractors to deliver projects, engage with prospective businesses, and ensure installations meet program standards. As the program scales, the delivery workforce must anticipate the growth needed for both capacity and capability, balancing sales skills, technical skills, and cultural and language competences to serve diverse communities across the BayREN territory.

Necessary Scale

- **Broad contractor base** – Increase the number of licensed refrigeration contractors to cover the volume and diversity of projects.
- **Cultural and linguistic diversity** – Program and sales staff should reflect the diversity of small businesses to build trust and improve participation.
- **Technology readiness** – Advanced refrigeration using low- and no-global warming potential (GWP) refrigerants for sub-small refrigeration systems must be commercially available and affordable.
- **Ongoing training** – Standardized technical, compliance, and program-process training to keep quality consistent as scale increases.

Risks

- **Workforce shortages** – Limited pool of refrigeration contractors, especially small, diverse, place-based firms and those familiar with low- and no-GWP refrigerants, could constrain growth.
- **Lack of available technologies** – Low- and no-GWP refrigerants and the refrigeration systems that use them are commercially unavailable or too expensive for the program.
- **Relaxing standards** – Regulations at state or federal levels are relaxed which decelerates the market for low- and no-GWP refrigerants and their systems.
- **Cost pressure** – Recruiting, training, and retaining contractors at the necessary scale may raise program delivery costs.

Near-term Program Output(s) (1-4 years):

- Complete 1,200 projects by 2031.
- Reduce 1,245,053 kwh (first year) and 5,437,963 metric tons of lifecycle CO₂ emissions.
- At least a 5% in annual reduction in combined energy and refrigeration service costs.
- Participants who are aware of the importance of basic, routine maintenance and know to contact the BayREN Building Performance Advisor for advice.
- Develop a strategy with clear objectives and tactics to create new markets by commercializing the program's benefits (e.g. GHG-emissions reductions, verified destruction of environmentally harmful refrigerants), generating non-ratepayer funding to support the program.

Long Term Outcome (5-10 years):

- Complete over 2,400 projects by 2035.
- Reduce over 1,398,942 kwh (first year) and over 12,000,000 metric tons of lifecycle CO₂ emissions.
- At least a 5% in annual reduction in combined energy and refrigeration service costs.

Program Name: BayREN Refrigerant Replacement (BRRR)	
• Participants who are aware of the importance of basic, routine maintenance and know to contact the BayREN Building Performance Advisor for advice. • Build and implement the infrastructure and market mechanisms to fund part of the program's total costs through the sale of its GHG-emissions reductions and verified destruction of environmentally harmful refrigerants.	
Does this program interact with other programs in this PA portfolio? If so, describe: Yes. There are two programs in the commercial sector. This program is complemented by the BayREN Business program. Both programs coordinate and share best practices during weekly internal meetings.	
Program Metrics and Indicators (KPIs): • Number of equity targeted participating businesses (with one or more of the BRRR services) (EQ01b, EQ11c, EQ12c) • GHG reductions (net lifecycle from kWh and therms from claimed savings) (EQ05h) • Expected First Year Net kWh savings (total claimed and unclaimed), 29, EQ06f • Number of total NEBs (and for context, the number of unique customers with a NEB) • Expected First Year Bill savings (from claimed) (EQ02b) • TSB (EQ09b) • Pounds of refrigerants reclaimed	
Does this program utilize Integrated Demand Side Management (IDSM)? The program does not utilize separate IDSM funds but does support energy efficiency and demand response (DR).	Link to Existing Implementation Plan, if existing: https://cedars.cpuc.ca.gov/documents/download/3675/mainchange_summary%7Cmain%7Credline/

BayREN Refrigerant Replacement Case Study: A small-town store with a big energy win in Bodega, CA

Located in a small town in Sonoma County, Bodega Country Store serves as a local hub offering groceries, locally made products, and everyday essentials to the community. When owner Ariel Coddington began looking for ways to reduce rising utility bills and ongoing maintenance costs, one piece of equipment stood out: the store's walk-in cooler with a 20-year-old refrigeration system.

That's where BayREN's Refrigerant Replacement (BRRR) Program stepped in and provided rebates and technical assistance for a new remote condensing unit, evaporator coils, pipe insulation, door closer, and a more environmentally friendly

refrigerant. In addition to having a more reliable and efficient system that requires less maintenance, Ariel will save an estimated \$450 in utility costs each year. The new refrigerant will result in 1,305 fewer pounds of greenhouse gas emissions from potential leaks annually.

"As a store in a remote area, we rarely see programs like this," said Ariel. "The BRRR rebate provided support I wouldn't have had otherwise and helped me so much with my small business. The contractor and the crew were highly professional."

In addition, the BRRR Program provided Ariel with a free maintenance training, helping ensure the bill savings continue and the new system operates at peak performance. The training equips store owners and managers with simple, do-it-yourself tips that can prevent breakdowns, improve efficiency, and extend the life of refrigeration equipment.

Programs like BRRR are essential to reaching small businesses that have typically been underserved by past incentive programs, particularly those in low-income and disadvantaged communities. By partnering closely with County government staff, the BRRR Program is able to connect with local, small businesses in need of refrigeration upgrades that may lack access to traditional financing or resources.



Facade of the Bodega Country Store.

Program Name: BayREN Business		
Program ID: BAYREN06 New / Existing: Existing Expected Program Duration: 2028 - 2035		
Portfolio Segment: Resource Acquisition	Program Implementer Type: REN	Third-Party Program Implementer (applicable to IOUs only): N/A
Applicable Sector: Commercial	Customer Group(s): Small and Medium Businesses (SMB)	
Sector Challenges: There are many challenges to the Commercial sector, and particularly to Small to Medium Businesses (SMB). These include: • Language and cultural barriers - Limited multilingual outreach reduces access and trust. • Financial constraints - Many SMBs operate with thin margins and have limited credit, making energy upgrades difficult without financing. • Program design limits - Strict rules, data needs, and pay-for-performance models can exclude small sites. • High program costs - Efficiency contractors usually prioritize large customers, since recruiting and serving small and HTR businesses requires linguistic, cultural, and financial tailoring. • Contractor trust and capacity - There are few trusted, culturally competent contractors to serve diverse communities. • Workforce equity gaps - Local and diverse contractors are often left out due to high barriers to program entry.	Sector Opportunities (Expected Outcome(s)): The program is designed to overcome these challenges: • Language & cultural barriers - This is addressed by deploying local government or community-based organization (CBO) staff with in-language skills to establish clear communication and translate all outreach and marketing material including websites and case studies. • Financial constraints - Offer no-upfront-cost upgrades, on-bill repayment, or low-interest financing. • High program costs - Use aggregators or turnkey providers to bundle small projects and reduce administrative costs. • High program costs – Explore the viability of the issuance and sale of BayREN Business environmental attribute certificates (EACs are monetized voluntary carbon credits) to offset some of the cost. • Contractor trust & capacity - Train and certify local, culturally competent contractors (aggregators). • Program design limits - Simplify enrollment with the use of a web-based app, to allow more flexible eligibility. • Workforce equity gaps – In collaboration with CBOs and local governments, recruit local and diverse	

Program Name: BayREN Business	
	contractors in procurement and workforce development.
Brief Program Description: (Including customer target, program strategies employed, expected program outcome): Using a pay-for-performance approach, the BayREN Business program delivers energy efficiency interventions that help small- and medium-sized businesses in disadvantaged communities, low-income communities, and those that qualify as hard-to-reach (HTR) reduce energy use, especially during peak hours, and lower their monthly costs. The program uses a data driven, measure agnostic approach that allows contractors to tailor solutions to diverse business needs, from lighting upgrades to behavioral strategies.	
Known Equity Concerns in the Selected Markets (if applicable): Small businesses, especially those that qualify as HTR or those located in low-income or disadvantaged communities, often struggle to access ratepayer funded programs. The energy efficiency market has historically overlooked this sector since the potential energy savings are often too small to justify the high cost of outreach and recruitment.	Proposed Solutions to Equity Concerns (if applicable): The program design reduces the administrative burden on the contractor by simplifying enrollment processes so they can focus on the customer and not on program paperwork, and incentive levels are set to move the efficiency market to serve SMBs. Marketing and outreach by local governments and CBOs creates warm leads, reducing contractors' recruitment costs. Finally, providing comprehensive, in-language program services builds trust, assist with program services and maintain long-term relationships with program participants.
Intervention Strategy: ● MAP ● Marketing & Outreach ● Technical Assistance ● Incentives/Rebates	Delivery Type: Downstream
Measurement and Verification Methods: NMEC – Population. The program will also be assessed as needed and as written up in BayREN's Annual Evaluation, Measurement, and Verification plan.	Program Total System Benefit (TSB) for 2028-2031: \$6,395,652
Annual Budgets for 2028-2031: 2028: \$5,603,453 2029: \$5,711,517 2030: \$6,377,855 2031: \$6,455,620	Cost Effectiveness (TRC and PAC Test Ratios) for 2028-2031: TRC: 0.28 PAC: 0.28

Program Name: BayREN Business	
Anticipated directional and scale changes in budget for years 2032-2035: Anticipate an increase in budget for this program during the 2031-2035 period, depending on program performance.	Market Actors necessary for success: Installation Contractors, also known as aggregators
High-level description of delivery workforce including necessary scale and its risks: This program relies on a network of contractors, also known as aggregators, to deliver projects, engage with prospective businesses, and ensure installations meet the program’s standards. As the program scales, the delivery workforce must grow in both capacity and capability, balancing sales skills, technical skills, and cultural and language competences to serve diverse communities across the Bay Area. Necessary Scale ● Broad contractor base – Increase the number of contractors across less-represented trades like HVAC and refrigeration, to cover the volume and diversity of projects. ● Cultural and linguistic diversity – Program and sales staff should reflect the diversity of small businesses to build trust and improve participation. ● Geographic coverage – Contractor capacity needs to be available throughout the nine Bay Area counties to ensure equitable access. ● Ongoing training – Standardized technical, compliance, and program-process training to keep quality consistent as scale increases. Risks ● Workforce shortages – Limited pool of aggregators, especially small, diverse, place-based firms, could constrain growth. ● Trust and reputation – If contractors aren’t culturally competent or fail to meet expectations, it could erode trust with small business owners. ● Cost pressure – Recruiting, training, and retaining contractors at the necessary scale may raise program delivery costs.	
Near-term Program Output(s) (1-4 years): ● Achieve an average of 10% annual energy bill savings for each participant. ● Complete 1,105 projects by 2031 with majority in DAC and LIC. ● Reduce 5,272,789 kwh (first year) and 14,727 metric tons of lifecycle CO₂ emissions. ● Increase fuel-substitution (gas to electric) projects to 20% of total annual completed projects.	

Program Name: BayREN Business	
Develop a strategy, with clear objectives and tactics, to create new markets by commercializing the program's benefits (e.g. energy savings, GHG-emissions reductions), generating non-ratepayer funding to support the program.	
Long Term Outcome (5-10 years): - Achieve an average of 12% annual energy bill savings for each participant. - Complete over 2,500 projects by 2035 with majority in DAC and LIC. - Reduce over 5,400,000 kwh (first year) and over 15,750 metric tons of lifecycle CO₂ emissions. - Build and implement the infrastructure and market mechanisms to fund part of the program's total costs through the sale of its energy savings and GHG-emissions reduction outcomes.	
Does this program interact with other programs in this PA portfolio? If so, describe: Yes. BayREN has two complementary programs in the commercial sector: BayREN Business and the BayREN Refrigerant Replacement program. These programs coordinate and share best practices during weekly meetings.	
Program Metrics and Indicators (KPIs): (These could include metrics tracked in program contracts and can be inclusive of Equity or Market Support Indicators and other program KPIs). Examples could include homes electrified, WE&T trainings held, etc.) - Participating HTR businesses (commercial sector) EQ04b , EQ11c , EQ12c - Lifecycle ex-ante kWh net in Hard-to-Reach Markets, 29 - Lifecycle ex-ante Therm net in Hard-to-Reach Markets 31 - TSB - Number of total NEBs (and for context, the number of unique customers with a NEB) - GHG reductions (net lifecycle from kWh and therms from claimed savings) (EQ05h) - HTR participants' expected first-year bill savings (estimated) - Number of aggregators with projects annually	
Does this program utilize Integrated Demand Side Management (IDSM)? The program does not utilize separate IDSM funds but does support energy efficiency and demand response (DR).	Link to Existing Implementation Plan, if existing: https://cedars.cpuc.ca.gov/documents/download/3662/mainchange_summary%7Cmain%7Credline/

BayREN Business Case Study: Energy Efficiency Upgrades for Oak Hill Market in San Francisco

Rising electricity costs have many small businesses looking for ways to reduce expenses. Sami Hatter, manager of Oak Hill Market in San Francisco's Lower Haight, found a solution through the BayREN Business Program. Family-owned for more than two decades, Oak Hill Market took advantage of incentives for a number of energy-efficient upgrades.

"The lighting in the store is much better and brighter, the refrigerator makes less noise, and the whole process was extremely easy!" said Hatter. With the upgrades, Oak Hill Market is on track to save an estimated \$5,000 per year on its electricity bill.

Thanks to programs like BayREN Business, small businesses like Oak Hill Market can make meaningful energy improvements at no upfront cost, reducing operating expenses while creating a brighter, more comfortable space for customers and staff.



Sami Hatter, Manager of Oak Hill Market.

Program Name: Codes & Standards Program		
Program ID: BAYREN03 New / Existing: Existing Expected Program Duration: 2028 - 2035		
Portfolio Segment: Codes and Standards	Program Implementer Type: REN	Third-Party Program Implementer (applicable to IOUs only): N/A
Applicable Sector: Cross-cutting		Customer Group(s): Local government staff
Sector Challenges: To realize the energy savings anticipated by adoption of the Energy Code, projects must comply with the code not only on their plans but also as built. The California Energy Commission and other agencies have acknowledged a lack of comprehensive data on Energy Code compliance rates or an estimate of its cost to Californians. The Energy Code is complex, with multiple manuals, forms, and requirements that vary based on climate zones. This complexity creates compliance and enforcement challenges. Building departments enforcing the code are stretched for capacity and often prioritize life safety code requirements over energy code compliance. To add to this complexity, some types of projects have low permitting rates, making enforcement difficult.		Sector Opportunities (Expected Outcome(s)): Codes and Standards are powerful tools for increasing the energy performance of buildings, with the potential to produce an estimated \$4.8 billion in statewide energy cost savings. Training local building department staff and providing them with resources increases their knowledge, both of the Energy Code itself and of the benefits that it provides. Standardized resources and facilitated information sharing improve permitting procedures and consistency between jurisdictions. Ensuring that code requirements for decarbonization technologies such as heat pumps are understood and expediting permitting removes a barrier to adoption. Local reach codes and energy policies provide opportunities to test requirements at the local level. This can lead to later inclusion in the state code.
Brief Program Description: (Including customer target, program strategies employed, expected program outcome): BayREN's Codes and Standards program provides targeted support for and between Bay Area local governments to increase the energy performance of buildings by improving energy code compliance, increasing adoption of local energy policies, and ensuring that local government needs and concerns are considered when state policies are developed. The program offers trainings to local building department staff as well as resources such as permit guides and technical assistance sheets to improve compliance. Resources currently under development include a toolkit to assist local building departments with heat pump water heater permitting, aimed at improving consistency between jurisdictions in terms of both their processes and enforcement. Trainings and resources are specifically designed to complement those offered		

Program Name: Codes & Standards Program	
by the statewide Energy Code Ace program, and some trainings have been developed and offered in partnership with Energy Code Ace. The Codes and Standards Program also works in the local and state energy policy arenas, providing support for local government staff to develop, adopt, and implement reach codes and other energy policies. This support includes regular policy calls for local government staff to share their experiences and best practices, quarterly Regional Forums and other events, templates and other resources. BayREN members build relationships with building department and sustainability staff within their county, ensuring that staff at all 109 Bay Area jurisdictions are offered BayREN trainings, forums, and resources. The program has strong partnerships with the statewide Codes & Standards program as well as Bay Area CCAs, state agencies, and others.	
Known Equity Concerns in the Selected Markets (if applicable): Low income and disadvantaged community members are more likely to live in older buildings that are not code compliant and that have unpermitted improvements, as well as deferred maintenance. These make code-compliant building upgrades more expensive and challenging, creating a barrier to permitted, code-compliant building improvements and preventing the bill savings and health benefits from the Energy Code from being available to all.	Proposed Solutions to Equity Concerns (if applicable): BayREN's jurisdictional partners work directly with communities and trusted community organizations, allowing them to gather information on existing conditions and challenges to code compliance that can be difficult to obtain. This information can be used to develop approaches for addressing these challenges. Education and resources provided through the program address existing building compliance. Incorporating additional information about these equity concerns can help to improve processes and support efforts towards universal code compliance.
Intervention Strategy: • Training • Permit Guides and other resources • Reach code/policy calls • Regional forums • Peer-to-peer networking and sharing of best practices	Delivery Type: Codes & Standards
Measurement and Verification Methods: This program does not claim savings. It will be assessed as needed and as written up in the BayREN Annual Evaluation, Measurement, and Verification plan.	Program Total System Benefit (TSB) for 2028-2031: N/A

Program Name: Codes & Standards Program	
Annual Budgets for 2028-2031: 2028: \$1,619,702 2029: \$1,693,478 2030: \$1,767,120 2031: \$1,762,143	Cost Effectiveness (TRC and PAC Test Ratios) for 2028-2031: N/A
Anticipated directional and scale changes in budget for years 2032-2035: Anticipate a slight annual increase in budget due to escalation in labor rates, and a periodic larger increase in alignment with anticipated code updates.	Market Actors necessary for success: Local Government staff, including: ● Permit Technicians ● Building Officials ● Building Inspectors ● Plans Checkers ● Sustainability Staff ● Planners ● City Managers ● BayREN county members
High-level description of delivery workforce including necessary scale and its risks: Not applicable	
Near-term Program Output(s) (1-4 years): ● Provide 140 trainings and 16 regional forums, ensuring that 90% or more increase their knowledge as a result ● Support approximately 80 Bay Area local governments with code compliance or reach code/energy policy development and implementation ● Improved permitting processes and consistency for electrification technologies, starting with heat pump water heaters ● Accelerate improvements to existing buildings through development of building performance standards and other approaches	
Long Term Outcome (5-10 years): ● Improved, more consistent permitting processes and higher permitting rates ● Increased awareness of the importance of and benefits of Energy Code compliance ● Increased code compliance both procedurally and, more importantly, in terms of actual energy performance in the field, including for existing buildings in disadvantaged communities ● Reduced energy consumption and improved health and other non-energy benefits as a result of both improved code compliance and adoption of local energy policies and reach codes	
Does this program interact with other programs in this PA portfolio? If so, describe: As a cross-cutting program, there is program interaction with other BayREN programs in the commercial, public, residential, and workforce sectors. All programs share information and approaches between lead	

Program Name: Codes & Standards Program	
staff both informally and during and monthly coordinating circle meetings. The Codes and Standards program coordinates closely with the Targeted Decarbonization Services program, which also provides training to local government staff. In addition, the program also supports other programs' code-related training efforts, such as the need for improved training related to new low-GWP refrigerants in connection with the BayREN Refrigerant Replacement Program.	
Program Metrics and Indicators (KPIs): • Number of jurisdictions receiving code compliance assistance • Number of jurisdictions receiving energy policy assistance • Number of training activities and participants (141 and 142) • Percent of training attendees who increased knowledge • Number of Energy Policy Forum (and event) participants • Percent of Forum attendees who increased knowledge • Number and percent of Jurisdictions with staff participating in a Forum (144 and 145)	
Does this program utilize Integrated Demand Side Management (IDSM)? The program does not offer IDSM measures but does provide training and resources on these measures and related code requirements.	Link to Existing Implementation Plan, if existing: https://cedars.cpuc.ca.gov/documents/download/3587/mainchange_summary%7Cmain%7Credline/

BayREN Codes & Standards Case Study: Highlights from BayREN's Heat Pump Water Heater Permitting Forum

BayREN's Codes & Standards program hosts quarterly forums to support local governments on topics related to energy efficiency, policy, greenhouse gas reduction, climate resilience, and more.

In September 2024, BayREN convened an interactive in-person Forum focused on heat pump water heater permitting. The agenda included a series of interactive stations covering topics that included:



Attendees at the Heat Pump Water Heater Permitting Forum

- Permitting fundamentals
- Air District appliance rules
- Impacts of permitting processes on Zero NOx appliance adoption
- Permit modernization and simplification efforts underway in portions of the Bay Area

Attendees also heard about permitting from three perspectives during a fireside chat that included a homeowner, a contractor, and a chief building official. During small group sessions, participants were able to share the challenges and opportunities encountered in their jurisdictions and to start developing suggestions for improvements. Following the forum, all posters and notes from the day were added to BayREN's website and shared with all who registered to allow for continued engagement.

Forum attendees overwhelmingly noted that attending this forum increased their knowledge, and many indicated they would be incorporating the information shared as they continue to work on this challenge in their own jurisdictions. One attendee noted that the event "fostered a productive dialog about how best to move forward with issues of permitting."

Program Name: Integrated Energy Services Program (IES)		
Program ID: BAYREN11 New / Existing: Existing Expected Program Duration: 2028 - 2035		
Portfolio Segment: Market Support	Program Implementer Type: REN	Third-Party Program Implementer (applicable to IOUs only): N/A
Applicable Sector: Public	Customer Group(s): • Local governments • Special districts • K-12 school districts	
Sector Challenges: Public agency goals and objectives often require cross-cutting approaches that span siloed program offerings. In order to understand and navigate existing and emerging programs, which change rapidly and are often fragmented by technology, funding source, or geography, public agencies need assistance. Limited staff capacity and expertise can also hinder facility energy projects from moving forward and limit the continuity needed to plan, procure, and implement multi-year energy projects. Staff often lack the tools and data to assess the performance, reliability, economic impacts, and resilience and health benefits of energy efficiency and decarbonization technologies. Real-world data and project-specific analyses are needed to address risks, demonstrate benefits, support informed decision-making, and make projects feasible. Public agencies typically prioritize deferred equipment maintenance rather than planning for long-term efficiency, decarbonization, resilience, and operational improvements. Advanced decarbonization technologies often have high upfront costs and long payback times which make it difficult for public agencies to gain approval for the investment. Agencies serving Hard-to-Reach areas, Disadvantaged Communities, and Underserved		Sector Opportunities (Expected Outcome(s)): Local governments and school districts have large building portfolios presenting an opportunity for significant energy and GHG savings with energy efficiency and decarbonization projects. In the Bay Area, many public agencies are considering building decarbonization projects in order to align with state and local policies, but need additional guidance and expertise. Electric grid reliability issues are also of increasing importance to public agencies. They are seeking to improve building resilience, maintain essential services, and protect vulnerable populations in the event of a natural disaster or power shutoffs. The IES program provides information to help agencies find and apply for funds and technical assistance for their building projects through the Energy Concierge service, thereby supporting other programs, including those provided by other Portfolio Administrators (PAs). Through the Energy Roadmapping service, IES supports the long-term energy planning local agencies need in order to carry out upgrades across their portfolios. These plans integrate demand-response, decarbonization, and integrated demand-side management (IDSMD), as well as addressing

Program Name: Integrated Energy Services Program (IES)	
communities often face additional constraints, such as older building stock and fewer local funds to leverage.	deferred maintenance, to provide a comprehensive phased approach that local agencies can implement. The resulting improvements can result in significant utility cost savings and reduce load on the grid, while also protecting the local agency against rising energy costs and reducing long-term operational risk. Improving the health and safety of school facilities are key priorities for school districts, especially since the COVID-19 pandemic, and decarbonization upgrades obtained with information from the Energy Concierge or planned for with an Energy Roadmap can enhance indoor air quality, thermal comfort, and occupant well-being.
Brief Program Description: (Including customer target, program strategies employed, expected program outcome): This program addresses public agencies' needs to find integrated solutions to achieve their energy goals. The program consists of two main services: Energy Concierge and Energy Roadmapping. The Energy Concierge service provides an objective central single point of contact to help public agencies identify appropriate technical assistance, financing, and incentive program options for their facility energy projects. Starting in 2028, the Energy Concierge service will offer additional assistance to local agencies to enable them to complete program applications. The Energy Roadmapping service provides technical and engineering assistance to public agencies to develop "roadmaps" for improving their facilities to meet their unique energy goals. In addition, the Energy Roadmapping service offers energy assessments of designated and potential CRCs and technical assistance for energy system improvements. Starting in 2028, the Energy Roadmapping service will offer additional technical assistance to assist public agency staff with implementation, such as developing equipment performance specifications, supporting procurement, and identifying opportunities to optimize systems post-construction.	
Known Equity Concerns in the Selected Markets (if applicable): Public facilities are intended to serve all residents, particularly those who may be disproportionately affected by changes and disruptions to the energy system.	Proposed Solutions to Equity Concerns (if applicable): The IES program prioritizes facilities located in Disadvantaged Communities, Hard-to-Reach, or Underserved communities including Equity Priority Communities. The program also supports the development of public CRCs that provide vulnerable residents with safe, reliable spaces during extreme weather and power outages.

Program Name: Integrated Energy Services Program (IES)	
Intervention Strategy: • Technical Assistance • Marketing and Outreach/Information	Delivery Type: Downstream
Measurement and Verification Methods: This program does not claim savings. It will be assessed as needed and as written up in the BayREN Annual Evaluation, Measurement, and Verification plan.	Program Total System Benefit (TSB) for 2028-2031: N/A
Annual Budgets for 2028-2031: 2028: \$1,242,889 2029: \$1,280,314 2030: \$1,317,406 2031: \$1,356,662	Cost Effectiveness (TRC and PAC Test Ratios) for 2028-2031: TRC: N/A PAC: N/A
Anticipated directional and scale changes in budget for years 2032-2035: Anticipate a slight year-over year increase in budget for this program for the 2032-2035 period due to escalation in labor rates.	Market Actors necessary for success: • Public agencies – cities, counties, special districts, and K-12 school districts • BayREN counties • Other Portfolio Administrators and non-ratepayer programs serving public sector buildings
High-level description of delivery workforce including necessary scale and its risks: Workforce requirements include local government and school district sustainability and resilience staff, public works engineers and project managers, facility managers, and design teams. The main risk is that agency budget constraints could reduce the size of the workforce and lower the priority of energy projects.	
Near-term Program Output(s) (1-4 years): Within one year of program launch, the IES program has already supported 22 Bay Area jurisdictions across eight of the nine counties. Near-term goals for the program include: • Energy Concierge: Provide assistance to 15 public agencies per year for their facility projects to help them access and secure funding and financing to complete energy and resilience upgrades to their facilities. • Energy Roadmapping: Complete and support the implementation of 10 public agency roadmaps per year that include phased, cost-effective approaches that integrate energy efficiency, demand response, electrification, EV charging, IDSM, and resilience upgrades for their facilities with detailed project financials to inform decision-making and prioritization.	

Program Name: Integrated Energy Services Program (IES)**Long Term Outcome (5-10 years):**

The comprehensive technical assistance and engineering support provided by the IES program will lead to reductions in energy use and GHG emissions, as well as cost savings for public agency buildings as more energy projects are completed. When power outages and disasters occur, public buildings and agency staff will be better equipped to withstand them and continue to offer critical services to their residents and businesses. By prioritizing buildings serving vulnerable communities, the program will support local agencies in providing services to these residents. In addition, these projects will also result in indoor air quality and occupant comfort benefits.

Through streamlined coordination, reduced administrative burdens, and improved uptake of other ratepayer-funded programs, the IES program will also indirectly boost the cost-effectiveness of the entire portfolio of programs.

Does this program interact with other programs in this PA portfolio? If so, describe:

Yes, this program complements the Targeted Decarbonization Services (TDS) program, creating a unified public sector portfolio. Participants in the TDS Decarbonization Showcase can be referred to the IES Energy Concierge service for assistance identifying and applying for applicable programs for the specific facility decarbonization project, helping them access the funding needed to complete the project. Similarly, agencies that receive an Energy Roadmap from the IES program are better equipped to participate in the Showcase to further support their building decarbonization efforts.

The Energy Concierge service also refers participants to the various TDS and Codes & Standards (C&S) offerings including trainings tailored to facility and finance staff, and these trainings equip local agency staff to better implement and manage energy and decarbonization building improvements. This coordinated approach strengthens local capacity, accelerates compliance with state and local decarbonization policies, supports the C&S program by increasing local readiness, and reinforces BayREN's mission to advance healthy, resilient, and decarbonized communities.

Program Metrics and Indicators (KPIs):

- Number of public agencies that receive support
- Number of equity targeted public agency buildings (i.e., located in DAC, HTR, or Underserved including MTC Equity Priority Communities) where the Energy Concierge provided assistance for facility projects, or equity targeted buildings that receive a Roadmap (EQ03c)
- Lifecycle net kWh savings (estimated from completed Roadmap projects)
- Lifecycle net therms savings (estimated from completed Roadmap projects)
- Lifecycle net GHG savings (estimated from completed Roadmap projects)
- Number and percent of public agencies that have taken action within a year of Roadmap delivery towards implementing recommended energy measures for buildings included in the Roadmap
- Lifecycle net energy cost savings (estimated from Roadmap projects)

Program Name: Integrated Energy Services Program (IES)	
Does this program utilize Integrated Demand Side Management (IDSM)? Yes, the IES program provides technical assistance and referrals for IDSM improvements to interested local agencies to promote load shifting that reduces peak electricity load, lowers utility bills, and delivers resilience benefits during extreme weather events or power outages.	Link to Existing Implementation Plan, if existing: https://cedars.cpuc.ca.gov/documents/download/3596/mainchange_summary%7Cmain%7Credline/

Case Study for Integrated Energy Services, Energy Roadmapping: Supporting Long-Term Energy and Resilience Planning

In 2024, BayREN expanded its program offerings to support Bay Area local governments and special districts through a new Energy Roadmapping service. The service provides free technical and engineering support to help jurisdictions develop phased, actionable plans for improving energy performance and resilience in public buildings and Community Resilience Centers (CRCs). The City of Cupertino was among the first communities to participate.



The public library is one of five buildings supported by the Energy Roadmap in Cupertino.

In Cupertino, the Energy Roadmap evaluated five municipal buildings, including the library and community center, and outlined a phased approach to reduce energy use, manage costs, and support future resilience investments. Initial recommendations focused on operational improvements such as retro-commissioning the library's HVAC system and optimizing air conditioning schedules to reduce unnecessary energy use.

Subsequent phases prioritize electrification measures, including heat pump HVAC systems and heat pump water heaters, followed by the installation of solar and battery energy storage systems once efficiency upgrades are complete. This sequencing helps ensure systems are properly sized while minimizing overall project costs. Two of the buildings already function as heating and cooling centers, with the goal of enabling them to operate as CRCs during power outages.

As Ursula Syrova, Environmental Programs and Sustainability Manager for Cupertino, noted, “the well considered recommended phasing and cost estimates in the roadmap will be particularly helpful as grant opportunities come up and for capital improvement and maintenance planning.”

Energy Roadmaps deliver structured, long-term strategies that integrate energy efficiency, electrification, and resilience planning. By aligning technical analysis with implementation pathways, the service supports informed decision-making, long-term cost effectiveness, and progress toward local climate and resilience goals.

Program Name: Targeted Decarbonization Services Program		
Program ID: BayREN12 New / Existing: Existing Expected Program Duration: 2028 - 2035		
Portfolio Segment: Market Support	Program Implementer Type: REN	Third-Party Program Implementer (applicable to IOUs only): N/A
Applicable Sector: Public	Customer Group(s): • Local governments • Special districts • K-12 school districts	
Sector Challenges: Public agencies face a number of challenges when working to decarbonize their building stock. Staff are often unfamiliar with decarbonization technologies such as heat pumps and need assistance with understanding every aspect of the technology, from purchasing through installation and maintenance. Real-world data and project-specific analyses are needed to convince decision-makers at the local level to invest in decarbonization technologies. Such analyses can address risks, demonstrate benefits, support informed decision-making, and make projects feasible. Staff capacity is also an issue, particularly as building projects in the public sector can take years and require support from staff from multiple departments, from Finance to Public Works to Facilities. Advanced decarbonization technologies often have high upfront costs and long payback times which can make it difficult for public agencies to gain approval for the investment. While some programs are available to assist with costs or technical expertise, these programs can change rapidly and staff lack the time or expertise to access them.	Sector Opportunities (Expected Outcome(s)): In alignment with state and local climate policies, many public agencies are considering building decarbonization projects but need additional guidance and expertise. Local governments and school districts have large building portfolios, presenting an opportunity for significant energy and GHG savings with energy efficiency and decarbonization projects. Through TDS trainings, public agency staff gain hands-on support, practical skills, and knowledge needed to operate, maintain, and procure decarbonization technologies, strengthening local capacity beyond any single project. These trainings are designed specifically for local government staff who need specialized knowledge to support decarbonization of public facilities. Successful TDS Decarbonization Showcase projects demonstrate and document replicable, scalable decarbonization strategies. By assisting local agencies to identify and apply for available funding, local agency staff learn approaches they will be able to use for other buildings. Provided limited gap funding when needed in order to achieve decarbonization goals ensures that projects are able to be completed.	

Program Name: Targeted Decarbonization Services Program	
Public agencies typically prioritize deferred equipment maintenance rather than planning for long-term decarbonization, resilience, and operational improvements. Agencies serving Hard-to-Reach areas, Disadvantaged Communities, and Underserved communities often face additional constraints, such as older building stock and fewer local funds to leverage.	Improving the health and safety of school facilities are key priorities for school districts, especially since the COVID-19 pandemic. Providing them with information on how decarbonization upgrades can enhance indoor air quality, thermal comfort, and occupant well-being can encourage investment in these improvements.
Brief Program Description: (Including customer target, program strategies employed, expected program outcome): The program provides technical and financial support to public agencies to advance the deployment of technologies and strategies needed to achieve building decarbonization. The program consists of three services: Decarbonization Showcase, Decarbonization Education, and Decarbonization Financing. The Decarbonization Showcase service enrolls public facilities to pilot and demonstrate approaches to building decarbonization and collects and shares real-world data. The Showcase service provides technical assistance and gap funding for the development of selected projects. Projects are referred to other programs, particularly those that are not ratepayer-funded, as appropriate. Data is collected before and after the improvements are completed and used to produce detailed case studies to promote the scaling the approaches across the region. Information is shared widely by posting the case studies on the website and through peer network calls and webinars. The Decarbonization Education service offers training and resources to public agency staff to familiarize them with daily operations and the long-term maintenance and outlook of decarbonization equipment. Trainings also provide information and resources related to strategies for monetizing improvements to secure financing. The Decarbonization Financing service studies market conditions and explores financing alternatives, including leveraging additional funding sources, and provides information about financing as well as testing financial packages to overcome barriers to decarbonization.	
Known Equity Concerns in the Selected Markets (if applicable): Public facilities are intended to serve all residents. More vulnerable residents are disproportionately affected by changes and disruptions to the energy system and less able to afford and implement energy improvements to their own homes, increasing their reliance on public facilities.	Proposed Solutions to Equity Concerns (if applicable): By facilitating the decarbonization of public facilities, TDS ensures that these facilities are upgraded and available to serve vulnerable populations. TDS prioritizes facilities that are located in Disadvantaged Communities (DAC), Hard-to-Reach (HTR), or Underserved, including MTC Equity Priority Communities, or that specifically serve vulnerable populations.

Program Name: Targeted Decarbonization Services Program	
Intervention Strategy: ● Finance ● Marketing & Outreach/Information ● Technical Assistance ● Training	Delivery Type: Downstream
Measurement and Verification Methods: This program does not claim savings. It will be assessed as needed and as written up in the BayREN Annual Evaluation, Measurement, and Verification plan.	Program Total System Benefit (TSB) for 2028-2031: N/A
Annual Budgets for 2028-2031: 2028: \$1,481,865 2029: \$1,759,054 2030: \$1,552,002 2031: \$1,843,584	Cost Effectiveness (TRC and PAC Test Ratios) for 2028-2031: TRC: N/A PAC: N/A
Anticipated directional and scale changes in budget for years 2032-2035: A slight increase in budget for this program is anticipated for the 2032-2035 period, dependent on program performance.	Market Actors necessary for success: ● Public agencies – cities, counties, special districts, and K-12 school districts ● BayREN counties ● Other programs serving public sector buildings
High-level description of delivery workforce including necessary scale and its risks: Workforce requirements include local government and school district sustainability and resilience staff, public works engineers and project managers, facilities managers, and design teams. The main risk is that budget constraints could reduce the size of the workforce and lower the priority of energy projects.	
Near-term Program Output(s) (1-4 years): Within one year of program launch, the TDS program has already supported over 42 Bay Area jurisdictions across all nine counties. Near-term goals for the program for 2028-2031 include: ● Decarbonization Showcase: 10 Decarbonization Showcase projects completed. ● Decarbonization Education: 500 unique public agency staff trained in the operations, maintenance, and financing of decarbonization technologies for public buildings. ● Decarbonization Finance: Additional funding sources leveraged to support decarbonization projects.	
Long Term Outcome (5-10 years): Demonstration of a scalable, cost-effective model for public sector building decarbonization, equipping public agencies with the training, financing strategies, and replicable project approaches needed to achieve	

Program Name: Targeted Decarbonization Services Program	
emission reductions. By demonstrating real health, resilience, equity, and cost-benefits, the program helps make building decarbonization a feasible, mainstream path across the region.	
Does this program interact with other programs in this PA portfolio? If so, describe: Yes, this program complements the Integrated Energy Services (IES) program, creating a unified public-sector portfolio that supports agencies through every stage of their decarbonization journey. By offering training, technical and financing assistance, and project management support, the TDS program deepens local capacity and enables agencies to implement energy projects identified through the IES program. This coordinated approach strengthens local capacity, accelerates compliance with state and local decarbonization policies, supports the Codes & Standards program by increasing local readiness, and reinforces BayREN’s mission to advance healthy, resilient, and decarbonized communities.	
Program Metrics and Indicators (KPIs): • Number of decarbonization showcases completed • Number of decarbonization improvement projects completed (as a result of testing financing approaches) • Number of equity targeted public agencies with a showcase or completed projects that meets the equity-targeted criteria (EQ03c) • Lifecycle net kWh (estimated from Showcase projects) • Lifecycle net therms (estimated from Showcase projects) • GHG reductions (estimated from Showcase projects) • Total number of jurisdictions that received support • Number of public agency staff trained and with increase in knowledge	
Does this program utilize Integrated Demand Side Management (IDSM)? Yes, the TDS program provides technical assistance and referrals for IDSM improvements to interested local agencies to promote load shifting in their projects that reduces peak electricity load, lowers utility bills, and delivers resilience benefits during extreme weather events or power outages.	Link to Existing Implementation Plan, if existing: https://cedars.cpuc.ca.gov/documents/download/3598/mainchange_summary%7Cmain%7Credline/

Targeted Decarbonization Services Decarbonization Showcase Case Study: Turning Public Buildings into Clean Energy Leaders

BayREN's Decarbonization Showcase is accelerating the shift to all-electric, energy-efficient public buildings across the Bay Area. Centered on real-world impact and local governments leading by example, the service supports pilot projects that demonstrate scalable pathways to reduce emissions across diverse communities and building types.

The Decarbonization Showcase aims to:

- Collect and share real-world data on decarbonization approaches across design, construction, and operation stages for public buildings in a variety of climate zones.
- Offer free technical and financial support to participants, with a focus on projects serving equity priority communities.
- Share findings and insights through case studies, peer network calls, and webinars, while developing metrics to communicate the full range of decarbonization impacts.



The Temescal Branch Library in Oakland, CA.

Five projects across different counties in the Bay Area were selected to participate in the first Decarbonization Showcase cohort. The participating sites include two community centers, two libraries, and one child care development center. Three of the five sites in the first cohort are located in Equity Priority Communities. "Each selected Showcase project represents a step forward in building a healthier, more resilient Bay Area," said Program Manager Alyssa Dykman.

These projects go beyond building upgrades. They explore how public facilities can better serve equity priority communities, support clean energy education, and function as climate resilience hubs. Sharing his experience with the Showcase, Nick Kordesch, Energy Program Manager, City of Oakland said, "Without the gap funding and technical assistance, this library building decarbonization upgrade would not have moved forward. The support – from system sizing and equipment options to independent cost estimates – helped accelerate the project. The BayREN team has been great to work with, and the regular check-ins help keep us on track." BayREN is proud to support these transformations, share lessons learned across the region, and will welcome a second Decarbonization Showcase cohort in 2026.

Program Name: Incubator for Community-Designed Initiatives		
Program ID: BAYREN13 New / Existing: New Expected Program Duration: 2028 - 2035		
Portfolio Segment: Market Support	Program Implementer Type: REN	Third-Party Program Implementer (applicable to IOUs only): N/A
Applicable Sector: Cross-cutting	Customer Group(s): Customers to be identified by participating community-based organizations (CBOs) and local governments	
Sector Challenges: Energy efficiency programs are designed based on an average use case, and often local community needs and issues are not taken into account. Most programs are designed based on available data and the experience of the people involved with the design, not by the target audiences or those who work most closely with them.	Sector Opportunities (Expected Outcome(s)): By engaging CBOs and local government agencies to design and carry out limited-budget trial projects, more information will be gathered on gaps in current offerings and new approaches may be developed to better reach target audiences and better address their needs. All projects and their results will be shared with the public as well as other Portfolio Administrators in order to promote scaling of successful approaches.	
Brief Program Description: (Including customer target, program strategies employed, expected program outcome): The program will bring together community-based organizations and local governments in annual Collaboratives organized around a theme related to energy, such as improving health and resilience outcomes through energy improvements. Members of each Collaborative will meet regularly, from initial training through proposal development and potentially implementation, with a secondary goal of the program being to build relationships between participants and throughout the region. CBO Collaborative members will be compensated for their time and participation, while local governments members will not. Participants will be able to submit proposals for limited-budget trial projects. To ensure that proposals are good uses of ratepayer funds and are aligned with CPUC and BayREN objectives, each proposal will be evaluated and scored by a panel that could include BayREN regional administrative staff, county members from counties not submitting proposals, and others such as CPUC staff, staff from other public agencies or program administrators, or previous Collaborative members. Top-ranking projects will be funded directly through the program for testing, with results reported out publicly at an annual BayREN Innovations event. Successful projects could potentially be scaled to larger geographic areas, incorporated into existing BayREN programs, or proposed as new programs. This program will help the Commission achieve its objective of “encouraging more community involvement in energy efficiency program design and delivery” by allowing “community leaders to participate in		

Program Name: Incubator for Community-Designed Initiatives	
development and recommendation of a process for community-designed programs to be incubated, received, selected, connected with necessary partners, and funded” (D.23-06-055, p. 81). The program will have the following outcomes: • Educating both local governments and CBOs about the CPUC and ratepayer-funded programs; • Identifying gaps in existing energy efficiency and electrification services and programs, particularly for priority audiences in our local communities; • Developing new ideas for initiatives to fill those gaps based on in-depth knowledge of the target audiences and local conditions; • Leveraging non-ratepayer funds in order to expand both the impact and the scope of the initiatives; and • Testing these ideas and sharing the results widely in order to encourage idea exchange and scaling up to larger geographic areas when appropriate.	
Known Equity Concerns in the Selected Markets (if applicable): Hard-to-reach or underserved customers and disadvantaged communities face increased barriers to implementing energy efficiency upgrades and have lower participation in energy efficiency programs	Proposed Solutions to Equity Concerns (if applicable): This program directly supports Goal 5 of the CPUC’s ESJ Action Plan and particularly Objectives 5.3 “Build Pathways for Public Participation” and 5.4, “Enhance Engagement with Particular ESJ Communities.” The program gives CBOs and local government agencies who work directly with target audiences the opportunity to design and implement trial projects to address the barriers in their communities and improve participation. Sharing results will lead to scaling of successful approaches.
Intervention Strategy: • Training • Technical assistance • Outreach/information, and potentially others as identified by participating CBOs and local governments	Delivery Type: To be determined by participants
Measurement and Verification Methods: This program will be assessed as needed and as written up in the BayREN Annual Evaluation, Measurement, and Verification plan. Additional methods may be identified for trial projects as appropriate.	Program Total System Benefit (TSB) for 2028-2031: Cannot be forecasted; any amounts to be claimed will be determined based on trial projects

Program Name: Incubator for Community-Designed Initiatives	
Annual Budgets for 2028-2031: 2028: \$1,264,781 2029: \$1,492,942 2030: \$1,518,592 2031: \$1,546,383	Cost Effectiveness (TRC and PAC Test Ratios) for 2028-2031: Not applicable
Anticipated directional and scale changes in budget for years 2032-2035: This budget is proposed to continue with a slight increase to account for inflation and allow continued operations, dependent on program performance.	Market Actors necessary for success: • Community-based organizations • Local government agencies
High-level description of delivery workforce including necessary scale and its risks: Workforce needs will be determined by participating CBOs and local government agencies. Because initiatives carried out under this program will be limited-budget trial projects, workforce needs will necessarily be limited in scope.	
Near-term Program Output(s) (1-4 years): • Ten to twenty CBOs and local government agencies participate in each Collaborative • Five to ten proposals for activities are supported, developed, received, and assessed annually • Top-ranked proposals funded each year, with the number depending on the type and scale of proposals and the amount of non-ratepayer funds leveraged • All results shared at annual BayREN Innovates events	
Long Term Outcome (5-10 years): • Local communities are engaged with the design and implementation of energy efficiency programs • Innovative new approaches are tested and successful ones scaled • Additional in-kind and funding sources are leveraged • Programs are better able to address barriers, improve participation, and achieve better outcomes	
Does this program interact with other programs in this PA portfolio? If so, describe: Interactions will depend on the activities proposed by CBOs and local government agencies. For any proposed activities that would target the same audience as another BayREN program, the proposer and the BayREN program lead would work together to ensure clear communication and alignment. For example, any CBO or local government agency targeting multifamily property owners or tenants for their trial project would collaborate with BayREN's multifamily BAMBE program so that offerings are clearly communicated and customers are not confused.	
Program Metrics and Indicators (KPIs): This program will have the following direct metrics and indicators: • Number of Collaborative participants	

Program Name: Incubator for Community-Designed Initiatives	
• Number of trial projects supported, developed, and proposed • Number of trial projects funded and reported on • Will also include EQ and MS indicators, as appropriate, after program design In addition, each proposal will include its own proposed metrics and indicators. These will be collected for all funded trial projects and will be reported at the annual BayREN Innovates event.	
Does this program utilize Integrated Demand Side Management (IDSM)? No.	Link to Existing Implementation Plan, if existing: Implementation Plan will be developed upon program approval

Program Name: Health, Energy, and Resiliency Education (HERE) Program		
Program ID: BAYREN07 New / Existing: Existing Expected Program Duration: 2028 - 2035		
Portfolio Segment: Market Support	Program Implementer Type: REN	Third-Party Program Implementer (applicable to IOUs only): N/A
Applicable Sector: Residential	Customer Group(s): • Real estate professionals (agents, appraisers, lenders) • Design professionals (interior designers, architectural designers, architects)	
Sector Challenges: Existing homes largely remain energy inefficient, despite the potential impact energy improvements can have on indoor air quality, comfort, and affordability. Homeowners often think about aesthetic improvements before unseen items (like insulation, air sealing, and ductwork), and climate change and reducing GHG emissions is not a motivating factor for everyone. Electricity, materials, construction, and labor costs are all high, which can disincentivize home improvements and cause people to wait for emergency scenarios to make changes. Further, myths about electrification (i.e., an electrical panel upgrade is always needed; electric stoves are inferior) persist and can be perpetuated by real estate and design professionals. The real value of these “invisible” improvements is usually not communicated by real estate or design professionals.	Sector Opportunities (Expected Outcome(s)): Real estate and design professionals can be influential to buyers in terms of both the homes chosen and upgrades made during renovations. They can therefore serve as key interveners in advancing the positive attributes of a “green home” including energy efficiency and electrification. “Green” Professional certifications (NAR Green Designation, Accredited Green Appraiser, Passive House, LEED for Homes, and more) exist but are underutilized. From 2018-2025, BayREN has trained over 1,700 real estate professionals. While this meets program goals and metrics, there are still thousands of real estate professionals in the Bay Area who have not yet engaged with these offerings. The fact that professionals often need Continuing Education credits for license renewals provides an opportunity to attract them to energy and sustainability training. BayREN trainings will be added based on new areas of interest and policy priorities. For example, health and resilience are becoming increasingly important topics and have clear connections to energy efficiency and electrification improvements. (This is reflected in positive feedback in class evaluations	

Program Name: Health, Energy, and Resiliency Education (HERE) Program	
	and in recent real estate surveys and focus groups conducted by BayREN.) As knowledge and interest in solar panels, battery storage, and EV charging grow, so will the opportunity to discuss the benefits of other electrification technologies.
Brief Program Description: (Including customer target, program strategies employed, expected program outcome): The BayREN HERE program (formerly known as the Green Labeling program) provides no-cost training for real estate and design professionals to help them understand, market, and accurately value the benefits of energy efficient and all-electric homes. This enables them to effectively communicate with their clients about the benefits of energy upgrades alongside cosmetic improvements and to dispel myths about electrification. These trainings fill a gap in the marketplace by providing a free pathway to “green” certification for realtors and appraisers, as well as other educational opportunities and firsthand experiences for real estate and design professionals with technologies such as heat pumps and induction stoves, thereby empowering them to guide clients and connect them with resources like incentive programs and home performance contractors.	
Known Equity Concerns in the Selected Markets (if applicable): Low- and moderate-income households often lack the capital to finance improvements and need financial or technical assistance for upgrades. Many real estate agents and designers are focused on clients where they can make the most commission on sales, which tend to be high-income clients.	Proposed Solutions to Equity Concerns (if applicable): BayREN will continue to connect with trade organizations who represent and serve communities of color, including the National Association of Real Estate Brokers (NAREB), the National Association of Hispanic Real Estate Professionals and the National Organization of Minority Architects (NOMA). BayREN will continue to provide information to real estate and design professionals about financing resources, such as the FHA Energy Efficiency Mortgage, and income-qualified rebate programs.
Intervention Strategy: ● Education & Training ● Marketing & Outreach	Delivery Type: Downstream
Measurement and Verification Methods: This program does not claim savings. It will be assessed as needed and as written up in the BayREN Annual Evaluation, Measurement, and Verification plan.	Program Total System Benefit (TSB) for 2028-2031: N/A

Program Name: Health, Energy, and Resiliency Education (HERE) Program	
Annual Budgets for 2028-2031: 2028: \$1,045,255 2029: \$1,071,145 2030: \$1,096,535 2031: \$1,123,403	Cost Effectiveness (TRC and PAC Test Ratios) for 2028-2031: N/A
Anticipated directional and scale changes in budget for years 2032-2035: No significant budget changes are anticipated, only reasonable increases are to adjust for increased labor and material costs over time.	Market Actors necessary for success: • Real estate agents, brokerages, and associations of realtors • Real estate appraisers and lenders • Architecture and design professionals and relevant industry/trade associations
High-level description of delivery workforce including necessary scale and its risks: Real estate agents are necessary actors for this program to succeed. However, real estate is a sector constantly in flux. We know from experience that when the real estate market is busy, it is more difficult to attract attendees. This requires the program to be nimble and flexible to meet the demands of the current market and its actors. As the program expands into the new audience of design professionals, we will further investigate the demand for trainings and adjust offerings as necessary to meet their needs. This may include changing training topics and format to attract attendees. However, with testing over program years 2026-2027 and building upon our knowledge working with real estate professionals since 2018, we believe we can successfully engage with this stakeholder group.	
Near-term Program Output(s) (1-4 years): • Launch new design professional trainings • Host 80 trainings • Train at least 800 professionals • Increase the number of repeat attendees • Develop toolkits and handouts that summarize training content and provide additional information on energy, health, and resilience benefits of upgrades for attendees to use in their conversations with clients	
Long Term Outcome (5-10 years): In the long-term, the HERE program will engage with and train real estate and design professionals, closing the gap between the growing interest in climate and sustainability topics and lack of awareness of training opportunities, as identified in BayREN's 2025 real estate focus group and a recent Redfin survey of real estate agents. There will also be a robust relationship between BayREN counties and trainees that translates into greater investment in energy efficiency and electrification in the residential sector, particularly in DACs and hard to reach communities. Energy and sustainability information will be commonplace in the MLS and provided to clients similarly to how pest and home inspections are standard practice. This increase in	

Program Name: Health, Energy, and Resiliency Education (HERE) Program	
knowledge will translate to more informed clients of trained professionals and therefore more energy, health, and resilience upgrades in single-family homes.	
Does this program interact with other programs in this PA portfolio? If so, describe: Yes. HERE interacts with the other residential sector programs (Single Family, Multifamily, and Statewide Home Energy Score) to make sure that the offerings in those programs are incorporated into our training. This helps provide steps for attendees in taking action after their classes, allows for buyers to have information about the programs, and promotes participation in BayREN's other residential programs. Additionally, HERE participants are more aware of local decarbonization reach codes and state regulations.	
Program Metrics and Indicators (KPIs): ● Total attendees for trainings, tours, or other offerings (MF14f) ● % of attendees reporting that the trainings increased their knowledge about topics like energy efficiency, solar, and the electrification of buildings ● % of attendees reporting that they are sharing energy efficiency and green feature information with their clients ● # of trainings delivered	
Does this program utilize Integrated Demand Side Management (IDSM)? Not at this time.	Link to Existing Implementation Plan, if existing: https://cedars.cpuc.ca.gov/documents/download/3589/mainchange_summary%7Cmain%7Credline/

Health, Energy and Resilience Education (HERE) Case Study: Educating Real Estate Agents to Support Energy Efficient and Electric Homes

When Simi, a real estate agent from Keller Williams Danville was supporting a client in selling a home equipped with a high-end induction cooktop, the buyer wanted to replace it with a gas stove. Although Simi recognized that the induction cooktop was a valuable feature, she didn't have the language to explain the health and cooking benefits to the buyer. To better understand and communicate the advantages of a green home, Simi completed the NAR Green Designation training hosted by BayREN.

Simi is not alone in her experience. According to a recent Redfin survey, nearly 40% of real estate agents believe climate change is impacting where people choose to live and what home to buy. In California, that number rises to over 50%. Yet only 13% of respondents said their brokerage provides training on climate and weather-related risks. BayREN aims to fill this gap and empower Bay Area real estate agents to better understand and communicate the connections between climate, health and energy in homes. Through BayREN trainings, real estate professionals can become trusted guides for clients navigating the evolving landscape of sustainable and resilient housing.



Simi (center) and colleagues at BayREN's training

On June 26, 2025, the BayREN Green Labeling program (which will become the Health, Energy and Resilience Education program) hosted a training on electrification and induction cooking for Bay Area real estate professionals. Held at the new Frontier Food Service Technology Center in Pleasanton, CA, this class was designed to help real estate professionals navigate the biggest questions their clients may have regarding electric appliances, such as heat pump water heaters, heat pump HVAC systems, and induction stoves. BayREN aims to build real estate professionals' confidence in discussing energy efficient features of homes their buyers are considering, messaging the value of high-efficiency electric appliances in homes they are selling, and guiding their clients to resources on how to make upgrades. The training highlighted California's decarbonization goals and how real estate agents can be a trusted messenger on the benefits of an all-electric home.

Through BayREN's suite of free trainings, professionals like Simi can set themselves apart by understanding how energy-efficient and all-electric homes are valued and how to explain their benefits so that they can guide clients toward sustainable choices.

Program Name: Statewide Home Energy Score California		
Program ID: BAY_SW_HESC		
New / Existing: Existing		
Expected Program Duration: 2028 - 2035		
Portfolio Segment: Market Support	Program Implementer Type: Third-Party Implementer & REN	Third-Party Program Implementer (applicable to IOUs only): Earth Advantage, Inc.
Applicable Sector: Residential	Customer Group(s): - Single Family Residential - Energy Assessors	
Sector Challenges: Existing homes largely remain energy inefficient, despite the potential impact of energy improvements on indoor air quality, comfort, and affordability issues. The energy performance of a single-family home is often not readily apparent to homeowners or renters, and they may not be aware of the health/resilience benefits of energy efficiency and electrification. Program and policy makers lack accurate in-home data about the housing stock that is needed to inform decision-making and support for residents. Without a statewide offering, there are limited trained assessors to serve rural and isolated areas, limiting potential program demand and leaving these customers without access to easily understandable home energy information.	Sector Opportunities (Expected Outcome(s)): BayREN has provided Home Energy Score (HES) reports to over 31,000 homes in the Bay Area, representing approximately 1.7% of the single-family housing stock. Data from these efforts have shown that homeowners find the HES report motivating, and evaluations have demonstrated that participants are more likely to make upgrades if they have information about the energy performance of the home first. Home Energy Scores provide field-validated data on home energy features, which can be utilized by program implementers and jurisdictions to craft energy policy and programs. The HES reports help drive energy efficiency upgrades while also connecting homeowners with resources to make upgrades through BayREN or other REN, IOU, or CCA programs. Information about energy savings from upgrades can help people save money on their utility bills. Making energy efficiency information more easily available and scaled statewide means that homeowners can make better informed decisions about what homes to rent or purchase, or what upgrades to make.	
Brief Program Description: (Including customer target, program strategies employed, expected program outcome): The expansion of the BayREN HES program statewide was directed by the CPUC in D. 23-06-055 and approved in AL 28E on November 24, 2024. The primary purpose of the HES California program is to offer		

Program Name: Statewide Home Energy Score California	
market support through enhanced energy literacy among single-family households such that they better understand how their homes use energy today, how their homes' energy performance can be improved, and next steps they can take to make home energy upgrades. To achieve this end, the program focuses on incentivizing delivery of home energy reports that include the U.S. Department of Energy's Home Energy Score and accompanying information about home energy use, costs, emissions, and opportunities for improvements. HES California incentivizes Home Energy Score assessments and consumer reports by subsidizing the total cost of completion through a \$250 rebate offered to Assessors per household assessed. Rebate fund delivery is contingent on successful delivery of the HES Report to the recipient customer and being found in good standing within the program's Quality Assurance review process. By launching this program statewide, the HES California team supports the home energy upgrade market through: ● Increased energy literacy among recipients through better understanding of their home's energy features. ● Increased awareness of home energy upgrade opportunities, including incentive programs. ● Increased data that creates robust documentation of the energy status and needs of California housing to inform policies and programs. For example, the in-home assessment evaluates the size of the electrical panel and the location of the water heater, both important data points for evaluating ease of electrification that are not commonly found in parcel or building permit data.	
Known Equity Concerns in the Selected Markets (if applicable): There are workforce challenges including enrolling assessors in rural areas, and the need for more assessors who speak other languages to serve communities with limited English proficiency. Further, low- and moderate-income households often lack the capital to finance home improvements.	Proposed Solutions to Equity Concerns (if applicable): To overcome the workforce challenges, the program will partner with other workforce programs, CBOs, and/or community colleges to recruit assessors in rural areas. Opportunities for enrollment bonuses or other incentives for multi-lingual contractors to enroll will be explored. To assist low- and moderate-income households, the HES report will provide up-to-date information on financing and rebate options to help homeowners make upgrades and will also explore partnerships with low-income upgrade programs to provide scores as part of their offerings.
Intervention Strategy: ● Audit ● Incentive/rebate ● Training ● Marketing and Outreach/Information	Delivery Type: Downstream

Program Name: Statewide Home Energy Score California	
Measurement and Verification Methods: This program does not claim savings. It will be assessed as needed and as written up in the BayREN Annual Evaluation, Measurement, and Verification plan.	Program Total System Benefit (TSB) for 2028-2031: N/A
Annual Budgets for 2028-2031: 2028: \$4,639,214 2029: \$5,269,578 2030: \$5,891,594 2031: \$6,536,061	Cost Effectiveness (TRC and PAC Test Ratios) for 2028-2031: N/A
Anticipated directional and scale changes in budget for years 2032-2035: Anticipate a moderate increase in budget for this program for the 2032-2035 period to continue scaling the reach of Home Energy Scores and number of homes who can obtain a score.	Market Actors necessary for success: • Home Energy Score Assessors • US Department of Energy • Single-family homeowners • Local governments • Other Program Administrators
High-level description of delivery workforce including necessary scale and its risks: HES California relies on a robust, distributed network of Home Energy Score assessors to be available throughout the state. As the program has been running in the Bay Area since 2018, there is a healthy workforce of about 50 active assessors in the Bay Area who are able to produce about 5,000 scores per year. The program launched statewide in 2026, and a primary goal for the first few years will be expanding this workforce. We expect there to be challenges in creating a sufficient workforce in rural and geographically isolated areas or recruiting assessors who speak languages in addition to English. However, these types of assessors are needed in order to fully serve Californians. Once assessor onboarding has started, the program will evaluate these gaps and shift recruitment efforts to attempt to fill them.	
Near-term Program Output(s) (1-4 years): • Deliver at least 30,000 Home Energy Scores throughout the state of California • Enroll at least 50 new Assessors representing geographic distribution throughout the state • Launch a new version of the HES California report • Develop a database of housing information collected through assessments	
Long Term Outcome (5-10 years): • Score over 1% of single-family homes in California • Retain HES assessors and continue enrolling new assessors in less represented regions of the state • Launch 2 pilots of HES-related policies	

Program Name: Statewide Home Energy Score California	
Does this program interact with other programs in this PA portfolio? If so, describe: Yes, this program coordinates with the other BayREN programs in the following ways: ● EASE Home: Since BayREN's single-family program is income restricted, the HES California program can be an option for market rate customers. ● BAMBE: HES California program is currently only available to single family homes. However, the US DOE has recently expanded the tool to work for multifamily properties. The feasibility and interest of expanding into the multifamily sector is currently being explored. ● HERE: HES California is discussed at the HERE program trainings as a potential option for real estate and design professionals to use with their clients. ● Codes & Standards: There is budget in the HES California program to support jurisdictions who may wish to pursue or pilot a disclosure policy utilizing HES. If this were to occur in BayREN territory, we would coordinate with the C&S program on development and implementation of the policy. As a statewide program, HES California will also coordinate with other statewide PAs and local PAs if there are opportunities for synergies between program promotion and/or workforce development.	
Program Metrics and Indicators (KPIs): ● Total # of Home Energy Scores delivered ● # of participants receiving one or more Home Energy Score reports ● # of DAC participants receiving one or more Home Energy Score reports (EQ03a) ● % of participating households who respond to survey that demonstrate energy literacy (e.g., how their home uses energy), how home energy use can be reduced, and options or next steps for future home energy upgrades ● # of assessors delivering Home Energy Scores in the program	
Does this program utilize Integrated Demand Side Management (IDSM)? No.	Link to Existing Implementation Plan, if existing: https://cedars.cpuc.ca.gov/documents/download/3584/mainchange_summary%7Cmain%7Credline/

Case Study for Home Energy Score California: Using a Home Energy Score to Guide a 1940s Home Transformation

When Emily and her husband purchased their 1940s Oakland home, they wanted to improve comfort and reduce long term energy costs. To help them decide what changes to make to their house, they started with a Home Energy Score (HES) report provided through BayREN. HES reports include a standardized 1–10 rating developed by the Department of Energy that evaluates a home's energy performance and provides recommendations for improvements.



Emily's home upgrade plan was guided by the recommendations from a Home Energy Score.

Their home scored a 5, and the report identified opportunities to improve the building shell and replace outdated systems. Using the HES recommendations as a guide, they developed a multiyear plan that aligned energy efficiency, electrification goals, and available rebates from BayREN and others. Following these priorities, they completed upgrades with the greatest impact on overall performance:

- **Air sealing and attic and floor insulation** were completed first to reduce energy loss and improve comfort by providing consistent and comfortable indoor temperatures.
- **A high efficiency heat pump** replaced the aging gas furnace to provide efficient heating and cooling.
- **A heat pump water heater** was installed before the aging unit failed and programmed to operate during off peak hours.
- **An induction range** was added to improve indoor air quality and reduce gas use while cooking.
- **Electrical panel upgrades** ensured the home could safely support all electric equipment and an EV charger.

The couple plans to install solar panels and battery storage in the future to generate their own power, contribute excess energy to the grid, and maintain electricity during outages.

By following the HES recommendations, Emily and her husband transformed their home into an energy efficient space that is more comfortable, healthier, and ready for solar. In 2023, the home was rescored and received a perfect 10, demonstrating how a clear starting point and phased approach can help homeowners make cost effective improvement decisions.