



# 2023

## Annual Report

**Building Blocks  
for a Brighter Future**

**BAYREN**

Bay Area Regional Energy Network

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# Achievements to Date

**166**

million  
tons of carbon  
avoided



**72**

thousand  
housing units  
upgraded



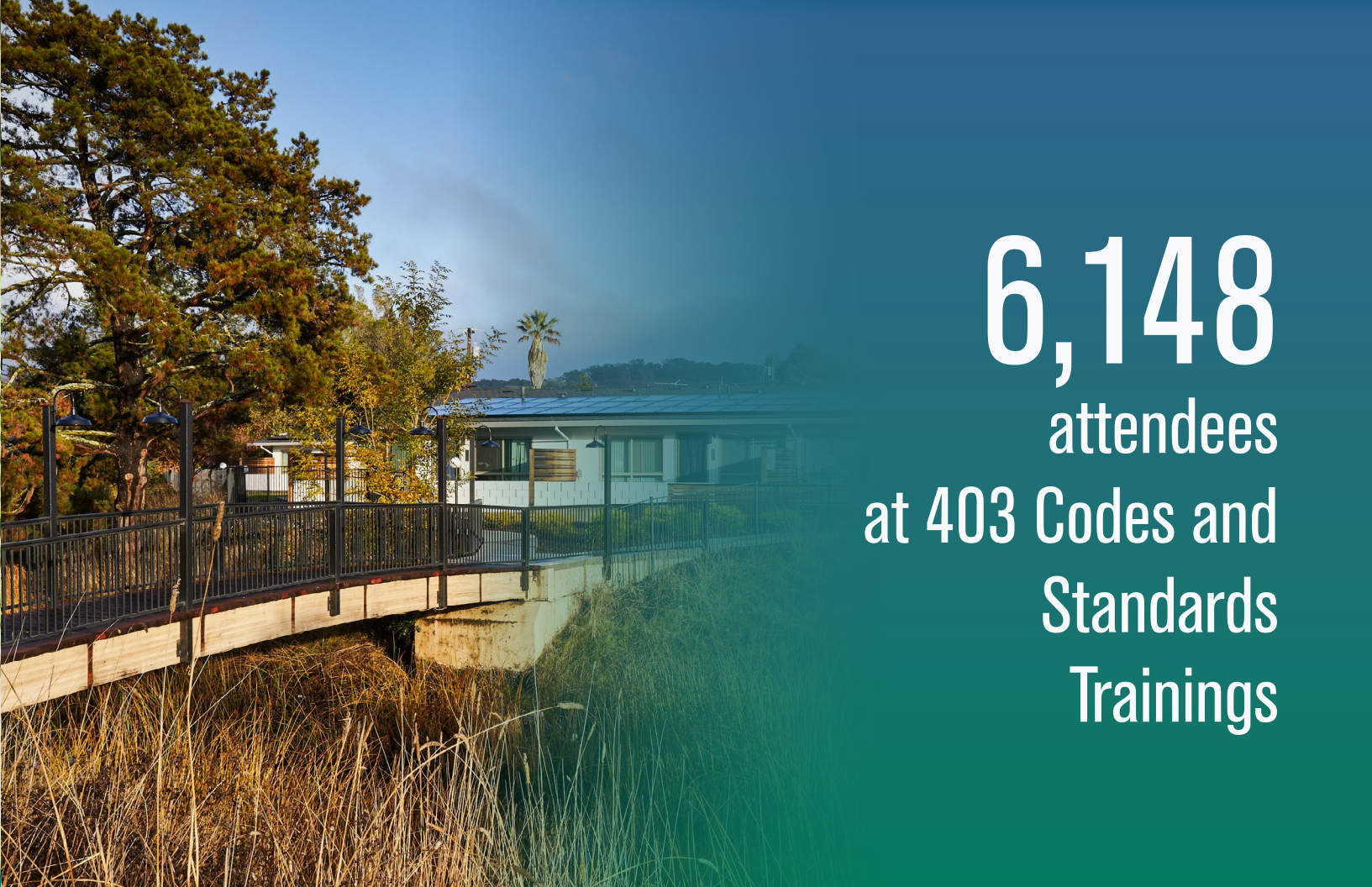
**\$78**

million  
incentives paid



**6,148**

attendees  
at 403 Codes and  
Standards  
Trainings



# Executive Summary

## What is BayREN?

The San Francisco Bay Area Regional Energy Network (BayREN) is a collaboration between the Association of Bay Area Governments (ABAG) and the nine San Francisco Bay Area Counties<sup>1</sup> formed in 2012 to promote energy and resource efficiency. As one of the state's five Regional Energy Networks (RENs) – with a sixth pending approval – BayREN provides regional-scale energy efficiency programs, services, and resources that reflect the needs of local residents, property and business owners, governments, and more.

## Mission

BayREN is a local government coalition of the nine Bay Area counties supporting communities to equitably achieve California's climate and energy goals.

## Vision

By 2025, BayREN's organization, resources, and programs will evolve to more intentionally integrate equity while filling gaps and addressing barriers to energy efficiency and electrification, as an essential part of meeting State climate and energy goals.

## Year in Review

In 2023, BayREN achieved significant milestones, laying the foundation for a promising future. The year marked substantial growth from reintroducing the BayREN

Business Program to receiving approval for a comprehensive 2024 – 2031 Business Plan that launches four new programs.

Celebrating its tenth anniversary, BayREN affirmed a valuable presence in the energy program landscape as a leader in creating innovative programs and projects. Highlights of 2023 include:

- Approval by the California Public Utilities Commission (CPUC) not only of the Business Plan, but also entrusting BayREN to spearhead a statewide Home Energy Score Program starting in 2026.<sup>2</sup> This approval established BayREN as the first non-utility program administrator (PA) to lead a California-wide program.
- Successful completion of the Resilient Libraries Network Pilot Program resulting in a comprehensive Lessons Learned report and propelling the transformation of six local libraries into Community Resilience Centers.
- Launching the BayREN Existing Building Study to identify information gaps regarding the Bay Area's existing building stock and scalable recommendations for decarbonization. A release of the study will occur in 2024.

Reflecting on its accomplishments, 2023 was a year in which BayREN was able to leverage its robust regional framework for a sustainable future. As Jane Elias, Portfolio Administrator, fittingly states, "2023 was a pivotal year for the BayREN team. Building on more than a decade of BayREN's success,

we celebrated the approval of the eight-year Business Plan by the CPUC which provides the next four years of portfolio funding. We also celebrated Jenny Berg, the woman that established and built up BayREN to be what it is today. BayREN's foundational success and continuous improvement process empowers us to build for a brighter future through our relationships, program portfolio, strategic planning, and intentional involvement of communities within the region."

## Program Success

BayREN's programs demonstrated remarkable success in 2023, furthering the coalition's mission to support local communities to equitably achieve California's climate and energy goals.

The BayREN Business program relaunched in June 2023. By year end, the program processed 67 projects, encompassing a range of measures such as lighting and refrigeration. Notably, 40 of these projects are located in and directly benefit disadvantaged communities.

BayREN's Single Family and Multifamily programs served more than 8,100 households and dispersed more than \$8.75 million in

rebates. Through these upgrade projects, BayREN helped to save 12,010,000 net kWh, which is equivalent to powering 1,094 home's energy use for an entire year, preventing 8,380,069 kilograms (kg) of carbon dioxide-equivalent emissions (CO<sub>2</sub>e)<sup>3</sup> from being emitted into the atmosphere.



*A Bay Area home upgraded with BayREN rebates.*

While the Single Family program experienced success in numbers, the program started a redesign process to better serve moderate-income and hard-to-reach<sup>4</sup> residents in the Bay Area to incorporate the goals of health, comfort, and safety, in addition to energy efficiency.

<sup>3</sup> CO<sub>2</sub>e figures are calculated using the United States Environmental Protection Agency's (US EPA) Greenhouse Gas Equivalencies Calculator.

<sup>4</sup> The CPUC's definition of hard-to-reach customers includes common geographic and language criterion for all customers. In the San Francisco Bay Area, hard-to-reach customers include California Native American Tribes; businesses or homes in disadvantaged communities, as identified by the California Environmental Protection Agency; or, a customer whose primary spoken language is other than English. Additionally, small businesses are only considered hard-to-reach if they have 25 or fewer employees and/or are classified as Very Small; and, operate in leased or rented facilities. For residential customers to be considered hard-to-reach, they must be income-qualified for the California Alternative Rates for Energy, Energy Savings Assistance, or the Family Electric Rate Assistance Programs, and/or live within a rented or leased multifamily property or mobile home.

<sup>1</sup> The nine Bay Area counties are Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma.

<sup>2</sup> Subject to the submission and approval of an Advice Letter containing additional program detail.

The Green Labeling program enabled over 5,600 single family homes to obtain Home Energy Scores and paid more than \$1.2 million in rebates, making it another record-breaking year for program participation and rebate disbursement. Additionally, the program provided more than 320 real estate professionals with green home trainings and tours.

The Water Upgrades Save program completed 63 single family projects and one 19-unit multifamily project.

The Codes and Standards program provided 34 trainings and held four forums with over 1,000 total attendees. Through post-training surveys, 99% of local government staff indicated an increase in knowledge of energy code requirements and best practices for code compliance. In 2023, BayREN’s Codes and Standards Program also decided to include equity in all future analyses of potential energy policies and reach codes. The program also decided to investigate how the Codes Program could further integrate equity into its work, starting with a facilitated equity workshop in early 2024.

BayREN will continue to capitalize on the accomplishments of its programs in 2024 and beyond, enhancing both program design and implementation to better serve the community.

## Gauging our Impact

In 2012, the CPUC issued Decision (D.) 12-11-015 providing the criteria upon which RENs are evaluated.<sup>5</sup> As a REN, BayREN helps to make state policy objectives, such as reducing greenhouse gas (GHG) emissions and increasing energy savings, practical at the local level by conducting three overarching services referred to as BayREN’s Value Pillars. These Value Pillars are evaluated through Value Metrics, demonstrating BayREN’s contributions to reducing GHG emissions, increasing energy savings, and delivering numerous non-energy benefits.

As detailed in the Value Metrics section of this report, these metrics have been reported annually since 2021, reflecting BayREN’s consistent progress across all three pillars. The Value Pillars and Value Metrics are as follows:

1. **Value Pillar 1:** BayREN builds human and organizational infrastructure within local jurisdictions so that Bay Area communities are better able to save energy and reduce GHG emissions.
- **Value Metric 1:** BayREN is suited to serve in this capacity because of the members’ connections to local jurisdictions and their understanding of what is needed by local governments and their communities.



A Rising Sun Center for Opportunity team member tabling at a local event.

2. **Value Pillar 2:** BayREN obtains energy savings locally while also supporting local difficult-to-serve<sup>6</sup> (LDTs) populations.
  - **Value Metric 2:** Local governments have a deep understanding of the needs of their communities. Based on the members (i.e., local government’s) assessment of the needs in their communities, they have identified populations that are in need of additional support, and they are designing program activities to better target these populations.
3. **Value Pillar 3:** BayREN tests innovative solutions that have the potential to help local jurisdictions increase energy savings and reduce GHG emissions.

- **Value Metric 3:** The innovative solutions tested by BayREN have emerged from discussions with local governments and thus represent local needs. These innovative solutions are wholly designed and implemented by the BayREN members, which are themselves local governments, to fill gaps that the members (local governments) identify.

BayREN’s ability to leverage the resources and capabilities of local governments across the nine Bay Area counties remains a key aspect of its effectiveness, enabling it to address various program needs and benefit from the collective expertise and networks of its member agencies.

<sup>5</sup> The criteria are: 1. Activities that utilities cannot or do not intend to undertake; 2. Pilot activities where there is no current utility program offering, and where there is potential for scalability to a broader geographic reach, if successful; and 3. Pilot activities in hard-to-reach markets, whether or not there is a current utility program that may overlap. Note this criterion was reiterated in D.19-12-021 and expanded the utility programs to also include CCA programs.

<sup>6</sup> BayREN’s programs seek to serve underserved customers in the Bay Area. BayREN uses the term LDTs to specifically define Bay Area populations that have been defined as underserved by the Bay Area local government members. The definition varies by program (i.e., sector). We note that in D. 23-06-055 (June 29, 2023), the CPUC defined the term “underserved”; however, this occurred after the approval and implementation of BayREN’s 2023 programs. BayREN plans to make changes to its LDTs definitions, if needed, in 2024, to address differences, if any, based on the CPUC’s definition of underserved.



## Cooking with Chef Tú David Phu

In 2023, BayREN hosted a Vietnamese-language event in San Jose featuring Celebrity Chef Tú David Phu. Chef Tú taught attendees how to make bánh xèo, or Vietnamese crepes, and demonstrated the benefits of induction cooktops. The crowd was intrigued as Chef Tú showcased the precise temperature control of induction cooking, which empowers home cooks to simmer without burning food or achieve a satisfyingly crispy finish! Chef Tú even touched the cooktop to show how it transfers heat directly to the pan, making it safer than gas stoves, especially around children. Induction cooking is more energy efficient than gas, as the heat is generated directly in the cookware. This also leads to faster cooking times and less heat wasted as you cook! Cooking on induction also reduces risk of exposure to pollutants emitted when cooking with gas. The aspect that excited most everyday cooks was the simple clean-up process, as induction cooktops have a flat surface and no metal grates, resulting in more time saved.



*Watch Chef Tú as he demonstrates his famous [bánh xèo recipe.](#)*



## Portfolio Overview

### Residential Sector

BayREN's three residential programs seek to provide an affordable and feasible pathway for local communities to benefit from ratepayer programs, rebates and financing to make homes more energy-efficient, healthy, and resilient.

#### Single Family Home +

Through the Single Family Home+ (Home+) program, BayREN provides a variety of service offerings to Bay Area single family homeowners and renters - including rebates for qualifying measures, an online energy evaluation, no-cost energy efficiency kits, in-home education, and direct install of introductory efficiency services. A central part of this program is free energy advice from accredited building performance professionals (Energy Advisors) that work hand-in-hand with customers through the entirety of their energy retrofit project. The Energy Advisors provide unbiased advice, education about the co-benefits of energy efficiency - including health, support with contractor selection, and installation best practices. Program participants work with Home+ participating contractors who are trained in building science, and who are well versed in maximizing energy savings and non-energy benefits. Energy Advisors also refer customers to other complementary programs that may be more appropriate. Apart from rebates, the Energy Advisor service continues to be our customers' most valued BayREN offering. As the program undergoes a redesign process inspired in 2023, it aims to bring the most valuable customer offerings forward.



*Heat pump condenser.*

#### Green Labeling

The Green Labeling program builds on BayREN's work in the single-family market by focusing on other market actors: real estate professionals and Home Energy Score (HEScore) Assessors. Targeted trainings are provided to realtors, appraisers, and lenders to increase their ability to understand, market, and evaluate energy efficient and green homes. Also through this program, HEScore Assessors are provided training on the Department of Energy's (DOE) HEScore and are eligible for a rebate for each subsequent score conducted. The goal of the program is to establish integrated, standardized, and aligned green labeling to increase awareness and transparency of residential energy information, thereby supporting and increasing energy savings in the single-family program. Celebrating its third consecutive record-breaking year in program participation, the program aims to innovate new avenues for engaging both new and existing audiences.

### Bay Area Multifamily Building Enhancements

The Bay Area Multifamily Building Enhancements (BAMBE) program design aims to engage multifamily property owners and managers who face barriers to participation in rebate programs. The program offers no-cost technical assistance and rebates for multiple-measure energy upgrade scopes that save 10% or more of the whole building's energy usage. These upgrades not only benefit residents by reducing indoor air pollution and harmful health impacts, but they also potentially lower or stabilize energy bills and reduce GHG emissions. In 2023, the BAMBE program implemented a redesigned, equity-focused incentive structure that provides greater rebates to properties in areas (census tracts) experiencing disproportionate heat, health, and housing cost burdens. The new program design proved successful as over 50% of projects that reserved rebates in 2023 fell in at least one or more of these three burden zones. Looking ahead, the program aims to continue increasing participation of multifamily properties in burdened zones.



*A San Francisco apartment building that received energy and comfort upgrades through the BAMBE program.*

### Commercial Sector

#### BayREN Business

In June 2023, BayREN's Small and Medium Business program, also known as BayREN Business, underwent a transformative redesign, promoting a refreshed dedication to BayREN's mission of advancing energy efficiency among hard-to-reach businesses. This shift focused the program on addressing the distinctive needs of hard-to-reach businesses, introducing fresh eligibility criteria and incentive structures to amplify its impact. Employing a pay-for-performance (P4P) program design, BayREN Business furthers significant energy savings that not only drive tangible results, but also foster a culture of accountability and sustainability among participating businesses. With its exclusive focus on hard-to-reach businesses, BayREN Business is on track to support a robust recovery through directing both resources and innovation to a market segment that has experienced significant recent and historical challenges.

#### Cross Cutting Sector

BayREN's portfolio includes two programs that work across sectors: the Codes and Standards program and the Water Upgrades Save program. The Codes and Standards program provides support for development and implementation of energy codes and policies related to all building types, from single family residences to large institutional buildings. The Water Upgrades Save program works with municipal water utilities to provide water savings across building categories. These cross-cutting offerings provide different approaches to saving energy and complement other BayREN programs.

## Codes and Standards

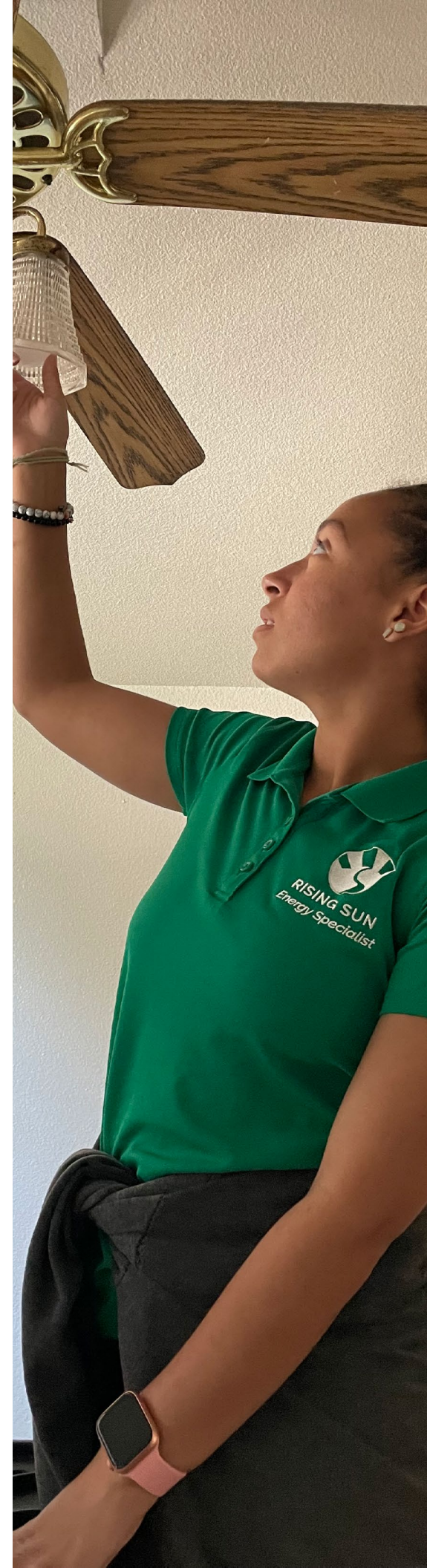
BayREN's Codes and Standards program assists local governments with adoption of local energy policies and improving energy code compliance. These activities increase the energy performance of buildings and decrease their GHG emissions. The program also serves as a bridge between local governments and state agencies, such as the California Energy Commission, to ensure that the voice of local governments is heard when state policies are developed or updated.

The Codes and Standards program has successfully adapted over the past ten years in response to changing state and local goals and technology improvements. Trainings for local government building department staff address current topics such as electrification and accessory dwelling units. Regional Forums provide in-depth information on timely subjects such as building decarbonization and are attracting record numbers of participants. Resources available to local governments now cover new technologies such as heat pump water heaters. As we approach the target dates for many significant environmental initiatives, these needs will continue to evolve, and the program will thoughtfully address new challenges and serve as a valuable resource during its second decade of program implementation.

## Water Upgrades Save

BayREN's innovative water-energy nexus<sup>7</sup> program provides turnkey utility investment and project installation services to Bay Area municipal water utilities seeking to offer their customers easy access to water-related utility bill savings. It is the first inclusive utility investment program in California. In 2023, Water Upgrades Save served single family and multifamily customers in the cities of Cloverdale and Sebastopol. Designed to provide centralized utility investment capital and program administration to participating water utilities, this program has influence in multiple markets, including renters and low-income households. Water Upgrades Save offers customers a simple and attractive path to install water-saving technologies. Given the program success, additional water utilities are interested in partnering to bring this service to their water customers in 2024.

<sup>7</sup> In California, the pumping, heating, and treatment of water accounts for twenty percent of electricity and thirty percent of non-power-plant natural gas demand. This combined resource opportunity is known as the water-energy nexus.



## Laying the Foundation for Local Climate Leaders

Since 2019, BayREN has partnered with Rising Sun Center for Opportunity's Climate Careers Program to drive climate resilience and create green employment pathways for local youth. BayREN piloted this concept within the Home+ program since the service provided by youth serve residential customers. The Climate Careers program trains participants to deliver Green House Call services to help local residents lower their household energy consumption. During a Green House Call, residents receive no-cost energy kits, which include energy and water conservation measures for their home.

In 2023, the Climate Careers program trained and hired 35 local youth to serve over 2,000 households with Green House Calls. The estimated energy and water savings from the Home Energy Kits equate to an annual reduction of 407,980 kWh of electricity, 3,808,061 gallons of water, and avoidance of 382 metric tons of CO<sub>2</sub>e (MTCO<sub>2</sub>e). This is equivalent to avoiding the CO<sub>2</sub> emissions generated by the annual electricity use of 74 homes. Of the households served, 62% were low-income, and 22% were moderate income. Additionally, 69% of households served were rental units, helping to provide services for a group that often gets left out of building upgrade programs.

The program continues to grow and evolve, as 2023 marked the third year of additional externship offerings for Climate Careers youth. Externships provide an additional 140 hours of paid work to prepare youth for employment in the green sector. This proven track record of success shows that the program is a pillar in the Bay Area. To ensure the continual growth and collaboration between Rising Sun and BayREN, Climate Careers has been layered into BayREN's approved 2024 – 2031 Business Plan as a new workforce, education, and training program. This is an important addition to the BayREN portfolio to push towards the collective goal of creating a greener California!





# 2023 Programs

## 2023 Programs

### Single Family Home+

The Single Family Home+ program contributes to the overall BayREN mission by supporting residents in their decarbonization journeys - an essential part of meeting the State's climate and energy goals. The Home+ Program takes a modular approach to customer engagement and allows for phased improvements while delivering technical assistance and guidance for sequencing improvements over time. With the launch of several local, statewide, and federal programs, BayREN has referred customers to these new programs or integrated them into rebate packages offered through BayREN to further leverage available funding and financing. Additionally, Home+'s role will evolve, focusing on programs that suit them best. New resources come with the launch of TECH Clean California (TECH) and the Self-Generation Incentive Program (SGIP), both of which include additional equity benefits. Also, there is the expected launch of the state's Equitable Building Decarbonization Program as well as the federal Inflation Reduction Act (IRA) with upfront discounts.

The Home+ program continues to offer an electrification pathway that allows eligible customers to receive incentives for switching from natural gas fueled space heating, water heating, clothes dryers, and cooking appliances to cleaner, highly efficient electric alternatives. Due to partnerships with local Community Choice Aggregators (CCAs) and the availability of rebates from TECH, the program saw significant increases in electrification measures such as heat pump HVACs (156% increase from 2022), heat pump

water heaters (180% increase from 2022, and induction ranges and cooktops (110% increase from 2022). BayREN also continued its partnership with StopWaste (as the Alameda County BayREN member) to administer the Mid-Stream Heat Pump Water Heater project designed to increase the number of heat pump water heaters (HPWH) in the region.

BayREN's Home+ program was developed to serve moderate-income and hard-to-reach residents in the Bay Area. In 2023, the Home+ program initiated a redesign process to better align programmatic outcomes with program goals. The new program, anticipated to launch in late 2024, will strive to better achieve the goals of health, comfort, safety, and savings through energy upgrades for these target populations: moderate-income, limited English proficiency, and pollution burdened areas. The program will also be designed to complement other existing programs.

### Energy Benefits to Customers

In 2023, 5,710 homes made 9,346 energy efficiency and electrification improvements through the Home+ program, resulting in incentive payments of \$6.25 million. Additionally, 2,004 single family homes were upgraded with direct install and energy efficiency kit measures such as faucet aerators, high efficiency showerheads, LEDs, and advanced power strips. Participants saved a total of 9.3 NET GWH and 0.1 net million therms, with over 90% of gross GWh attributed to fuel substitution measures.

## 2023 Home+ Focus

- Refocus program to serve local hard-to-reach customers
- Collaborate with local partners on regional outreach
- Partner with local and state-wide programs

## 2023 Home+ Achievements

- Provided \$6.25 million in rebates
- Upgraded 5,710 homes
- Installed 9,346 measures
- Conducted 2,004 Green House calls; 47% respondents came from households where a non-English language is spoken; 78% of respondents identify as low or moderate income

## Non-Energy Benefits to Customers

The Home+ program offers an Energy Advisor service, which operates as an impartial help line and directs residents to resources, whether Home+ or other complementary programs. Energy Advisors responded to 5,508 inquiries and made over 360 referrals to complementary programs.

## Gaps Being Filled

Home+ continued to address local hard-to-reach populations in the following ways:

- Hosting an induction workshop in Vietnamese with celebrity Chef Tú David Phu. The event attracted a crowd of over 160 community members eager to learn how to use induction cooktops to create traditional Vietnamese dishes including bánh xèo or Vietnamese crepes.
- Partnering with Rising Sun Center for Opportunity's Climate Careers to employ local youth to conduct basic home energy assessments and install energy and water saving fixtures, called Green House called. In 2023, 2,004 Green House Calls were completed both in-person and virtually via an online survey and follow-up call. If conducted in-person, residents received energy efficient devices in real time, having them installed in the moment. If conducted virtually, residents received a customized energy efficiency kit through the mail. The partnership focuses on underserved audiences, resulting in 47% of respondents coming from households where a non-English language is spoken

and 78% of respondents identifying as either low income or moderate income.

## Local Government Levers and External Partnerships

The local governments that comprise BayREN have been utilizing their credibility, partnership building capacity, and access to data to promote the program. For Home+, our county partners were able to send letters on local government letterhead to hard-to-reach audiences (moderate income and languages other than English) to inform them of program offerings. Often, these letters included mentions of complementary programs such as Green House Calls, and promoted relevant webinars, including in-language events.

The anticipated launch of several state and federal energy efficiency and electrification programs has also increased demand for trained and vetted contractors to install these measures. To help facilitate this market development, the counties continued to build relationships with local contractors and trade associations within their jurisdiction. They sent mailers promoting events that provide information on all the upcoming incentive programs to all eligible contractors in their county.

## Future Opportunities

### BayREN Value Pillar 1: Building Organization & Human Infrastructure

BayREN will continue to work with other program partners, especially the Mid-Stream HPWH program and the TECH initiative, conducting outreach to manufacturers and distributors. Currently, these parties are

participating in an Energy Star Manufacturers Action Council program to provide online trainings to installers. BayREN has recognized the need to provide information about programs and technical trainings through community-based trusted messengers and in different languages. To meet this need, BayREN is working with cities and counties to partner with community-based organizations that can bolster the "trusted messenger" pipeline, especially for hard-to-reach populations. To address the need for more inclusive programming, BayREN is partnering with well-known in-language and in-culture media platforms to build more effective and relatable campaigns on energy, health, and resilience. BayREN partners with counties and cities organizing events catered to non-English speaking communities, such as induction cooking demos in Spanish and Vietnamese.

Rising Sun continues to grow their externship program to provide Climate Careers youth with workforce development opportunities. Participants who successfully complete Rising Sun's Climate Careers summer program can apply for an additional 140 hours of paid, real-world, work experience with a clean economy-related organization. This additional work experience helps youth participants to build social capital, demonstrate their abilities to perform in a professional environment, develop additional transferable skills, and expose them to additional employment pathways. In 2023, the Climate Careers program partnered with 13 organizations, including GRID Alternatives, BayREN, Redwood Energy, the East Oakland Collective, and others, to place 18 youth participants in real world work scenarios.

## BayREN Value Pillar 2: Serving Local Difficult-to-Serve Populations

BayREN conducted a series of program evaluations throughout 2022 and 2023 to assess how the Home + program can better serve local difficult-to-serve populations. The evaluations identified several gaps and opportunities for certain participants, including moderate-income homeowners, non-English speaking households, and households that live in pollution-burdened areas. The evaluations also affirmed a number of significant barriers to energy upgrades for difficult-to-serve populations, including upfront costs, lack of access, a difficult-to-navigate rebate program landscape, and rental status. Aligning with BayREN's 2024-2031 Strategic Business Plan, BayREN has initiated a program redesign process for Home+ to better address these barriers and orient towards equity-aligned goals.

BayREN's role will continue to evolve to better serve as an information source directing people to the relevant programs. Given that



*Youth participating in the Climate Careers Program carrying energy efficiency kits.*

many of these programs layer in Home+ rebates, connect to financing and other private capital, and/or offer additional non-energy services the redesign with help to maximize the use of rate payer funding while also better aligning with BayREN's goals. BayREN will continue to coordinate with local, state, and federal programs directing customers towards incentives best suited for their situation. With state (TECH and SGIP) and federal (IRA) incentive programs designed to include low- and moderate-income rebate adders for participants, as well as some CCA programs offering direct install for these same populations.

## BayREN Value Pillar 3: Testing Innovative Solutions

BayREN is focused on testing innovative solutions to improve the customer journey for hard-to-reach homeowners. This approach requires research and evaluation to determine what works best for audiences with different priorities and levels of awareness. The Home+ program aims to continually integrate lessons learned from research and evaluation into the program design and marketing, education, and outreach campaigns. BayREN also plans to conduct research and pilot programming to improve landlord and renter engagement in residential decarbonization programs. Additionally, as more details about new state and federal programs emerge, BayREN will strive to minimize the work and confusion that is often associated with the layering of multiple rebate programs.

## Green Labeling Program

In California, improving the energy efficiency of existing residential buildings is an urgent priority for state, regional, and local governments. Making significant and lasting reductions in residential energy use requires sustained, multifaceted interventions to motivate the public to invest in energy efficiency and other green home improvements. In support of goals to improve the energy efficiency of existing buildings, BayREN's Green Labeling program trains real estate professionals to understand the benefits of an energy efficient home, effectively market green homes at the time of sale, and communicate with their clients about the benefits of energy efficient upgrades. The program also promotes and scales mechanisms (e.g., the DOE's HEScore) that make information about home energy assets transparent.

This infrastructure within local communities encourages energy efficient investments at critical moments—the time of a home's sale, before a major renovation, or as a starting point to a homeowner's energy efficiency journey. Making these investments at critical points in time will have a long-term benefit to both the buildings and the community-at-large.

## Gaps Being Filled

While homeowners may know that their house is drafty or uncomfortable, they may not know exactly where to begin to make energy efficiency improvements, or how their home compares to similar ones. Full energy audits can provide a wealth of detailed

information, however the cost and length of time to complete can be a barrier to wide scale adoption. Some audit reports do not provide for an easy to understand, direct comparison between homes. The HEScore is a low-cost tool to close this information gap with its 1 to 10 score. The HEScore and report can be useful when buying or selling homes as a comparison tool or to identify improvements that can be made before embarking on a home renovation. The HEScore is only offered through BayREN.

In addition to a HEScore, the Green Labeling program offers an electrification checklist. This checklist that fills a gap in training the current workforce on newer electrification technologies and what makes a house a good fit for the switch from gas to high efficiency electric appliances. The collection of information through the HEScore and the electrification checklist provides accurate information about the Bay Area's housing stock that can help inform policy and how best to target homes for efficiency upgrades.

## Piloting of Activities

The Green Labeling program launched its electrification checklist in August 2020 as an addendum to the HEScore. This pilot was developed in response to the State's efforts to decarbonize buildings and Assessors' interest in learning more about electrification. To complete the checklist, Assessors collect additional data points that relate to the home's readiness for electrification such as electrical panel capacity, stove and dryer fuel types, and information about the location of the water heater. Based on this data, Assessors are trained on what makes a home

a “good” or a “great” fit for electrification recommendations. If the checklist is completed, the Assessor receives a \$50 bonus incentive per home. In November 2020, the City of Berkeley made the electrification checklist a mandatory part of its Building Emissions Savings Ordinance (BESO).

In 2023, Assessors completed checklists with 91% of HEScores (compared to 84% in 2022). The total number of checklists collected is now over 13,700. Trends continue to show an increase in recommendations for heat pumps and induction cooking, with induction cooking rising to the third most common recommendation in the program. Additionally, homes that received an electrification checklist were more likely to be recommended for induction stoves and heat pump heating/cooling, water heating, and clothes drying than those that did not receive a checklist. The electrification checklist will continue to be offered as an optional addendum to the HEScore through BayREN.

### Local Government Levers and External Partnerships

The Green Labeling program utilizes local governments for outreach and relationship building. As the audience for the HEScore largely overlaps with the Home+ program, local governments discuss the HEScore at homeowner workshops. The program also relies on local governments for communication and partnership with local associations of Realtors. This relationship building is useful in finding co-hosts for real estate trainings and helps develop local realtors as BayREN stakeholders who may

inform their clients about HEScore, Home+ rebates, and other BayREN programs.

Additionally, the Green Labeling program works closely with jurisdictions who have or are considering using HEScore as part of a mandatory ordinance, such as the City of Berkeley’s BESO and the City of Piedmont’s existing building reach code, on how the HEScore helps them achieve their goals. As such, there is ongoing collaboration with the BayREN Codes and Standards program.



*A heat pump water heater installed in a Bay Area property.*

### Future Opportunities

#### BayREN Value Pillar 1: Building Organizational & Human Infrastructure

In 2023, the Green Labeling program continued to build the capacity of real estate professionals to accurately value and market

energy efficiency in single family homes. It continued to offer popular real estate trainings and developed new trainings to meet market demand. These real estate trainings focused on hands-on, in-person learning opportunities, including National Association of REALTORS® (NAR) Green Designation classes, two induction cooking demonstrations specifically for real estate professionals, and three green home tours. Overall, the Green Labeling program trained 329 real estate professionals across 27 events. The program also increased the number of participating Assessors to 54, up from 50 in 2022.

#### BayREN Value Pillar 3: Testing Innovative Solutions

In 2023, the Green Labeling program continued to assess the HEScore effectiveness as a tool for increasing energy transparency in single family homes. BayREN’s program received its second DOE HEScore Partner Innovation Award recognizing its work on incorporating the State’s goal of electrification into HEScore and corresponding report. To further this goal, the program also began a comprehensive redesign of the HEScore report which is expected to launch in the first quarter of 2024.

In the theme of innovation, as part of its 2024-2031 Business Plan, BayREN proposed a statewide expansion of the successful HEScore portion of the Green Labeling program. Home Energy Score California is estimated to launch in 2026 with the goal of furthering the work on energy transparency and consumer protections of labeling throughout the state. Prior to launch, BayREN will conduct a series of outreach studies to develop the program design of HEScore California.

### 2023 Green Labeling Focus

- Increased awareness of HEScore and electrification
- Launched a new score database
- Focused on hands-on learning for real estate professionals
- 54 Participating Assessors

### 2023 Green Labeling Achievements

- Provided 5,622 Homes with a HEScore
- Completed 5,141 Electrification Checklists
- Paid \$1.28 million in incentives



## Educating Real Estate Professionals as Champions of Sustainability

A common saying amongst real estate professionals is, “every house has a unique story.” In BayREN’s Green Labeling program, we’re equipping agents with the skills to convey the narrative of a green home. To bridge the gap between classroom learning and practical application, the program introduced a new event series titled Green Home Tour for Realtors. In 2023, real estate agents explored homes in Marin, Alameda, and San Mateo counties that had undergone energy efficiency and electrification upgrades. These counties engaged with homeowners to understand their experiences and motivations behind the improvements.

BayREN’s instructors trained agents to effectively market and appraise these green features when selling a home or discussing potential upgrades with clients. The Green Home tours provided an invaluable opportunity for agents to witness induction stoves and heat pumps in action and gain first-hand experience for comfort offered by an energy-efficient home.

## Bay Area Multifamily Building Enhancements Program

The BAMBE program contributes to the overall BayREN mission by reaching multifamily communities that are often underserved by traditional programs. Examples of these communities are small (less than 50 units), owner-occupied, or unsubsidized affordable multifamily (MF) buildings (also known as naturally-occurring affordable housing, or NOAH). In 2023, the BAMBE program officially launched a redesigned incentive structure that more directly centers equity in its delivery of rebates and technical assistance. This includes offering greater rebates for properties located in census tracts experiencing disproportionate heat, health, and housing cost burdens, and for in-unit measures that improve the comfort and safety of tenants. The current program design also incentivizes property owners to upgrade from gas to efficient electric water heating, space heating, and cooking technology by providing additional rebates for electrification measures.

### Energy Benefits to Customers

Since its launch in 2013, the BAMBE program has steadily expanded its reach in the Bay Area multifamily sector. In 2023, the program supported upgrades at 31 properties totaling 2,417 individual units with more than \$2.6 million in rebates being disbursed. These upgrades represent energy savings of more than 2,777 net MWh and 56,757 net therms, accounting for emissions reductions of 869 MTCO<sub>2</sub>e. In 2023, 61% of the completed projects included at least one electrification measure and 86% of reserved projects

include at least one electrification measure. Since the program launched 10 years ago, over 640 properties and more than 47,000 units have received \$36.5 million in rebates. Participating units represent more than 5% of the multifamily housing stock in the Bay Area.

### Non-Energy Benefits to Customers

The BAMBE program provides no-cost technical assistance and, for projects that do not meet eligibility criteria, complimentary referrals. In 2023, over 700 properties representing over 24,000 units submitted interest forms. Of those, the program provided technical assistance to 175 projects (8,687 units), including 14 projects (77 units) that have either reserved a rebate, started construction, or completed all upgrades and received their rebates. Five participants received financing technical assistance from consultants hired by BayREN. An additional 11 projects (704 units) were deemed ineligible and referred to either the BayREN Home+ program or other multifamily programs like MCE, Pacific Gas and Electric Company (PG&E), or local Energy Watch/Local Government Partnership programs.

### Gaps Being Filled

The program’s outreach criteria ensures that equity is prioritized to those multifamily communities that have struggled to access other energy efficiency programs. In 2023, the majority of projects submitted for rebate reservation fell into one or more of the heat, health, and housing cost burdened census tracts which qualified them for higher rebates.

## 2023 BAMBE Focus

- Implemented redesigned incentive structure to increase rebates for residents in census tracts experiencing disproportionate heat, health, and housing cost burdens and for those pursuing electrification
- Prioritized deed-restricted and unsubsidized affordable housing
- Continued to offer phased incentives to assist participants with cash flow-related barriers to entry

## 2023 BAMBE Achievements

- 30 out of 31 completed projects met the local difficult-to-serve definition
- 2,297 out of 2,417 upgraded units met the local difficult-to-serve definition
- Paid \$2.6 million in incentives
- 86% of reserved projects include at least one electrification measure
- 61% of projects completed in 2023 included at least one electrification measure

## Local Government Levers and External Partnerships

BayREN member agencies, viewed as trusted messengers, conducted program outreach using available data. In 2023, BayREN continued to work with two county public health agencies and the Bay Area Air Quality Management District (BAAQMD) to perform outreach for the Bay Area Healthy Homes Initiative (BAHHI). BAHHI leverages the BAMBE program to improve indoor air quality for families over-burdened by air pollution as well as those with family members living with asthma.

BAMBE also worked with Sonoma Clean Power (SCP) to deliver a jointly designed Electric Service Panel Upgrade Pilot that seeks to overcome barriers to electrification by providing rebates for upgrading outdated and insufficient common area and in-unit electric panels. The project helps determine the feasibility of BayREN-CCA funding coordination for upgrading residential electrical infrastructure. This project also increases multifamily renters' access to the benefits of electrification while reducing program duplication through collaboration instead of competition. In 2023, the project completed upgrades at two multifamily sites and developed a project pipeline for 2024.

In the fall, BayREN, in partnership with the Tri-County Regional Energy Network (3C-REN), was awarded the DOE's Buildings Upgrade Prize (Buildings UP). The prize included a \$200,000 cash award and 140 hours of technical assistance provided by the DOE that will be used to expand the program's ability to perform comprehensive building

and transportation electrification while compensating stakeholders and community groups for their valued input on the direction the program takes in the years to come.

## Future Opportunities

### BayREN Value Pillar 2: Serving Local Difficult-to-Serve Populations

Unsubsidized Affordable Housing (UAH), or NOAH, has historically been underserved by multifamily energy programs due to challenges in identification and limited resources for building owners to engage in upgrade projects. Identifying UAH properties has been difficult due to both inconsistencies in defining UAH as well as limited accessible data.

Residents of UAH properties face unique challenges and living conditions. The properties often include long-term residents, with many residing in multi-generational households. Despite living in crowded conditions, UAH residents share a strong sense of community with their neighbors. Additionally, some UAH renters, particularly undocumented individuals, fear participation in government-run home upgrade programs due to concerns about displacement or eviction.

UAH buildings frequently require maintenance and repairs beyond the scope of traditional energy programs. Issues such as faulty plumbing, inadequate ventilation leading to mold, and water intrusion through the building envelope are common. Incorporating

these insights, BAMBE program staff launched a redesigned incentive structure in early 2023.

The BAMBE, in coordination with 3C-REN, also plans to leverage the Buildings UP award to focus on addressing persistent barriers to multifamily upgrades, including:

- Split incentives among owners and renters
- Concerns about new technologies creating long-term maintenance obligations
- Concerns around building electrification and potential for utility bill increases
- Complexities around funding and installation of building electrification and transportation electrification equipment at existing multifamily properties

### BayREN Value Pillar 3: Testing Innovative Solutions

BayREN first established a partnership with SCP in 2021 to help overcome a substantial barrier to electrification by replacing insufficient and aging electrical infrastructure and funding panel upgrades in multifamily properties. These upgrades are often needed to allow for more efficient electric equipment to be installed (e.g. heat pumps). In 2023, SCP and the BAMBE program served three projects in SCP's service territory.<sup>8</sup> BayREN hopes to replicate and expand this pilot with other Bay Area CCAs to enable more widespread adoption of electrification technology.

<sup>8</sup> SCP's service territory includes Sonoma and Mendocino counties.



## Cesar Chavez St. Apartment Building Embraces Clean Energy Revamp

In 2023, a six-unit apartment building located on Cesar Chavez Street in San Francisco teamed up with the BAMBE program for a transformative remodel. Initially facing a gas supply line location issue, the owner planned to relocate the gas supply line to maintain service. However, with upcoming regulations banning the installation of gas water heaters starting in 2027, the property owner saw an opportunity to get ahead of the curve.<sup>9</sup> With a \$54,375 rebate, the owner replaced natural gas appliances with cleaner all-electric alternatives, significantly enhancing indoor air quality, safety, thermal comfort, and quality of life. The removal of the interior gas distribution system is also enabling the owner to create open concept kitchens for existing renters, most of whom are low to medium income. Other upgrades include heat pump HVAC for added cooling across all six units, in-unit heat pump water heaters serving five apartments, hot water pipe insulation, and electric ovens with induction cooktops for five units. Both common and in-unit electric panel upgrades were implemented for all six units, along with Energy Star refrigerators in three apartments. Additionally, a common area heat pump water heater now serves existing laundry room washing machines. The overall shift towards sustainable energy solutions resulted in a positive impact for the tenants and the building owner.

## Small and Medium Business (SMB) Commercial

Since 2019, BayREN Business has piloted a P4P program for small- and medium-sized businesses. This program design aligns rebate amounts with actual metered energy usage over 12 months and offers several benefits, including the fact that participants enjoy energy savings with low or no upfront costs. Installation contractors, or “aggregators,” can provide flexible solutions, shielding customers and ratepayers from paying for unachieved savings. And, since payable incentives are based on metered results, aggregators are motivated to sustain peak equipment performance over the twelve month monitoring period.

In 2022, after experiencing setbacks from the pandemic, BayREN Business redesigned its program offering to move away from contracting with a sole aggregator. Instead, BayREN Business joined Recurve’s FLEXmarket. FLEXmarket is a demand flexibility platform that enables energy efficiency programs, like BayREN Business, to work with several aggregators to accrue energy savings within predetermined parameters, such as business type.

In 2023, BayREN Business further refined the program’s eligibility criteria in several meaningful ways. First, the program narrowed eligibility to exclusively focus on serving hard-to-reach businesses. Second, to maximize the number of micro and small businesses participating, only businesses with the lowest

energy thresholds were eligible.<sup>10</sup> Third, the program established a list of eligible business types to offer clearer guidance to aggregators.

As a result of these refinements, the program only serves businesses that meet the CPUC’s definition of hard-to-reach, which directly aligns with the goals of RENs.<sup>11</sup> A business is considered hard-to-reach if it is geographically located in a Disadvantaged Community (DAC) *and* meets one of the criteria below:

- Language – Primary language spoken is other than English
- Size – Less than 25 employees and/or classified as “Very Small” (customers whose annual electric demand is less than 20 kW or whose annual gas consumption is less than 10,000 therms)
- Leased or rented facilities – Investments in improvements to a facility rented or leased by a participating business customer.

Alternately, if a business is located outside of a DAC, it must meet all three criteria above to be qualified as a hard-to-reach business. Businesses located in Bay Area’s tribal lands automatically qualify as hard-to-reach.

The program refinement lowered the energy threshold to maximize the number of micro- and small-sized businesses. The annual kWh threshold was reduced from 500,000 kWh to 150,000 kWh. The annual natural gas consumption threshold was decreased by 80% to 50,000 therms or less.

<sup>10</sup> To qualify, businesses cannot exceed annual thresholds for electricity (150,000 kWh) or natural gas (50,000 therms) consumption.

<sup>11</sup> CPUC Energy Efficiency Manual, Version 6, April 2020, P.21

<sup>9</sup> Upcoming zero-NOx regulations by the Bay Area Air Quality Management District will only allow zero-emissions water heaters to be sold and installed in the Bay Area starting in 2027.

The last major update to the eligibility criteria was identifying businesses that are not eligible based on their industry classifications. This update prioritizes hard-to-reach businesses that directly contribute to community welfare, such as grocery and retail stores, auto repair and smog stations, and professional offices. As a result, industrial and manufacturing businesses, multifamily common areas, agricultural production, and standalone parking garages are deemed ineligible for participation.

Relaunched in June 2023, BayREN Business received a total of 83 project applications by the end of the year. Of these, 100% were hard-to-reach projects, with 48% (40 projects) located in DACs. The projects span various business types, including groceries and corner stores, restaurants, beauty salons, automotive repair, and retail.

Additionally, BayREN Business had four projects carried over from the 2022 program year, that were considered non-hard-to-reach and were medium-sized businesses.

Deploying the P4P design via Recurve's FLEXmarket enabled multiple aggregators, each with a unique business model and approach, to support BayREN Business enhancing flexibility. In 2023, BayREN Business engaged with nine aggregators, five of which submitted reserved projects. The active aggregators focused on lighting and refrigeration upgrades. This diversity of implementers better addressed the varied needs of micro and small businesses.

BayREN Business also revamped its quality assurance and quality control processes for projects and incentive payments, as well as an improved budget tracking system. Working with other commercial Program Administrators

(PAs), a comprehensive double-dip check was implemented. The double-dip check is a process to ensure that public funds are not allocated to the same energy efficiency intervention, under the same utility account, from two or more energy efficiency programs. Together, these processes help ensure the protection of ratepayer funds.

Finally, to support aggregators managing their own business' cash flow, BayREN Business issued a 20 percent advance payment. The rest of the reserved incentive is paid out quarterly, and only when actual energy savings occur. In 2023, BayREN Business issued \$1.43 million in incentive payments. An additional total of approximately \$2 million in incentive funds was reserved for payments over each project's 12 month monitoring period.

### Energy Benefits to Customers

BayREN Business projects aim to decrease the amount of energy consumption required to perform core business functions such as keeping food and beverages chilled and lighting over merchandise. By implementing energy-efficient technologies, participating businesses will reduce their overall energy use and GHG emissions.

Projects from 2023 are anticipated to have approximately 1,140,000 kWh in total energy savings. Half of the savings are from hard-to-reach business projects, while the other half of the savings came from the four medium businesses from 2022. As the program shifted its focus from small- and medium-sized businesses to hard-to-reach businesses, which consume less energy and offer lower savings potential, it adjusted its energy savings targets for future program years accordingly.

One of the most immediate benefits of BayREN Business projects is the reduction in energy bills. By using energy more efficiently, businesses lower their utility expenses, resulting in cost savings over time.

### Non-Energy Benefits to Customers

BayREN Business projects provide several non-energy benefits to participants.

- Complementary referrals - BayREN Business staff facilitate connections between businesses and the most suitable efficiency programs. Staff evaluate all leads and, if necessary, direct them to alternative energy efficiency and financing programs that are a better match. In 2023, a total of 14 leads were redirected to other programs, while five leads were successfully converted into BayREN Business projects.
- Improved equipment reliability – Retrofitting involves replacing outdated or inefficient equipment with newer, more efficient models. New lighting and refrigeration equipment incorporate advanced technology and materials that are more durable and less prone to breakdowns or malfunctions. Therefore, BayREN Business customers enjoy a piece of mind that comes with their retrofits.
- Reduced overhead costs – Due to the P4P program design, aggregators are motivated to optimize the performance of equipment by reducing energy waste and improving operational efficiency, thereby reducing maintenance and utility costs.

## 2023 BayREN Business Focus

- Redefine target audience
- Relaunch BayREN Business
- Recruit aggregators that are women- and minority-owned businesses

## 2023 BayREN Business Achievements

- 40 projects in Disadvantaged Communities
- 63 hard-to-reach projects (reserved/completed)
- Estimated 1,140,000 kWh savings
- 5 active aggregators



## Gaps Being Filled

In 2023, BayREN Business stood out as the only energy efficiency program in California serving hard-to-reach businesses with a P4P program design. Due to hard-to-reach businesses' higher acquisition costs and lower potential for energy savings, they have historically received less attention from energy efficiency programs as compared to large commercial and industrial businesses. In 2023, the CPUC directed<sup>12</sup> future downstream commercial resource acquisition programs to use a P4P program design. Since its inception, BayREN Business continues to be the only resource acquisition P4P program delivering excellent energy efficiency services to hard-to-reach – and often hard-to-serve – businesses.

## Local Government Levers and External Partnerships

BayREN Business consistently coordinated with local governments to conduct outreach following the program's relaunch. In the fourth quarter, BayREN Business collaborated with BayREN counties to promote the program, reserving projects in eight of the nine Bay Area counties. Marketing materials were produced in Chinese, English, and Spanish, and were provided to BayREN counties and aggregators. BayREN counties undertook diverse marketing efforts, including purchasing lists of potential hard-to-reach businesses, conducting street campaigns, and engaging local Chambers of Commerce and industry associations. These outreach efforts have contributed to the development of a

robust project pipeline for 2024. Remarkably, Solano County's marketing and outreach efforts alone drove 40 project applications in the first two months of 2024.

In addition, BayREN Business plays an important role in applying P4P program design in real-world scenarios. The program serves as a testing ground for measurement and verification updates developed by the industry working group, CalTRACK. BayREN Business sheds light on areas of P4P that require enhancements and policy clarity through its implementation process. Finally, program staff engage in monthly meetings with other PAs, exchanging best practices, lessons learned, and policy updates.

## Future Opportunities

### BayREN Value Pillar 2: Serving Local Difficult-to-Serve Populations

In 2024, BayREN Business is considering expanding program eligibility to include hard-to-reach and underserved as a prerequisite for program eligibility. Some aggregators are encountering challenges in recruiting hard-to-reach businesses in areas lacking Disadvantaged Communities. To address this, BayREN Business is exploring the new "underserved" category of commercial customers as outlined in a 2023 regulatory CPUC decision.<sup>13</sup>

By expanding the program eligibility to incorporate underserved commercial customers it is possible to extend energy efficiency benefits to more customers



Front entrance of Thai Food Express, a restaurant upgraded through the BayREN Business Program.

traditionally not served in such programs, aiding them in saving energy and costs.

BayREN Business is also increasing efforts to recruit aggregators that are certified Minority- and Women-Owned Businesses. Expanding the aggregator pool will improve access to more hard-to-reach businesses. They could also bring a diverse client-base.

### BayREN Value Pillar 3: Testing Innovative Solutions

Common to large and industrial commercial sectors, the P4P program design is becoming more available to the small-and medium-sized business segment. As BayREN Business is the only program in 2023 to use this design for the small-and medium-sized segments, the program continues to collaborate with

industry experts to refine the P4P program design to improve energy savings accuracy and to increase service to more businesses.

During discussions with local CCAs, interest was expressed regarding collaboration with BayREN Business to mutually promote energy efficiency and electrification programs. The CCA has available funding for HPWH rebates that BayREN Business could leverage. While BayREN Business remains measure agnostic, this presents an opportunity to advocate for an electrification measure.

<sup>12</sup> CPUC D. 23-06-055, P. 41

<sup>13</sup> CPUC D. 23-06-055, P. 47

## A New Flavor of Improvements

In the bustling heart of downtown San Rafael stands Thai Food Express, serving beloved dishes such as red curry, drunken noodles, and papaya salad. Recently, the restaurant embraced a new flavor of improvements - energy efficiency upgrades made through the BayREN Business program. Chatchai Phanphanit, owner of Thai Food Express, upgraded an aging walk-in freezer motor and controller through BayREN Business. The more efficient equipment is estimated to save the restaurant more than \$500 each year. "I was very satisfied with the services offered through BayREN Business and team," said Mr. Phanphanit. "This Program saves you money and that's a good thing!"



## Codes and Standards

The Codes and Standards program works directly with local government staff. This program contributes to the overall BayREN goal of GHG reductions and energy savings by encouraging local governments to develop and implement state and local energy codes and policies more effectively and efficiently. The program also supports and enables local government staff efforts to draft, adopt, and implement local energy policies and reach codes. These relationships with local governments places BayREN in a unique position to work with local government building departments and energy policy staff.

As part of this work, the Codes and Standards program aims to increase the knowledge that local government staff have of the California Energy Code and other relevant reach codes, and to improve their ability to enforce these codes by sharing best practices and providing resources. Finally, the program works to connect local and state efforts, so that local staff are aware of work occurring at the state level, and state agencies are aware of challenges and opportunities at the local level.

### Gaps Being Filled

BayREN's Codes and Standards program has several activities underway, all designed to fill gaps that our local government members have identified. For example, trainings are almost exclusively for local building department staff and are designed to recognize and address their constraints. Each training is relatively short (60-90 minutes) and focuses on best practices and approaches that attendees can use to make the most out of available time. In

2023, BayREN provided 34 training sessions, of which nine focused on updates to the Energy Code. The program also developed and offered a new course titled "Heat Pump HVAC for Building Departments" to complement our "Heat Pump Water Heaters for Building Departments" training and ensure that building department staff are conversant with code requirements for these key technologies.

The Codes and Standards program continued to host quarterly Regional Forums for local government staff on topics of interest. Regional Forums provided information and networking opportunities for staff, supporting them in their efforts to develop, adopt, and implement policies and ordinances related to energy use and GHG emissions.

Regional Forums provide information about energy-related topics to local government staff, helping to build their knowledge of these issues, the opportunities they provide, and their complexities. In 2023, BayREN Regional Forums focused on a different challenge or aspect of building decarbonization.

Forum topics for 2023 were:

- Decarbonization – Implications for the Gas System and What Local Governments are Doing
- The Grid: What is it and Should it Shape Policy for All-electric Buildings?
- Building Resilience: Keeping the Lights on in an All-Electric Future
- Residential Electrification in the Real World: Navigating Panels and Permits

The events are free and open to all, and in addition to local government staff, attendees

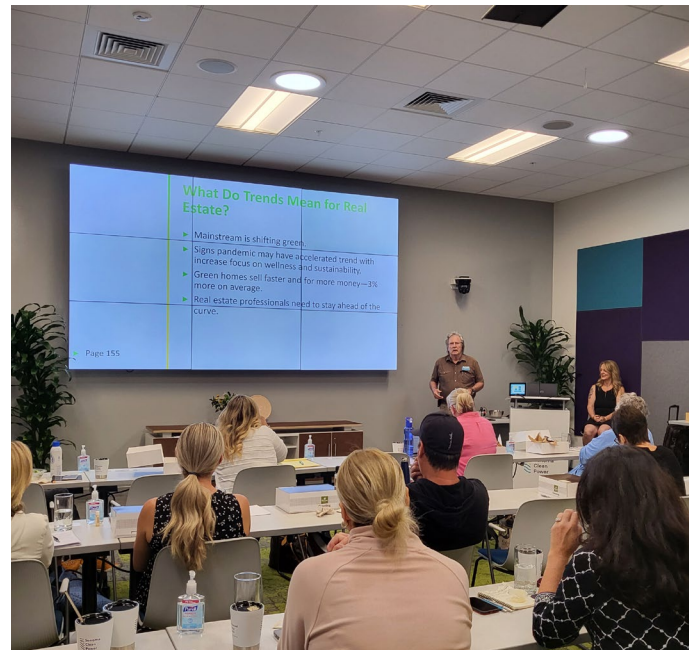
regularly include staff from state and regional agencies, building professionals, energy consultants, and others with an interest in the topic, creating opportunities for connection and cross-education. The year notched a record number of attendees, with around 250 people at each event.

The Codes and Standards Program also offers a number of other resources and services aimed at addressing specific gaps within the energy landscape. For example, the Energy Policy and Reach Code Working Group provides a space for local government staff to convene on a bi-monthly basis to hear about new resources and connect with each other to compare notes and learn from peers. Staff from 28 Bay Area jurisdictions attended one or more of these meetings in 2023.

Permit Guides and Assistance Sheets are provided by the Codes and Standards program. These can be used as handouts at the counter (Permit Guides) or as quick references for building department staff (Assistance Sheets). BayREN also supports the use of electronic tools such as CodeCycle, which provides electronic plan-checking for commercial lighting projects, as well as assistance for building inspectors.

The Municipal ZNE/ZNC Technical Assistance program provides free engineering technical assistance to local governments interested in completing a ZNE/ZNC municipal building project. This technical assistance helps them to minimize energy use and find opportunities for renewables that generate energy. In 2023, the Codes and Standards Program completed the Resilient Libraries Network pilot, which explored how to integrate resilience planning

together with energy efficiency and building decarbonization. Six libraries received assistance through this effort. Next year, this type of assistance is set to transition to BayREN's new Public Sector programs, which will offer an expanded set of services for municipal and special district buildings, further enhancing the program's impact and reach.



Speaker presenting at a BayREN workshop.

## Local Government Levers and External Partnerships

In 2023, the main local government lever used in the Codes and Standards program continued to be the relationships that county members have with local government Sustainability, Public Works, and Building Department staff. These relationships allow for two-way communication, so that local government needs can be communicated directly to BayREN, and staff can be informed of offerings relevant to them.

## Future Opportunities

### BayREN Value Pillar 1: Building Organizational & Human Infrastructure

In 2024, BayREN plans to further improve the value of its Regional Forums for local government staff by offering a mix of virtual and in-person Forums. Using the lessons learned from the hybrid Forums in 2023, our goal is to continue offering high-quality virtual events that are easily accessible to all, while also developing at least one in-person event that will offer increased benefits from in-person interactions and networking.

In 2023, the program initiated a significant Existing Building Study that will extend through 2024. The study will address one gap identified by our local governments: the need for information about the existing building stock and pathways for decarbonizing these buildings. The scope of work for the study was developed in collaboration with local governments. Deliverables associated with the project include a digital dashboard and a series of reports and analyses.

The Codes and Standards program will also continue to work on partnering with local jurisdictions to improve the permitting process. For 2024, this includes building on the work accomplished with the TECH Permitting Pilot. Also included is working with three of the Bay Area counties on the three distinct aspects of permitting: permit fees, education around permitting, and permit processing.

## 2023 Codes and Standards Focus

- Support local Energy Code enforcement by providing resources and training
- Fill knowledge gaps related to energy policies for local government staff
- Assess challenges and needs related to energy improvements for existing buildings
- Complete the Resilient Libraries Network pilot to explore integrating resilience with energy efficiency and decarbonization goals

## 2023 Codes and Standards Achievements

- 1,022 participants in quarterly forums
- 1,013 attendees at 34 trainings
- 67 Bay Area jurisdictions assisted
- 6 Bay Area libraries assisted through the Resilient Libraries Network pilot

## Water Upgrades Save

In California, the pumping, heating, and treatment of water accounts for twenty percent of electricity and thirty percent of non-power-plant natural gas demand. Known as the water-energy nexus, this combined resource opportunity is the subject of CPUC rulemaking proceedings designed to explore how energy savings can be captured through water conservation to inform efficiency program design.

Water Upgrades Save is a regional water-energy nexus program based on three pilots conducted over ten years. The program facilitates utility investment in customer-side efficiency improvements by providing municipal water utilities with project capital and managing program funding, marketing, customer enrollment, project installation, and customer service while giving utilities the power to decide which customers to target and how much to reduce demand. Notably, the capital for this program is provided through a loan agreement with ABAG, not ratepayer funds.

Water utilities can use the program to meet state and local policy goals, support LDTS customers including renters, manage water supply, and produce water and energy savings on the customer side of the meter. The program can be customized to expand or replace current water conservation efforts to best meet each municipality's needs.

Water Upgrades Save helps water managers:

- Assist customers in reducing their utility costs as rates increase
- Increase water and sewer capacity to support population growth
- Reduce or delay the need for infrastructure maintenance and capital improvements
- Support utility goals for customer equity, affordability, and access

### Gaps Being Filled

BayREN's Water Upgrades Save program is designed to bridge the gap between current and future water efficiency targets mandated by state legislation. The State's goal is to "make water conservation a California way of life."<sup>14</sup> In 2023, the program served single family and multifamily customers in the cities of Cloverdale and Sebastopol; developed an onsite leak inspection process; designed a system to expand customer benefits by integrating existing water utility efficiency services; developed offers for municipal, institutional, and business water customers; expanded bi-lingual collateral and video tools; and refined its water utility recruitment process. The regional program uses lessons learned from three pilots to address utility needs for a third-party finance service, a turnkey customer service that does not require utility administration,

and to scale water efficiency outcomes to meet new state and local targets.<sup>15</sup>

Using the authority granted in California Senate Bill 564 — Water Bill Savings Act (2017), the program established the funding, process, and agreements needed to implement the regional project finance service with its fiscal partner, ABAG. The program's completed milestones include expanding program services in partner utility territories; adding leak detection to the onsite assessment process; developing a process to integrate the program with existing utility efficiency services; expanding bi-lingual marketing tools; and refining its water utility recruitment campaign. The program, which started as a pilot in three communities, is now being scaled regionally and is poised to provide a model for a statewide approach.

### Local Government Levers and External Partnerships

In 2023 the main local government lever used in the Water Upgrades Save program was the local government relationships with municipal and other water utilities to promote the program. These relationships resulted in program onboarding meetings with Partner Utilities and introductory meetings with interested water utilities including East Bay Municipal Utilities District. Separately, program staff have participated in the CPUC's Inclusive Utility Investment Equity Committee.

<sup>15</sup> Water Upgrades Save conducted three pilots with the Town of Windsor, City of Hayward, and East Bay Municipal Utility District (EBMUD) before launching the regional program. As of 2019, these pilots completed a combined total of 247 single family and 584 multifamily unit projects. Lessons learned are included in a BayREN 2019 Water Bill Savings Process Evaluation.

## 2023 Water Upgrades Save Focus

- Integrated leak detection
- Supported targeted outreach
- Developed non-residential offers

## 2023 Water Upgrades Save Achievements

- 63 Single Family Projects
- One 19-unit Multifamily Project
- Leak Detection Inspection
- Expanded bi-lingual marketing collateral

<sup>14</sup> California Assembly Bill 1668 and Senate Bill 606 (2018)

## Future Opportunities

### BayREN Value Pillar 1: Building Organizational & Human Infrastructure

As utility enrollment grows, Water Upgrades Save will increase local government organizational and human infrastructure by providing a turnkey investment and project installation service that enables utilities to meet their increasing water conservation targets with minimal staff and budget, freeing utility resources for other important needs.

### BayREN Value Pillar 2: Serving Local difficult-to-serve Populations

Because Water Upgrades Save is a water service and not a consumer loan program, it lowers or removes the upfront cost barrier and requires no new debt for participating water customers. Both property owners and renters can participate. Single family, multifamily, and forthcoming municipal, institutional, and business customers receive utility bill savings right away and use a portion of the savings to pay off the project costs over time, thus decreasing the customer's household or business utility costs while increasing the value of the property with new efficiency upgrades. Future opportunities include establishing long-term strategies for scaling finance service capital to meet program demand.

### BayREN Value Pillar: 3 Testing Innovative Solutions

Customer water conservation programs are traditionally operated by water utility staff, rely on incentives, and require participating

customers to cover any remaining installation cost. This makes water conservation results dependent on utility staff capacity, limited incentive funding, and the customer's ability to pay the remaining post-incentive costs to purchase and install an efficiency upgrade.

As a regional water-energy nexus program, BayREN's Water Upgrades Save facilitates utility investment in customer-side efficiency improvements by providing municipal water utilities with project capital and managing program funding, marketing, customer enrollment, project installation, and customer service while giving utilities the power to decide which customers to target and how much to reduce demand.

Water Upgrades Save water utility customers install water efficiency improvements using a utility-approved on-bill charge that is significantly lower than the estimated savings — so the customer begins saving right away.

New proactive state and local water goals in development through 2027 create an opportunity for additional water and energy savings from customer-side water efficiency projects. Water Upgrades Save provides an on-water-bill financing mechanism that addresses the traditional barriers to water conservation programs, helps utilities prepare for stricter state conservation goals, and enables water customers to reduce utility costs while improving their premises.

Future opportunities include expanding eligible upgrades (such as leak detection/repair) and coordinating services with other water and energy efficiency programs.



## Portfolio Outlook for 2024

In reflection of a remarkable year, 2023 stands as a testament to BayREN's commitment to innovation and progress in the realm of energy and sustainability. The milestone celebration of its tenth anniversary not only marked significant achievements but also set the stage for an even more promising collaborative future with RENs across California, in part due to the creation of CalREN — a statewide collaborative for California's RENs. As Laurel Rothschild, the CalREN Facilitator states, "Regional Energy Networks are an integral component of the California EE landscape. CalREN enables RENs to build on their collective successes, working together to achieve greater impacts and harness their collective voice as key administrators of energy programs."

# Savings & Expenditures



## Savings & Expenditures

In 2023, BayREN administered two resource programs within the Residential Sector (the Home+ and BAMBE programs) and one resource program within Commercial Sector (BayREN Business) that have reported energy savings. The Home+ program is a deemed program utilizing approved Statewide (SW) workpapers for all savings values. The BAMBE program is a hybrid custom and deemed program utilizing EnergyPro Lite (EPL) to model custom project energy savings and deemed values when applicable. The BayREN

Business program is a P4P program utilizing CalTRACK 2.0 protocols for population-based NMEC to calculate savings based on metered data.

Both Residential Sector programs reported fuel substitution savings as reported by the CPUC-approved Cost Effectiveness Tool (CET). BayREN Business did not report fuel substitution savings.

**Table 1: Electricity and Natural Gas Savings and Demand Reduction (Net)**

Program	Annual Energy Savings – kWh	Lifecycle Energy Savings – kWh	Peak Demand Savings – kW	Annual Natural Gas Savings – Therms	Lifecycle Natural Gas Savings – Therms
<b>Home+</b>	9,017,136.81	127,110,153.48	295.91	88,464.70	979,863.16
<b>BAMBE</b>	2,759,648.13	32,686,750.24	36.07	56,756.58	824,997.04
<b>BayREN Business</b>	1,028,049.58	12,336,594.95	117.35	0	0
<b>Total Portfolio Savings</b>	<b>12,804,834.52</b>	<b>172,133,498.67</b>	<b>449.33</b>	<b>145,221.28</b>	<b>1,804,860.20</b>

**Table 2: Net Energy Savings and Adopted Goals (Portfolio, Non-Codes and Standards)**

Savings Metric	GWh	MW	Millions of Therms
<b>2023 Total Installed Portfolio Savings</b>	13.0	0.449	0.1452
<b>Adopted Goals in CPUC D.21-09-037</b>	11.9	1.1473	0.1472
<b>Percentage of Goal Attainment</b>	110%	39%	99%

## Savings by End-Use

Table 3: 2023 Annual Net Savings by End-Use

End-use Category	kWh	Percentage of Total
Appliance or Plug Load	185,557	1%
Building Envelope	52,622	0
HVAC	6,806,914	52%
Lighting	1,028,050	8%
Service and Domestic Hot Water	2,187,599	17%
Whole Building	2,777,144	21%
<b>Total Portfolio Savings</b>	<b>13,037,885</b>	<b>100%</b>

## Environmental Impacts

Environmental Impacts<sup>16</sup> are shown in Table 4, displayed in carbon dioxide (CO<sub>2</sub>) and nitrogen oxides (NOx) emissions. These results are generated by the CET. The CET is designed to calculate energy efficiency program cost-effectiveness. Although emissions data are available through the CET, CPUC D.12-11-015 does not direct BayREN to track emissions.

Table 4: Environmental Impact (Net Metric Tons of Avoided Emissions)

Annual Results	Annual CO <sub>2</sub>	Lifecycle CO <sub>2</sub>	Annual NOx	Lifecycle NOx
<b>Total Portfolio</b>	2,921	36,293	3	34

<sup>16</sup> Environmental Impacts are Net Annual and Lifecycle Tons of Avoided Emissions

## Expenditures and Commitments

Note: column or row totals may not sum exactly due to rounding to the nearest integer.

Table 5: 2023 Budget and Program Expenditures

Program	Filing Program Budget	Operating Program Budget <sup>17</sup>	Percent of Portfolio Budget	2023 Program Expenditures
Home+	\$9,972,446	\$12,159,286	36%	\$12,031,505
Green Labeling	\$1,321,750	\$3,019,315	9%	\$2,609,257
BAMBE	\$6,901,930	\$7,853,384	23%	\$5,216,048
BayREN Business	\$3,956,347	\$5,983,461	18%	\$3,294,133
Codes and Standards	\$1,799,350	\$2,631,808	8%	\$1,871,971
Water Upgrades Save	\$1,663,850	\$1,827,304	5%	\$1,559,687
PA EM&V	\$293,513	\$293,513	1%	\$293,503
<b>Portfolio Total</b>	<b>\$25,909,186</b>	<b>\$33,768,071</b>	<b>100%</b>	<b>\$26,876,104</b>

Table 6: 2023 Program Expenditures by Category

Program	Administration	Marketing & Outreach	Direct Implementation Non-Incentive	Incentives	Total Program Expenditures
Home+	\$705,469	\$1,483,737	\$3,202,672	\$6,639,627	\$12,031,505
Green Labeling	\$149,163	\$156,493	\$1,055,951	\$1,247,650	\$2,609,257
BAMBE	\$627,989	\$349,712	\$2,099,560	\$2,628,870	\$5,706,132
BayREN Business	\$415,310	\$110,370	\$1,337,955	\$1,430,499	\$3,294,133
Codes and Standards	\$367,174	\$0	\$1,504,798	\$0	\$1,871,971
Water Upgrades Save	\$195,159	\$281,236	\$1,083,292	\$0	\$1,559,687
EM&V	\$0	\$0	\$0	\$0	\$293,503
<b>Portfolio Total</b>	<b>\$2,460,264</b>	<b>\$2,381,548</b>	<b>\$10,284,228</b>	<b>\$11,946,646</b>	<b>\$27,366,188</b>

<sup>17</sup> On February 21, 2023, Administrative Law Judge Julie Fitch issued email correspondence confirming approved but unspent 2022 energy efficiency funds approved in response to the September 1, 2021, Budget Advice Letters may be spent in Program Year 2023.

Table 7: 2023 Committed and Unspent Uncommitted Funds

Program	Operating Program Budget	2023 Program Expenditures	2023 Committed Funds	2023 Unspent Uncommitted Funds
Home+	\$12,159,286	\$12,031,505	\$105,663	\$22,118
Green Labeling	\$3,019,315	\$2,609,257	\$231,274	\$178,784
BAMBE	\$7,853,384	\$5,216,048	\$2,622,642	\$14,694
BayREN Business	\$5,983,461	\$3,294,133	\$2,186,173	\$503,155
Codes and Standards	\$2,631,808	\$1,871,971	\$759,836	\$1
Water Upgrades Save	\$1,827,304	\$1,559,687	\$87,347	\$180,270
EM&V	\$293,513	\$293,503	\$0	\$10
<b>Portfolio Total</b>	<b>\$33,768,071</b>	<b>\$26,876,104</b>	<b>\$5,992,935.00</b>	<b>\$899,033</b>

Table 8: Pre-2024 Unspent and Uncommitted Funds to Offset 2024-2027 Revenue Recovery

Program	Prior Year Funds for Offset	2023 Unspent Uncommitted	2024-2027 Offset
Home+	\$0	\$22,118	\$22,119
Green Labeling	\$0	\$178,784	\$178,784
BAMBE	\$668,773	\$14,694	\$683,467
BayREN Business	\$0	\$503,155	\$503,155
Codes and Standards	\$0	\$1	\$1
Water Upgrades Save	\$0	\$180,270	\$180,270
EM&V	\$99,754	\$10	\$99,764
<b>Portfolio Total</b>	<b>\$768,527</b>	<b>\$899,033</b>	<b>\$1,667,560</b>





# Metrics

## Metrics

### Value Metrics

BayREN’s Value Metrics – based upon three overarching services referred to as BayREN’s Value Pillars – were proposed in 2021 to better track the unique value BayREN provides to the region and to the state. The Value Pillars, Value Metrics, and 2023 achievements are provided below, grouped by sector.

### BayREN Value Pillars

As a REN, BayREN helps to make state policy objectives such as reducing GHG emissions and increasing energy savings practical at the local level by conducting three overarching services:

1. BayREN builds human and organizational infrastructure<sup>18</sup> within local jurisdictions so that Bay Area communities are better able to save energy and reduce GHG emissions.
2. BayREN obtains energy savings locally while also supporting local difficult-to-serve populations.
3. BayREN tests innovative solutions that have the potential to help local jurisdictions increase energy savings and reduce GHG emissions.

### Portfolio Level – All Sectors

Metric	2023 Achievements
Number of water utilities offering programs with BayREN tariff on-bill mechanism	2
Amount of regional funds allocated to support water/energy projects	\$1,000,000
Number of realtors and appraisers green certified (e.g., “National Green Certified Real Estate Professionals”)	85
Number of local lenders trained	9
Percent of local lenders trained who report an increase in knowledge about energy efficiency financing options	100%
Water Energy Nexus Program Pilot <sup>19</sup> used regionally to meet State water goals	Mid-point evaluation completed to assess implementation and share lessons learned

<sup>18</sup> The CPUC uses the term capacity building, which is similar to “building human and organizational infrastructure.” BayREN uses this alternative term since we have been unable to identify a specific CPUC definition for capacity building, and therefore are unable to identify whether or not these activities align. Note that the utilities have conducted some capacity building activities in prior years under their local government partnerships, but these activities are currently limited (and are constrained by IOU directives)

<sup>19</sup> BayREN Water Upgrades Save transitioned from a pilot program to a regional program in 2021.

Metric	2023 Achievements
Water Energy Nexus Program Pilot <sup>20</sup> able to report energy and water program metrics data using agreed upon protocols.	Mid-point evaluation completed to assess implementation and share lessons learned

## Residential Sector

Metric	2023 Achievements
Number of trained contractors who have performed 3+ projects of decarbonization measures	0
Number of single family moderate income (SFMI) households served	932
SFMI kWh saved	17024.03
SFMI kW saved	2.28
SFMI therms saved	4,900
Multifamily (MF) small and/or owner-occupied buildings served (i.e., local difficult-to-serve)	115
MF small and/or owner-occupied tenant units served (i.e., local difficult-to-serve)	2233
MF small and/or owner occupied (i.e., local difficult-to-serve) kWh saved	2,559,044.69
MF small and/or owner occupied (i.e., local difficult-to-serve) kW saved	39.17
MF small and/or owner occupied (i.e., local difficult-to-serve) therms saved	29,867.07
Zero Net Carbon (ZNC)/Clean Heating Pathway innovative solution pilot ready to scale	The Clean Heating Pathway was discontinued as a separate subprogram and electrification was fully integrated as a core part of the program offering.
Regional pilot mechanism(s) to make energy assets transparent at time of sale are institutionalized	Green Building Registry (GBR) launched in Q1 2020, and the HES program is still feeding information to the website. The GBR shows the location of all HES in BayREN territory and within the City of Berkeley, the HES reports are downloadable, public information.

## Commercial Sector

Metric	2023 Achievements
Small-to-medium business (SMB) customers served	69
SMB kWh saved	976,647.1
SMB kW saved	111.5

<sup>20</sup> Ibid

Metric	2023 Achievements
SMB therms saved	0
SMB Pay-for-performance (P4P) pilot ready to scale	Achieved. BayREN Business used a P4P program design at scale in 2023.

## Codes and Standards

Metric	2023 Achievements
Number of jurisdictions that adopt and implement reach codes or energy policies	3
Number of jurisdictions that use BayREN guides and tools for code compliance	22
Number of jurisdictions with staff who attend a BayREN energy code training	61
Number of local government staff who indicate an increase of energy code requirements and best practices for code compliance	444
Percentage of local government staff who indicate an increase in energy code requirements and best practices for code compliance	99%
Number of jurisdictions with staff who attend a BayREN forum	65
Number of respondents who indicate they increased their energy policy knowledge	368 (97%)
Number of respondents who indicate forum expanded their energy efficiency networks (helping to build relationships that will enable future energy policy work)	269
Percentage of respondents who indicate forum expanded their energy efficiency networks (helping to build relationships that will enable future energy policy work)	71%

## D.18-05-041 Metrics

BayREN's 2023 D.18-05-041 Metrics are provided in the Annual Report Microsoft Excel Template. This section discusses some of the approaches and assumptions used to develop the metrics by sector.

### Residential Sector

For the following residential metrics, BayREN used data provided by PG&E:

#### Home+

- Percent of participation relative to eligible population.
- Average energy use intensity of single family homes.

#### BAMBE

- Percent of participation relative to eligible population (by unit).
- Average energy use intensity of multifamily units; kWh and Therms.
- Percent of benchmarked multifamily properties relative to the eligible population.
- Percent of benchmarking by properties defined as hard-to-reach.

PG&E does not have a process for collecting total number of eligible multifamily properties, therefore BAMBE used CoStar data to determine the eligible population by property. All other data are derived from BAMBE's internal tracking database(s) and outputs from the 2022 Annual Claims submission submitted on CEDARS.



Attendees celebrating the completion of a BAMBE project in Oakland.

### Commercial Sector

As an NMEC program, BayREN Business reports forecasted savings for the D.18-05-041 metrics, which will then be trued-up to the measured savings after 12 months. Since 2023 was the first year with active projects to report, some metrics cannot yet be reported on as the program is still rolling them out, such as percent improvement in customer satisfaction.

### Codes and Standards Sector

Several metrics from D.18-05-041 are assigned to REN Codes and Standards Programs, and are reported below, along with additional metrics. BayREN, together with the Tri-County Regional Energy Network (3C-REN), proposed new and modified metrics and indicators for Codes and Standards in the September 2020 ABAL, as allowed by D.18-05-041. These revised metrics are in the Annual Report Microsoft Excel template and detailed below.

### Reach Code Adoption

CPUC D.18-05-41 states that the number of local government reach codes implemented is a joint investor-owned utility (IOU) and REN effort. As such, the IOUs will be reporting on adoption of reach codes throughout the state in their metrics filings, which includes BayREN's metrics. We highlight the adoption of reach codes within the Bay Area during each building code cycle:

- Bay Area jurisdictions that adopted one or more reach codes during the 2016 cycle.
- Bay Area jurisdictions that adopted one or more reach codes for the 2019 cycle.

### Participation in Forums

In addition to the approved metric of the number and percentage of jurisdictions with staff participating in an Energy Policy Forum, we also use the metric of the total number of attendees. In 2022, there were:

- Number of organizations with staff participating in an Energy Policy Forum
- Percent of jurisdictions with staff participating in an Energy Policy Forum.
- Total number of attendees participating in an Energy Policy Forum.

### Jurisdictions Receiving Energy Policy Technical Assistance

This metric calls for the number and percent of jurisdictions receiving energy policy technical assistance. BayREN offers this type of assistance through the compliance and policy support activities described above. (Note that this number does

not include additional types of assistance such as answering questions and providing information to jurisdiction staff.)

- Number of organizations directly engaged in Codes and Standards activities.
- Percent of jurisdictions engaged in Codes and Standards activities.

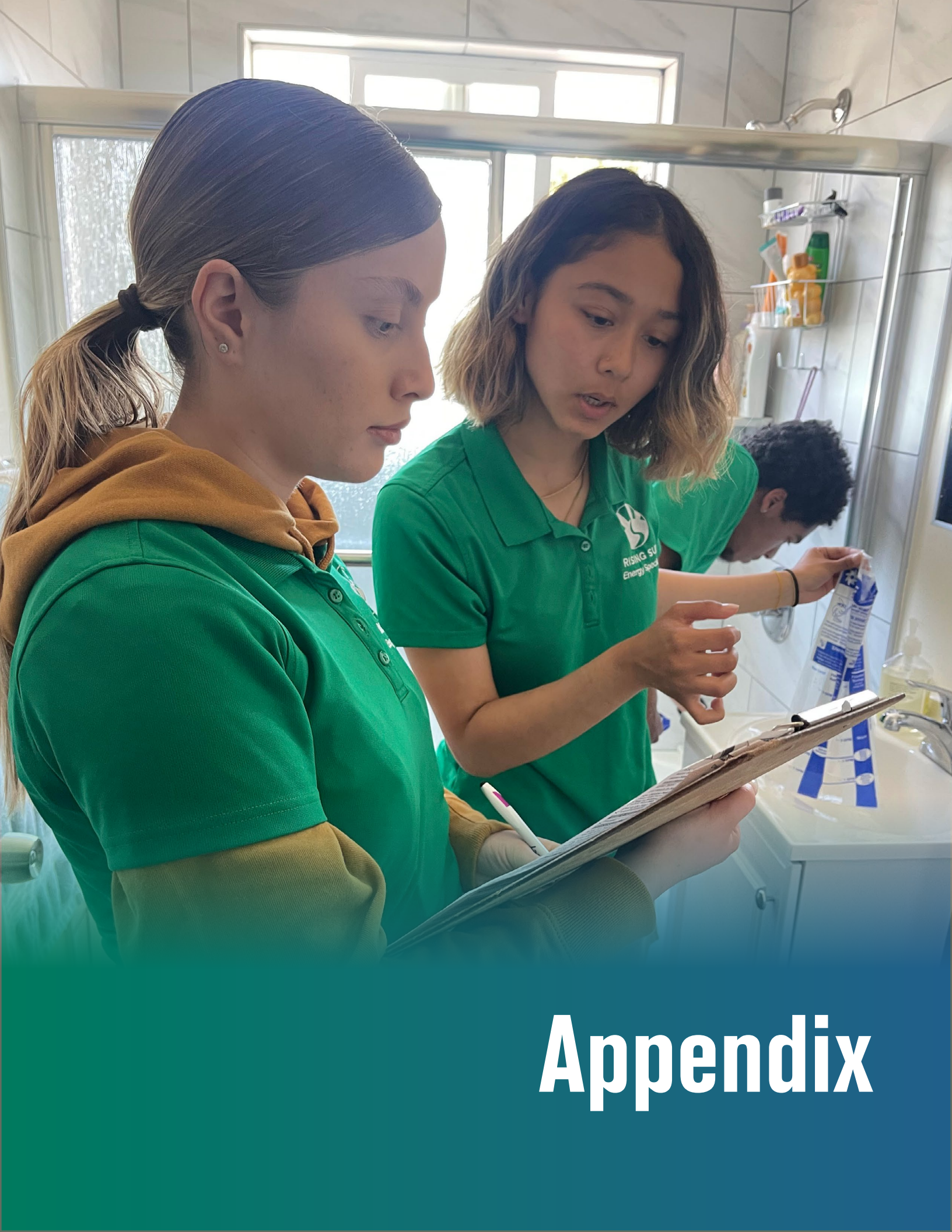
### Buildings Receiving Enhanced Compliance Support

Several BayREN Codes and Standards activities support code compliance for individual buildings.

- Buildings in the Bay Area receiving enhanced compliance support.

### Increase in Closed Permits

BayREN in collaboration with 3C-REN proposed to remove this metric in the 2020 ABAL Filing. This is due in part to the difficulty in obtaining and tracking permit data across hundreds of jurisdictions. In 2019, the program explored how we might structure a project designed to address permit closure rates and concluded: 1) this would be very difficult to do in a measurable way, and 2) would not be an efficient way to achieve the mission of increasing building energy savings through improved code compliance and energy policies.



# Appendix

## Appendix

### Appendix A: BayREN Programs for 2023

CEDARS ID	Program Name	Date Added	Date Removed
BayREN02	Multifamily Building Enhancements Program	1/1/2013	
BAYREN02-A	Multifamily Building Enhancements Program – Clean Heating Pathway	1/1/2020	
BayREN03	Codes and Standards Program	1/1/2013	
BayREN04	Water Upgrades Save	1/1/2013	
BayREN05-A	Evaluation, Measurement & Verification (EM&V)	1/1/2017	
BayREN06	SMB Commercial Program	1/1/2019	
BayREN07	Green Labeling Program	1/1/2019	
BayREN08	Single Family Home+ Program	1/1/2019	
BayREN01	Single Family Home Upgrade	1/1/2013	12/31/2018
BayREN04-1	Multifamily Capital Advance	1/1/2013	12/31/2018
BayREN04-2	Commercial PACE	1/1/2013	12/31/2018

### Appendix B: California Energy Data and Reporting System (CEDARS) Annual Report Template (Microsoft Excel)

BayREN’s 2023 CEDARS Annual Report Template is available publicly online via:

- [CEDARS](#)
- [BayREN](#)