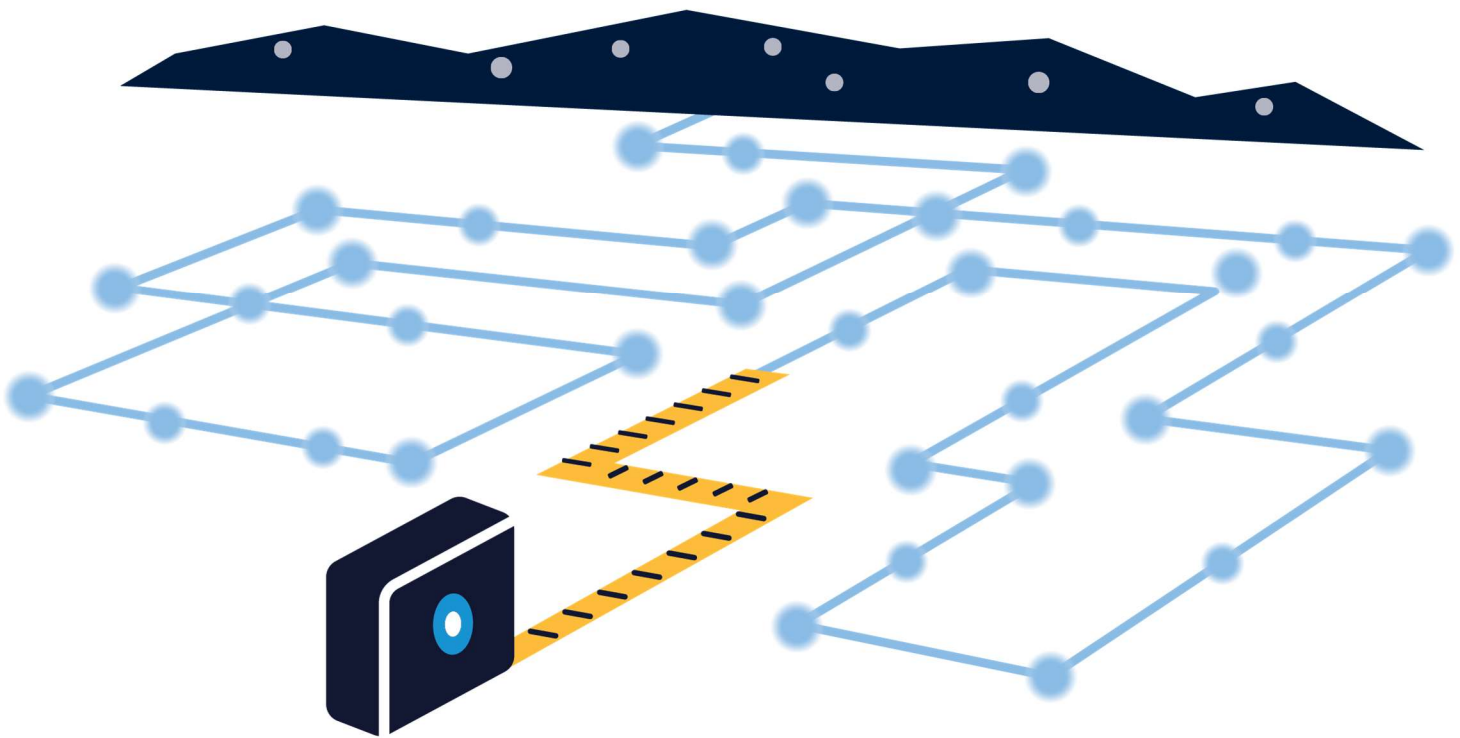




Opinion **Dynamics**



# Assessment of California Community Choice Aggregators Final Report



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This study is covered under CPUC Contract 17PS5017 between Opinion Dynamics and the California Public Utilities Commission (CPUC). Tierra Resource Consultants and Itron, Inc. are subcontractors to Opinion Dynamics for this work.

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## Abstract

California Community Choice Aggregators (CCAs) are organized at the local government level and offer electricity acquired from sources other than public or investor-owned utilities (IOUs) to the residents and businesses in their service territories. This study evaluated the impacts of two CCAs' non-resource activities (i.e., energy efficiency activities or programs that do not directly achieve energy savings but support the energy efficiency portfolio through activities such as marketing, education, or training) on California's energy efficiency (EE) portfolio, particularly those offered in 2016-2017 by Marin Clean Energy (MCE) and Lancaster Choice Energy (LCE).

The evaluation approach included in-depth interviews, qualitative and quantitative data analysis, including a participant survey. Through a channeling analysis, the evaluation team identified a subset of customers who had engaged in CCA non-resource activities and subsequently participated in at least one resource program or energy efficiency program that resulted in energy savings. In addition, the survey identified further energy efficient equipment and behavioral changes and quantified the gross and net energy savings that were achieved outside of CA's EE portfolio.

The channeling analysis showed that 4% of MCE's non-resource participants went on to participate in a resource program by analyzing existing databases. This is likely a drastic underestimate due to incomplete non-resource activity datasets. In addition, approximately half of survey respondents indicated completing at least one energy efficient equipment upgrade in their home or business facility since interacting with MCE after engagement with non-resource activity. The study also found that while non-resource activities do have some influence on customers' decisions to install energy efficient equipment and engage in energy saving behaviors, the main motivational factors tend to be concern for the environment and energy cost savings. To conclude, the study provides recommendations to improve the evaluability of non-resource activities and provide for greater insights into their contributions to the statewide energy efficiency portfolio.

# 1. Executive Summary

The Opinion Dynamics evaluation team, with Itron and Tierra Resource Consultants as its sub-contractors, is pleased to present to the California Public Utilities Commission (CPUC) this Year 1 Assessment of selected activities within the energy efficiency (EE) portfolio of California Community Choice Aggregators (CCAs). This study is referred to as Deliverable 21 in the Group B Contract between the CPUC and Opinion Dynamics. CCAs, which are organized at the local government level, offer electricity acquired from sources other than public or investor-owned utilities (IOUs) to the residents and businesses in their service territories. Electric customers who live in a CCA service territory may choose to purchase their electricity from a CCA, which may offer more competitive rates and/or a higher proportion of electricity generated by renewable resources than their associated investor-owned utility.

## CCA Overview and Study Purpose

The main objective of this evaluation was to understand and measure the impacts of CCAs' non-resource activities on California's energy efficiency portfolio, particularly those offered during the 2016-2017 time frame. The CPUC defines a non-resource program as one that has no directly attributed energy savings but that supports the EE portfolio through activities such as marketing or improved access to training and education.<sup>1</sup> This study broadens the focus from non-resource *programs* to non-resource activities since oftentimes Program Administrators (PAs) engage in discrete actions, as opposed to formally defined programs, that are meant to promote participation in their resource offerings. These activities, in and of themselves, do not produce energy savings, but may do so indirectly.

At the outset of this research, the CPUC and the evaluation team agreed to focus this study on non-resource activities carried out by Marin Clean Energy (MCE) and Lancaster Choice Energy (LCE), the two CCAs that currently offer ratepayer-funded programs to California electric customers. MCE is California's first CCA and is located in the Bay Area. LCE's service territory covers the City of Lancaster located in the high desert region of the Mojave Desert in northern Los Angeles County. Both offer ratepayer-funded resource programs and non-resource activities intended to support their resource programs.

MCE offers a wider variety of non-resource activities compared to LCE because it serves more customers and has provided its services for a longer period of time. It also offered ratepayer-funded programs and non-resource activities in support of these programs during 2016 – 2017, the evaluation time period of this study. Since LCE began to offer ratepayer-funded programs in late 2018, the CPUC and the evaluation team agreed that this study would include an evaluability assessment of the data it collects in support of its non-resource activities to determine if their impacts could be evaluated in the future.

## MCE and LCE Non-Resource Activities

Both MCE and LCE engage their customers through a variety of non-resource activities. MCE provided outreach through its website, trainings, presentations, and electronic newsletters; conducted small business energy audits and multifamily property technical assistance; offered green job and workforce training; and supported participation in the Property Assessed Clean Energy (PACE) program during 2016 and 2017. Because the program data associated with all of these activities varied in quality and quantity, the evaluation team focused on those activities where MCE gathered enough data about participants. The team focused on the following activities for this study:

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<sup>1</sup> <https://www.cpuc.ca.gov/General.aspx?id=4137>

- **MCE's electronic newsletter (eNewsletter):** MCE sends out a monthly electronic newsletter to individuals and businesses who sign up. The publication features stories about sustainable communities, energy efficiency, and its programs that offer rebates for energy saving equipment.
- **CoolCalifornia (CoolCA) Challenge:** MCE enabled customers to sign up for this statewide competition to encourage residents to collectively lower their community's carbon footprint (challenge ran from late 2015 to early 2016).
- **Small Commercial energy audits:** Small business customers can receive a no-cost energy audit that is designed to provide cost-effective recommendations to improve energy efficiency and reduce energy costs.
- **Multifamily program technical assistance:** The MCE Multifamily program offers property owners and managers with technical assistance to improve energy efficiency of tenant units and common areas.

LCE also offers non-resource activities. As noted earlier, LCE did not begin to offer ratepayer-funded energy efficiency programs until after the evaluation period. We therefore limited our examination of LCE's activities to an evaluability assessment to determine if the team could conduct a future study of how its non-resource activities may lead its customers towards PA resource programs, and ultimately, energy savings. The LCE non-resource activities covered in the evaluability assessment in this study are as follows:

- **Energy Advisor Program:** The LCE Energy Advisor program is completely non-resource and it provides residential customers with telephone-based energy audits that help educate customers about ways to reduce energy usage in their homes and about applicable rebate programs offered by IOUs covering the same service territory.
- **Small Commercial Direct Install Program:** LCE also offers free energy assessments through its Small Commercial Direct Install program. Through this program, commercial participants receive low- and no-cost energy efficiency retrofits designed to reduce peak demand and energy consumption. Potential equipment upgrades include LEDs, occupancy sensors, smart power strips, and communicating programmable thermostats.
- **Marketing and Outreach:** LCE also engages more generally in marketing and outreach to educate residents and businesses about the CCA and its program offerings.

## Overview of Evaluation Approach

As part of the first-year assessment of CCAs, the evaluation team conducted a variety of tasks to complete this evaluation. The team first conducted in-depth interviews (please see Appendix B for interview guide) to gain an understanding of MCE's and LCE's resource programs and non-resource activities. Upon completion of the interviews, we submitted data requests to acquire non-resource activity program datasets and supporting program materials to help the team identify which datasets contained the most complete and robust data.

A review of the data and program materials, along with the interviews the team conducted with the MCE and LCE staff and its implementers provided us with the background information needed to develop updated program theory and logic models<sup>2</sup> for selected MCE and LCE programs to explicitly show how their non-resource activities help lead to energy savings for the EE portfolio. The team updated MCE's Multifamily and Small Commercial program theory and logic models. For LCE, the team developed program theory and logic

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<sup>2</sup> Program theory and logic models are used as a graphical depiction that shows the relationship between inputs, activities, outputs, and outcomes of energy efficiency programs.

models for its Energy Advisor and Small Commercial Direct Install programs, as LCE did not have existing models for its programs.

We next conducted an evaluability assessment of the data received from MCE and LCE to determine if the datasets contained the fields necessary to locate participants of non-resource activities in the CPUC program database. The team used the evaluability assessment to determine which non-resource activity datasets the team could use to support additional evaluation activities. Because LCE just started its first ratepayer-funded program in late 2018, the evaluation team used this assessment as an opportunity to provide its staff with suggestions of data fields we recommend they collect to facilitate future evaluation of its non-resource activities.

Following the evaluability assessment, the evaluation team conducted an analysis to determine how many residents and businesses located in MCE's service territory went on to participate in resource programs after their interaction with MCE's non-resource activities. In other words, the analysis looked at the set of customers who engaged in selected MCE sponsored non-resource activities (i.e., activities that do not directly generate energy savings) and identified the subset who subsequently participated in a PA-sponsored energy efficiency program that resulted in energy savings. This type of analysis is referred to as a channeling analysis.

To identify the EE equipment and behavioral changes customers carried out after engaging in MCE's non-resource activities, the evaluation team conducted a participant web survey. The evaluation team reached out to 5,978 MCE non-resource activity participants (out of a population of 8,325) to complete surveys with 336 respondents exceeding our initial target of 100 completes (see Table 4). The evaluation team used a census approach and contacted MCE customers who had contact information (i.e., email address or mailing address). Responses from the number of completes represents the population of non-resource activity participants with a 95% level of confidence and 6% margin of error. Notably, the number of completes is higher for those non-resource activities with larger populations.

**Table 1. MCE Participant Survey Sample Composition**

<b>Non-Resource Activity Participant Type</b>	<b>Population N</b>	<b>Sample n</b>	<b>Survey Completes n</b>
eNewsletter	5,190	4,829	290
Small Commercial Energy Audit	1,157	909	22
CoolCalifornia Challenge	1,526	163	20
Multifamily	452	77	4
<b>Total</b>	<b>8,325</b>	<b>5,978</b>	<b>336</b>

This survey not only gathered data about EE equipment installed after their non-resource activity interaction with MCE, but also asked about the degree to which the non-resource activity influenced their decision to install the equipment. The team used the information collected through the survey to estimate the energy savings using an engineering analysis and the amount of these savings that were influenced by participation in non-resource activities. This allowed us to arrive at an estimate of savings that results due to engagement in MCE's non-resource activities, also referred to as an attribution analysis. The engineering analysis provided 1<sup>st</sup> year gross and net electric and gas savings for the equipment installed by non-resource activity participants

and the attribution analysis allowed us to determine what amount of savings is attributable to the non-resource activity itself.<sup>3</sup>

## Evaluation Findings and Recommendations

In this section, the evaluation team provides findings and recommendations that came out of the research and evaluation activities conducted to support the Year 1 Assessment of California CCAs Study conducted on behalf of the CPUC. Note that not all findings have an associated recommendation.

**Finding #1:** Based on the evaluability assessment of MCE's non-resource activity data associated with Multifamily technical assessments, Small Commercial audits, the CoolCA Challenge, and eNewsletters, the evaluation team found the data to be mostly complete and of sufficient quality to carry out the evaluation tasks for this study. The team was able to quantify the benefits of these non-resource activities to some extent. However, the quality of CCA's non-resource tracking data is often inconsistent, and datasets do not have a standardized set of fields they track.

**Recommendation:** The evaluation team recognizes that the very nature of certain non-resource activities is not conducive to standardized data collection (e.g., marketing and outreach campaigns). However, for those activities where CCAs can gather detailed participant information (such as during audits, technical assistance visits, workshops, and when making referrals to other programs), the CCAs should do so. Information that would improve the evaluability of non-resource activities includes tracking customer name, email address, service address, dates of participation in the non-resource activity, and all associated customer IDs used by the PAs, as these would facilitate customer identification and the matching of data in the CPUC program database. As data quality and completeness improve, evaluators can more fully capture the attributable energy savings from non-resource activities. Analyses of this sort go far to demonstrate the benefits of non-resource activities, particularly those offered by PAs with a more local or community focus, such as CCAs and Regional Energy Networks.

**Finding #2:** The channeling analysis shows that 4% of MCE's non-resource participants went on to participate in a PA resource program, by identifying matches in the CPUC program database. This is likely a drastic underestimate because the non-resource activity datasets used in the analysis contained several incomplete records, thereby making it difficult to identify customers who subsequently installed EE equipment through MCE's or another PA's resource program.

**Recommendation:** If the CCAs and the CPUC are interested in a more comprehensive accounting of the impacts of non-resource activities on the CA EE portfolio, the evaluation team recommends the PAs use a standardized method and format for recording non-resource activity participant data, for at least those activities where data can easily be tracked. For example, when residents and businesses receive energy assessments, attend presentations and workshops, and referrals to resource programs, the PAs should capture contact names, business names, email addresses, phone numbers, and mailing addresses, along with customer IDs in a standardized format. The CPUC program database requires the PAs to provide their program data in a standardized format, and we recommend that this same format, when possible, is applied to the tracking of non-resource activity participants.

**Finding #3:** Approximately half of the survey respondents (or 167 of 336 respondents) indicated completing at least one EE equipment upgrade in their home or business facility (either through a PA resource program

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<sup>3</sup> Gross energy savings represents the change in energy consumption and/or demand that results directly from program-related actions taken by participants in an efficiency program, regardless of why they participated and unadjusted by any factors. Net energy savings are the total energy savings that are attributable to the energy efficiency program.

or on their own) since interacting with MCE through a non-resource activity. Based on this information, there are likely more records in the CPUC program database that could have been linked to participants of MCE's non-resource activities. We anticipate that repeating the channeling analysis using additional information gathered through the survey effort would improve the results.

**Finding #4: About one-third of MCE's surveyed respondents provided suggestions to improve MCE's non-resource activities.** These include adding more outreach channels (15%), particularly those that are local or community-based, increasing customer engagement (13%), and/or providing more information regarding saving energy (13%), energy efficient equipment (9%), or cost savings (8%). Some respondents suggested that MCE increase the frequency of their non-resource activities, particularly the eNewsletter.

**Recommendation:** While generally satisfied with MCE's non-resource activities, the surveyed participants provided meaningful feedback about how MCE could improve them. The open-end responses and the time that respondents took to provide the feedback shows their vested interest in MCE and the service it provides. The evaluation team recommends that MCE consider additional ways to engage with customers through varied outreach channels not previously used. Online marketing campaigns through social media platforms is an effective way to reach customers. If MCE has not already done so, its staff could consider door-to-door neighborhood canvassing and attendance at outdoor community fairs and markets to increase customer engagement at the local or community-based level. MCE could also consider sending out its eNewsletter more frequently and send bill inserts and print materials to customers in MCE's service territory.

**Finding #5: Non-resource activities do have some influence on customers' decisions to install EE equipment and engage in energy saving behaviors, but they are not the primary driver. Other factors considered important are concern for the environment and energy cost savings.** Based on the attribution analysis, the average influence of non-resource activities on the decision to install EE equipment ranged from 23% to 46%, depending on the activity. Non-resource activities directly linked to MCE's resource programs, such as technical assistance provided through the Multifamily program and audits provided through the Small Commercial program, are more influential on the decision to install EE equipment upgrades than are more general non-resource activities, such as eNewsletters and the CoolCA Challenge.

**Finding #6: Based on the results of the attribution analysis, the evaluation team found some unclaimed energy savings that are in part attributable to MCE non-resource activities.** Of the 1<sup>st</sup> year net electric savings from installed EE equipment (711.4 MWh) that resulted from the influence of a non-resource activity, approximately 4% resulted from installing EE equipment outside of a PA resource program. Savings from those equipment installations may not accounted for in the CPUC program database since they occur outside of PA resource programs. In the case of natural gas, the 1<sup>st</sup> year net therm savings from EE equipment installations that results from the influence of a non-resource activity are negative, equaling -1,612 therms. However, the net therm savings coming from non-rebated EE equipment (619 therms) are positive, while those coming from EE equipment installed through a PA resource program are negative (-2,230 therms).

From this analysis, it is clear that a sizable number of customers who participate in CCA non-resource activities and go on to complete an EE project may not be reflected in CPUC EE portfolio data either because customers did not apply for rebates or because inadequate data makes it difficult to link non-resource activity-based customer contacts with the resulting projects. While we recognize that the spillover estimated for resource programs is designed to capture the savings that come from customers who installed equipment and did not apply for a rebate, it may not capture the full benefits from non-resource activities.



## Conclusion

MCE's wide variety of non-resource activities have a positive impact on the California EE portfolio, and energy savings arising from these efforts are likely under-counted. While the evaluation detected a small percentage of customers who participate in MCE-sponsored non-resource activities and go on to install energy efficiency upgrades and adopt energy saving behaviors through a channeling analysis, data tracking limitations make it difficult to determine the full extent of the impacts associated with MCE's efforts. In fact, a survey of non-resource activity participants found that approximately half of the respondents went on to install at least one EE equipment upgrade in their home or business. Establishing a consistent set of metrics and data tracking practices for non-resource activities will improve the evaluability of non-resource activities and provide for greater insights into their contributions to the statewide EE portfolio.

## 2. CCA Overview and Study Purpose

In a movement to gain localized control over the sourcing of electricity, California has seen the introduction and growth of CCAs throughout the state since 2010. CCAs, which are organized at the local government level, offer electricity acquired from sources other than public or investor-owned utilities to the residents and businesses in their service territories. The interests of customers joining CCAs may include accessing power at lower costs and/or acquisition of a larger share of their electricity through renewable generation sources, such as solar and wind power.

CCAs were introduced in California through Assembly Bill 117 (AB 117), which authorized local governments to aggregate customer electric load and purchase electricity for customers.<sup>4</sup> This bill states that “all electrical corporations must cooperate fully with any community choice aggregators that investigate, pursue, or implement community choice aggregator programs.”<sup>5</sup> The investor-owned utility (IOU) service territory in which the CCA territory resides still is responsible for the transmission and distribution of the electricity, as well as all metering, billing, and customer service to the customers that participate in a CCA. This makes CCAs distinct from municipal-owned utilities, which not only procure energy but also take over transmission and billing. Figure 1 shows how the electricity procured by CCAs on behalf of their customers is delivered via IOUs. It requires cooperation on the part of CCAs and IOUs to ensure electric service reaches CCA customers.

Figure 1. Illustration of How Community Choice Aggregators Operate

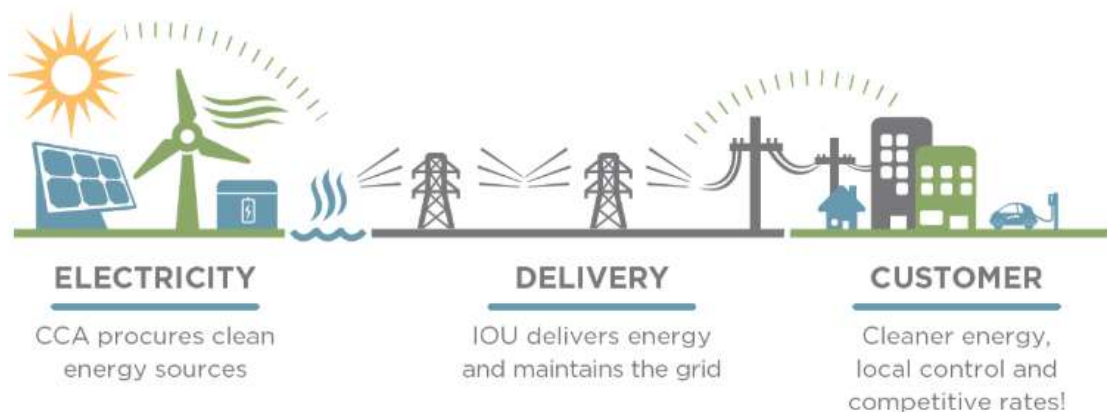


Image from CalCCA: <https://cal-cca.org/cca-impact/>

Currently, there are twenty-one California CCAs that offer their customers an alternative electricity procurement option (see Figure 2) and two additional ones that have filed implementation plans. Despite their rising popularity and their statutory authority to administer ratepayer-funded EE programs under California Public Utility Code (PUC) 381.1, MCE was the sole CCA approved to administer EE funds until 2018.<sup>6,7</sup> The evolution of CCAs continued as LCE recently received authorization to administer two EE programs using California ratepayer funds and began to do so in the fall of 2018.<sup>8</sup> Additionally, Redwood Coast Energy

<sup>4</sup> Assembly Bill 117 (2002) [http://www.leginfo.ca.gov/pub/01-02/bill/asm/ab\\_0101-0150/ab\\_117\\_bill\\_20020924\\_chaptered.pdf](http://www.leginfo.ca.gov/pub/01-02/bill/asm/ab_0101-0150/ab_117_bill_20020924_chaptered.pdf)

<sup>5</sup> AB 117 p. 6, Public Utility Code 366.2 (9)

<sup>6</sup> Public Utilities Code 381.1 [http://leginfo.ca.gov/faces/codes\\_displaySection.xhtml?sectionNum=381.1&lawCode=PUC](http://leginfo.ca.gov/faces/codes_displaySection.xhtml?sectionNum=381.1&lawCode=PUC)

<sup>7</sup> MCE, formed in 2008, is California's first CCA and received authority to offer ratepayer-funded EE programs in 2012.

<sup>8</sup> LCE was approved to use ratepayer funds to administer EE programs through Resolution E-4917. April 26, 2018.



Authority (RCEA) just submitted Advice Letter 004-E in which it is electing to administer two EE programs using ratepayer funds.<sup>9</sup>

Figure 2. California Community Choice Aggregators

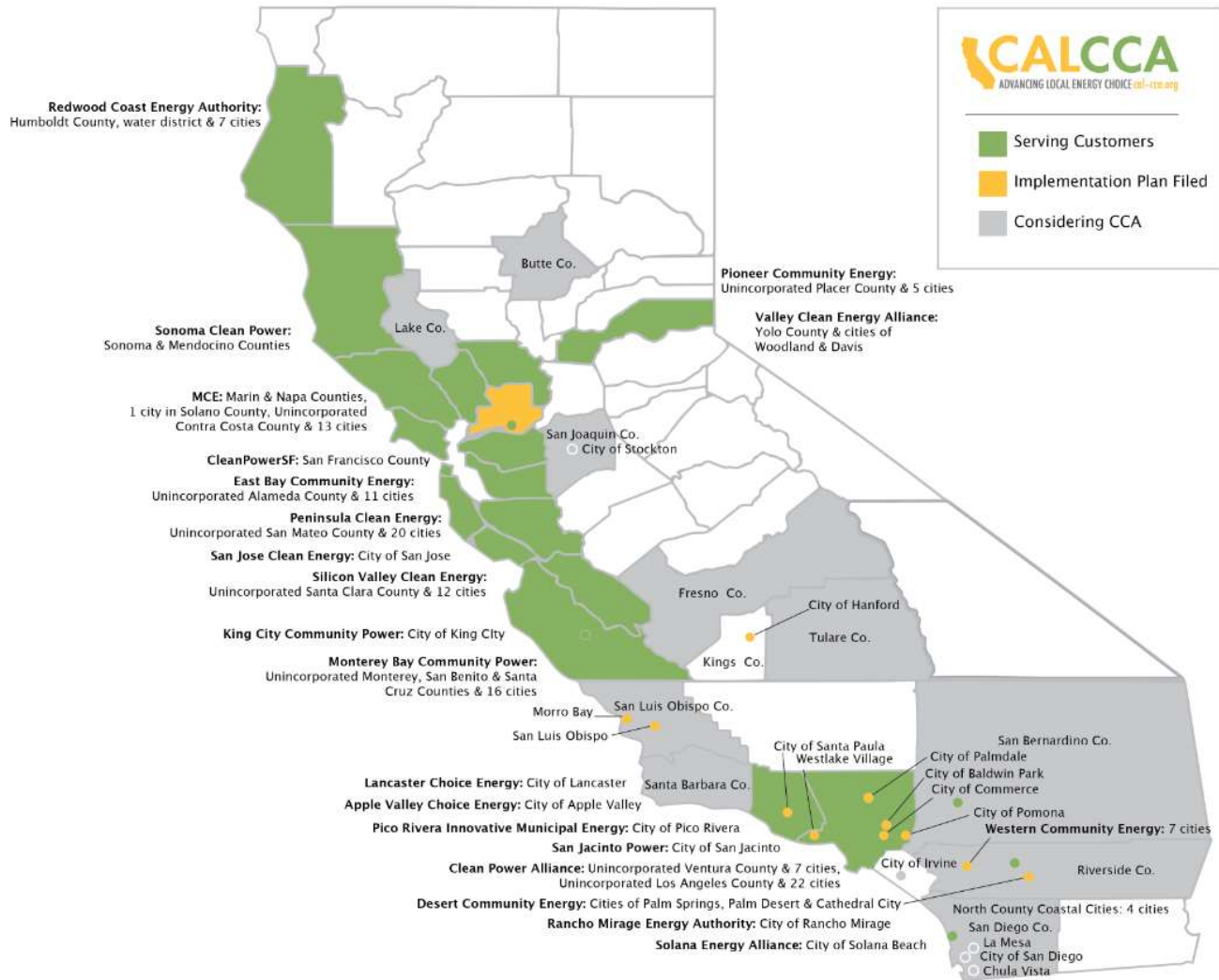


Image from CalCCA: <https://cal-cca.org/cca-impact/>

According to PUC 381.1, CCAs can choose to either “elect” or “apply” to administer EE funds. When *electing* to administer funds the CCA must present a proposal, budget and rules that will govern the program. The CCA develops its own metrics and evaluation. However, the proposal is subject to approval by the Commission and must meet several criteria.<sup>10</sup> Under the *elect* pathway according to PUC 381.1 (e) and (f), funding is essentially proportional to utility funds in the CCA territory, minus the IOU portfolio budget dedicated to regional and statewide programs. Thus, budgets are limited and vary based on the utility programs in its region. In addition,

<sup>9</sup> RCEA. Advice Letter RCEA 004-E, Election to Administer Energy Efficiency Program. September 18, 2019.

<sup>10</sup> CPUC D.14-01-033.

the CCA is limited to funding only projects that target the CCA's own customers. This *elect* option can serve as a way for CCAs to learn about program administration.

Alternatively, CCAs can opt to *apply* to administer EE funds according to PUC 381.1 (a)-(d). Under this approach, CCAs are subject to IOU rules—unless a Commission Decision provides specific instructions. As such, the CCA can request any budget amount to meet their portfolio needs (though the Commission has more discretion to approve or reject a CCA's application or certain program offerings). This option also allows CCAs provide ratepayer-funded EE programs to bundled customers in their service territory, in contrast to being restricted to only serving their own customers.

As the only two CCAs that were approved to receive ratepayer funds to provide their customers with programs designed to reduce energy usage as of 2019, the Energy Division (ED) of the CPUC indicated an interest in examining the effects of their non-resource activities on the EE portfolio with a focus on the 2016 and 2017 evaluation time period. Since LCE did not begin to offer ratepayer-funded programs until the fall of 2018, ED and the evaluation team decided to study the influence of MCE's non-resource activities and the effect they had on the EE portfolio. The CPUC still was interested in exploring LCE's non-resource activities; the evaluation, therefore, included development of program theory and logic models of LCE's two EE programs and an evaluability assessment of LCE's program data to determine if the data gathered could be used to inform a similar analysis of LCE's non-resource activities in the future.

## 2.1 Description of CCAs Covered in this Study

Below are descriptions of MCE and LCE, including the service territories they cover, the resource programs they offer, and the non-resource activities they offer. LCE can only offer these programs to their own customers while MCE can offer them to all residents and businesses in their service territory, regardless of whether they are MCE customers or not.

### 2.1.1 Marin Clean Energy (MCE)

MCE is California's first CCA and the first to offer ratepayer-funded EE programs. MCE's service area is in Northern California and covers Marin and Napa Counties, unincorporated Contra Costa County, and the cities and towns of Benicia, Concord, Danville, El Cerrito, Lafayette, Martinez, Moraga, Oakley, Pinole, Pittsburg, Richmond, San Pablo, San Ramon, and Walnut Creek. Figure 3 shows the areas served by MCE during 2016-2017 in dark green. In the Spring of 2018, MCE added customers located in unincorporated Contra Costa, shown in light green in the same figure.

Figure 4 shows MCE's growth as it added customers located in Solano County as of April 2020. CCAs such as MCE still cooperate with the California IOUs, as CCAs rely on IOUs to deliver the energy it procures for its customers. First formed in 2008, MCE began to offer service to retail customers in 2010.<sup>11</sup>

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<sup>11</sup> 2016 MCE Energy Efficiency Annual Report. <https://www.mcecleanenergy.org/wp-content/uploads/2018/06/MCE-2016-Energy-Efficiency-Annual-Report.pdf>

Figure 3. MCE's Service Territory in 2016-2017 and New Communities Added in 2018



Image from MCE: <https://www.mcecleanenergy.org/news/press-releases/contracosta/>

Figure 4. MCE's Service Territory Beginning April 2020



Image received through communications with MCE staff.

MCE submitted its first request for funding in 2012 under the elect to administer pathway.<sup>12</sup> This request took place prior to the finalization of many of the rules regarding CCA program administrators that were provided largely in D.14-01-033. This means that as other CCAs file for access to EE funds in the future, there are likely to be significant differences between how their plans are reviewed compared to how MCE's original plan was reviewed. In 2012, shortly after its approval, MCE requested funding under the "apply to administer option" so that it could better define its own budget and serve both CCA and bundled customers with their EE offerings. Later, MCE proceeded to submit an early application<sup>13</sup> also known as a business plan for the current transition to a 10-year rolling portfolio.

MCE's approved budget for 2018-2025 is \$85.7 million, which is a substantial increase from their last approved budget of \$1.6 million annually. During 2016 and 2017, MCE served approximately 250,000 customer accounts and offered four programs: Multifamily, Single-family, Small Commercial, and Financing. The effects of selected non-resource activities that occur under each of these programs, as well as their cross-cutting non-resource activities, are the subject of study in this report. MCE recently expanded its core programs by adding three new Sectors: Agriculture, Industrial, and Workforce, Education and Training (WE&T). MCE's Residential sector is the largest in terms of budget and accounts for about half of their portfolio spending. Additionally, according to its 2019 Annual Report, MCE now serves approximately 475,000 customer accounts.

## 2.1.2 Lancaster Choice Energy

LCE's service territory covers the City of Lancaster located in the high desert region of the Mojave Desert in northern Los Angeles County. Noting the importance of EE in achieving its goal to become the first zero-net energy city in the nation, LCE became the second CCA to offer EE programs using ratepayer funds. LCE first formed in 2014 and began to serve retail customers in the Spring of 2015.

In August 2017, LCE submitted Advice Letter LCE 004-E in which it elected to administer ratepayer-funded EE programs.<sup>14</sup> When a CCA elects to administer, budgets tend to be limited and vary depending on the utility programs offered in the CCA's territory. Additionally, the EE programs can only target the CCA's own customers. LCE's Advice Letter was followed by another, LCE 005-E filed in October 2017, in which it withdrew LCE 004-E after learning additional information from the CPUC and stakeholders and refiled to administer EE programs. Early in 2018, LCE received a supplemental request from the CPUC to which it responded in late March 2018. On April 26, 2018, LCE received approval to offer EE programs per Resolution E-4917. In September 2018, LCE began to offer Energy Advisor, its first EE program which was targeted at its residential customers. LCE's Small Commercial Direct Install program began in early 2019. While the Small Commercial Direct Install program contains both resource and non-resource elements, the Energy Advisor program is completely a non-resource program.

In Resolution E-4917, the CPUC also provided approval of a budget of \$1,174,996 over the course of LCE's three-year EE program plan. The CPUC noted that these funds will come directly from SCE's EE portfolio budget. In 2016 and 2017, LCE served approximately 65,000 retail customer accounts. In 2018, the number of accounts fell to approximately 63,000.

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<sup>12</sup> CPUC Resolution E-4518.

<sup>13</sup> CPUC Application (A.) 15-10-014.

<sup>14</sup> LCE Advice Letter 004-E. August 2, 2017. [https://www.lancasterchoicenergy.com/wp-content/uploads/2018/07/AL-LCE-004-E\\_2017-Elect-to-Administer-Energy-Efficiency-Program.pdf](https://www.lancasterchoicenergy.com/wp-content/uploads/2018/07/AL-LCE-004-E_2017-Elect-to-Administer-Energy-Efficiency-Program.pdf)

## 2.2 Non-Resource Activities Offered by MCE and LCE

While both MCE and LCE offer ratepayer-funded EE programs, they both also offer a variety of non-resource activities including marketing and outreach, technical assistance, workshops and trainings, energy audits, and/or referrals to other programs. The CPUC describes a non-resource program as one that has no directly attributed energy savings but serves to support the EE portfolio through activities such as marketing or improved access to training and education.<sup>15</sup>

This study broadens the focus from non-resource programs to non-resource activities since oftentimes PAs engage in discrete actions, as opposed to formally defined programs, that are meant to promote participation in their resource offerings, but that do not in and of themselves produce energy savings. Energy audits serve as a prime example of a non-resource activity. Audits do not generate savings, but instead provide customers with recommendations to improve EE perhaps through the installation of new equipment that requires less energy to operate or through behavioral changes. If customers then decide to purchase rebated energy efficient equipment through a resource program, the non-resource activity (the audit) indirectly led to energy savings that contributed to California's EE portfolio.

MCE and LCE both engage in non-resource activities, though MCE offers many more given its earlier start date.

### 2.2.1 Marin Clean Energy

To understand the non-resource activities MCE engaged in during 2016 and 2017, the evaluation team reviewed documentation of its activities as presented in its Annual Reports for these years.<sup>16,17</sup> The Annual Reports communicate MCE's annual energy and demand savings and cost-effectiveness for its portfolio of programs and notable strategies employed to encourage EE actions in general and participation in the EE resource programs it offers. The evaluation team reviewed these strategies and found that they fit the definition of non-resource activities.

Our review shows that MCE engaged in several types of non-resource activities with the intention of promoting its resource programs. For example, MCE provides small businesses with free energy audits through its Small Commercial program. These audits do not produce energy savings but are meant to lead customers towards participation in MCE's program, which would then result in savings. Small businesses may receive free energy audits from MCE and decide to then participate in MCE's Small Commercial program. Other possibilities include implementing the recommendations through participation in a similar program offered by another PA such as PG&E or BayREN, acting on the recommendations on its own outside of an EE program, or not acting on the recommendations at all.

Other non-resource activities that MCE engaged in are not specifically tied to the promotion of a specific program, such as marketing and outreach to its customers more generally about MCE's mission, the services it offers, as well as its EE programs. For example, MCE's sends out eNewsletters that provide information about sustainable communities, energy efficiency, and its EE programs that offer rebates for energy saving equipment.

Table 2 below presents several MCE non-resource activities carried out during 2016-2017, as presented in MCE's Annual Plans. Note that a majority of the non-resource activities listed in the table directly support

<sup>15</sup> <https://www.cpuc.ca.gov/General.aspx?id=4137>

<sup>16</sup> 2016 MCE Energy Efficiency Annual Report. <https://www.mcecleanenergy.org/wp-content/uploads/2018/06/MCE-2016-Energy-Efficiency-Annual-Report.pdf>

<sup>17</sup> 2017 MCE Energy Efficiency Annual Report. <https://www.mcecleanenergy.org/wp-content/uploads/2018/06/MCE-2017-Energy-Efficiency-Annual-Report.pdf>



specific programs, as this was how the information was presented in their Annual Report. In summary, MCE relied on outreach through its website, trainings, presentations, and electronic newsletters; conducted small business energy audits and provided multifamily property technical assistance; supported green jobs; and supported participation in the PACE program during 2016 and 2017.

**Table 2. MCE's Non-Resource Activities Carried Out in 2016-2017**

Program	Non-Resource Activities
Multifamily	<ul style="list-style-type: none"> <li>▪ Increased frequency of communications to multifamily participants to reduce project conversion time.</li> <li>▪ Held marketing and outreach presentations and meetings with Home Owner Association (HOA) boards, affordable housing developers, property management companies, property owners and local organizations.</li> <li>▪ Partnered with Marin Municipal Water District (MMWD) and other local water agencies to help residents save water and to connect with property owners.</li> <li>▪ Provided technical assistance to 9,263 units in 2016 and 8,657 units in 2017. Of these, 654 units were low-income housing units in 2016 and 760 units were low-income housing units in 2017.</li> <li>▪ Assisted income qualified residents in MCE's service area through its Low Income Families &amp; Tenants pilot.</li> <li>▪ Continued a partnership with Green and Healthy Homes Initiative in Marin (GHHI Marin) to coordinate rebates and services to address health, safety and aging-in-place issues at properties in Marin.</li> <li>▪ In 2016 and 2017, coordinated and supported workforce development training through working with Marin City Community Development Corporation's clients.</li> <li>▪ Partnered with Rising Sun Energy Center to offer a stand-alone Direct Install program (including workforce development and resident education) in MCE's new communities to develop a pipeline of new properties.</li> </ul>
Small Commercial	<ul style="list-style-type: none"> <li>▪ Communicated program success stories through case studies, newsletters and social media to promote program offerings.</li> <li>▪ Partnership with Marin Builders Association to help raise visibility with contractors.</li> <li>▪ MCE customer account representatives referred high energy intensity businesses that would be ideal candidates for participation in the program.</li> <li>▪ In 2016, completed energy audits at 312 businesses and in 2017, completed energy audits at 845 businesses.</li> <li>▪ In 2017, supported local green jobs by funding 1,800 local work hours through implementation contracts.</li> </ul>
Single-Family	<ul style="list-style-type: none"> <li>▪ In 2016, added 861 new registered users to the My Energy Tool website, bringing the total number of users up to 3,493.</li> <li>▪ In 2016, 161 new customers generated Action Plans.</li> </ul>
Financing	<ul style="list-style-type: none"> <li>▪ In 2016, PACE program participation had financed over \$5 million in Marin County through December. In 2017, MCE helped significantly expand PACE program participation.</li> <li>▪ The on-bill repayment (OBR) program was a public/private partnership between commercial banks and MCE but was retired in early 2017 due to low uptake of the offer. MCE continues to support outstanding loans that were offered through the OBR program.</li> </ul>
General (not offered to support any single program)	<ul style="list-style-type: none"> <li>▪ MCE sends out a monthly electronic newsletter to individuals and businesses who sign up. The publication features stories about sustainable communities, energy efficiency, and its programs that offer rebates for energy saving equipment.</li> </ul>

## 2.2.2 Lancaster Choice Energy

LCE offers two ratepayer-funded programs: the residential Energy Advisor program, which is wholly non-resource and the Small Commercial Direct Install program, which offers non-resource energy audits in support of generating EE savings through the program. LCE noted that it does engage in marketing and outreach to inform customers about its programs and EE in general, but these activities occur outside the ratepayer-funded EE programs that LCE offers.

### Energy Advisor

As described in CPUC Resolution E-4917, LCE's Energy Advisor program provides free information on EE products, programs, and evaluation services to residential customers. The services also include telephone administered home surveys and recommendations for EE upgrades and/or applicable programs for customers to consider enrolling in based on the survey. When LCE customers call, the program implementers inquire with customers to understand their motivations for the audit. For example, customers may call because they have a specific home improvement idea in mind and are looking for information to support their decision making about finding the most energy efficient way to make the improvement. Others may call because they feel their electric bills are too high and they are looking for a comprehensive strategy to reduce their electricity usage. After the telephone audit is completed, the implementer provides the caller with a report that documents the resources they have available to them, including EE resource programs offered by SCE and SCG. LCE claimed no energy savings for this program.

### Small Commercial Direct Install

LCE's Small Commercial Direct Install (SCDI) program contains both resource and non-resource elements. Qualifying small businesses (those that use less than 200 kW per month) receive a free of charge energy assessment where an EE expert identifies energy saving opportunities based on the most cost-effective measures. With the business owner's approval, the EE expert directly installs the appropriate equipment from the following list at no cost:

- LED lighting
- Hi-bay lighting
- Fluorescent lighting
- Occupancy sensors
- Refrigeration improvements

The non-resource activity LCE engages in as part of this program is the free energy assessments for its small business customers. LCE will claim savings that come from the directly installed EE equipment.

## 2.3 Key Research Questions

The study objective for this assessment is to understand the effects of the non-resource activities offered by CCAs on the overall EE portfolio. During the initial study design, the CPUC and its evaluation team planned to focus on the activities carried out by MCE and LCE during 2016 – 2017. However, since LCE did not launch begin to offer ratepayer-funded EE programs until 2018, several the research questions were revised to focus on MCE's non-resource activities. The following are the research questions the team addressed in this report:

- What non-resource activities do MCE and LCE offer to their customers? Which ones occur as part of resource programs and which occur outside of programs?
- What non-resource activities are most successful in channeling customers into PA resource programs?
- How many participants engaged in an MCE non-resource activity that went on to participate in a PA resource program and what are their associated gross ex-ante savings from their participation?
- What types of EE actions (behavioral or programmatic) are taken outside the PA EE resource programs that are attributable to participation in a CCA non-resource activity? Can we estimate the savings from these activities and if so, what are they?
- Roughly, what percentage of these savings are attributable to the influence of the non-resource programs?
- Can the evaluation team quantify the contributions of CCA non-resource activities to the California EE portfolio using an NMEC approach in the future?



### 3. Overview of Evaluation Approach

This section first describes the research tasks the evaluation team carried out to address the key research questions presented in Section 2.3. It follows with a description of the data collection and analytical methods used to accomplish the research tasks.

#### 3.1 Research Tasks

As part of the first-year assessment of CCAs, the evaluation team conducted the following tasks presented in Table 3.

Table 3. Research Tasks for First-Year Assessment of CCAs Study

Evaluation Tasks	Description
Data Request	Submit a data request to MCE and LCE to acquire non-resource activity tracking data including participant names, contact information, and dates of participation.
Materials/Data Review	Review responses to the data request to learn about the marketing and outreach campaigns, types of non-resource activities, and resource programs offered by MCE and LCE.
In-Depth Interviews with MCE and LCE Staff and Implementers	Conduct in-depth interviews with staff at MCE and LCE and their implementation teams, if applicable, to gain insights about how they conduct their non-resource activities, how they are funded, and whether they are a part of resource programs they offer.
Program Theory and Logic Model Development	For selected programs offered by MCE and LCE, develop or update existing program theory and logic models to reflect how non-resource activities are used to promote participation in EE programs or energy saving behaviors.
Evaluability Assessment	Conduct a review of the non-resource tracking data provided by MCE and LCE to determine whether the datasets include information needed to evaluate the benefits of these activities.
Channeling Analysis	Identify MCE non-resource activity participants who subsequently participated in a PA resource program and those who did not. Use this information in the development of the survey sample.
MCE Non-Resource Activity Participant Survey	Conduct a participant web survey with MCE non-resource activity participants to assess whether they installed rebated or non-rebated EE equipment and/or changed their energy using behaviors after participating in an activity; also assess the degree to which the non-resource activity influenced their subsequent equipment installation and behavior.
Engineering/Attribution Analyses	Use the information gathered from the participant web survey to estimate the energy savings from the installation of EE equipment that occurred after engagement with an MCE non-resource activity and attribute the portion of savings coming from the influence of non-resource activities.

## 3.2 Methodology

This section outlines the methodologies used to complete the evaluability assessment of the data provided by MCE and LCE, the channeling analysis to determine which MCE non-resource participants went on to participate in PA EE resource programs, the MCE non-resource activity participant web survey, the engineering analysis to estimate the ex-ante gross and net 1<sup>st</sup> year savings from EE installations by MCE non-resource participants, and last, the attribution analysis which was used to determine the influence of MCE's non-resource activities on customers' decisions to purchase EE equipment, some of which were claimed towards California's EE portfolio goals.

### 3.2.1 Evaluability Assessment

To determine whether the evaluation team could use the non-resource activity data collected by LCE and MCE for the channeling analysis and to develop a sample for its survey efforts, we reviewed data provided by both CCAs in response to data requests sent in December 2018. In January 2019, the evaluation team received the following program materials and data in response to the data requests sent to LCE and MCE:

- Program materials including annual reports, program implementation plans, program theory and logic models (where available), marketing collateral and other materials used to inform customers about CCA offerings; and
- CCA non-resource and selected EE resource program databases.

In addition to the data and materials received from CCAs, the evaluation team also gained access to CPUC's program data, some of which is publicly available through the CPUC's California Energy Data and Reporting System (CEDARS).<sup>18</sup>

The evaluation team reviewed program materials and tracking databases to understand the types of non-resource activities and resource programs LCE and MCE offer to their customers; the goals of their program offerings; the size of the programs based on participation records; and the availability of program participant information for the channeling analysis, survey sample development, and other evaluation tasks.

As part of the evaluability assessment, the evaluation team review participant data for LCE's Energy Advisor program and reviewed a list of program data fields that LCE plans to collect for their recently launched Small Commercial Direct Install program (SCDI). The evaluation team also reviewed participant data shared by MCE for various non-resource activities conducted as part of their Multifamily, Single-Family, and Small Commercial programs.<sup>19</sup> Data completeness, quality, and the feasibility of conducting channeling analyses using CCA data and CPUC program data were the primary focus of the evaluability assessment. Section 5 presents detailed results of the evaluability assessment and recommendations for non-resource activity data tracking.

### 3.2.2 Channeling Analysis

The evaluation team conducted a channeling analysis to acquire the set of customers who first engaged in an MCE non-resource activity in 2016-2017 and subsequently participated in an EE program offered by one of the California PAs. The premise of the channeling analysis is that customers who participated in a PA resource

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<sup>18</sup> The CPUC program database contains data about savings claims with more granularity than what is publicly available. This database contains individual savings claims from all PA resource programs including associated customer information and measures installed.

<sup>19</sup> The evaluation team conducted a high-level review of MCE's Financing program. However, data for the program was excluded from the evaluability assessment as the Financing program was officially closed in 2018 due to low participation and the availability of other financing offerings.

program may potentially have been, in part, influenced by the MCE non-resource activity in which they participated. The channeling analysis provides a list of the customers who may have been influenced by the non-resource activity. However, the degree of influence, if any, cannot be determined through this analysis.

We recognize that MCE's non-resource activity participants may have chosen to install EE equipment outside of PA resource programs as well. The channeling analysis does not capture this information. However, the team did implement a survey with MCE's non-resource activity participants to understand what EE equipment and behavioral changes were made both within and outside of PA resource programs and what influence the non-resource activity had on their decision.

To conduct this analysis, the evaluation team identified records from MCE's non-resource activity datasets; used MCE customer data and outside sources to fill in missing information to improve results of the channeling analysis; created unique records of non-resource activity participants; and looked for customer matches in the CPUC tracking data that showed customer purchases of EE equipment occurring after their interaction with MCE. The CPUC tracking data used in this analysis covered 2016 through 2018.

The evaluation team needed two main sources of information to conduct the channeling analysis:

- A list of MCE non-resource activity participants with customer identifying information, type of non-resource activity in which the customer participated, and date of participation
- A list of PA resource program participants with customer identifying information and dates of participation so that the evaluation team could confirm that participation occurred after non-resource activity participation.

The two lists ideally should contain a common identifier, such as a customer ID that is included in both datasets. Most times this information was not present. The evaluation team therefore had to rely on other ways to match customers to records in the CPUC tracking data such as through customer name, email address, phone number, and/or mailing address. To prepare the non-resource participant datasets for the channeling analysis, we:

- Converted each non-resource participant dataset into a standardized format;
- Standardized variable names;
- Cleaned the data in a standardized manner; and
- Retained the following fields for each record, where populated: name, premise address, phone, email, and dates of non-resource activity participation.

We next appended all the standardized non-resource tracking datasets. This allowed the team to conduct a search for duplicate records across non-resource activity datasets. The team defined unique records based on a unique combination of premise location and customer name since EE upgrades, and hence energy savings, occur at the property level and are experienced by the resident or business that occupies that premise.

The next step in this process was to employ a fuzzy matching algorithm to identify duplicate records.<sup>20</sup> In some cases, a record would contain a customer name and email address and in another it would contain customer name and a street address. In these cases, the evaluation team appended the information from the two datasets so that we would retain as much information as we could for that given record. This allowed the team

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<sup>20</sup> Fuzzy matching is a computer science based technique used to link records, particularly when there are less than 100% identical field values across sources.

to create a single unique record from two sources that contained different information about the same customer/premise combination and would help increase the chance of finding a match in the CPUC tracking data. After we ran the algorithm, the final non-resource participant tracking dataset contained unique records. We made sure to include flags to indicate the non-resource activities in which customers participated. Virtually all customers (99%) participated in only one non-resource activity type.

The evaluation team then matched the non-resource participant dataset with unique records to the CPUC program data in a similar manner used to remove duplicate records from the non-resource participant data. We used almost the exact same fuzzy matching algorithm to link records from the non-resource activity data to the CPUC program by looking for matches first by customer ID. Because customer IDs were not often available, the team searched for matches based on a combination of names, email addresses, and premise addresses.

### 3.2.3 MCE Non-Resource Activity Participant Survey

As part of the assessment of CCAs, the evaluation team conducted a computer-assisted web interviewing (CAWI) survey of MCE customers who engaged with non-resource program activities conducted by MCE as part of their EE programs and their general marketing and outreach campaigns.

#### Sample Design

The evaluation team reached out to 5,978 MCE non-resource activity participants (out of a population of 8,325) to complete surveys with 336 respondents exceeding the target of 100 completes. The evaluation team used a census approach and contacted MCE customers who had contact information (i.e., email address or mailing address). Responses from the number of completes represents the population of non-resource activity participants with a 95% level of confidence and 6% margin of error. Notably, the number of completes is higher for those non-resource activities with larger populations.

As shown in Table 4, the sample includes eNewsletter subscribers, Small Commercial participants who have received an energy audit, CoolCA Challenge participants, and Multifamily program participants who have received communications and/or technical assistance from MCE as part of their participation in the Multifamily program.

Table 4. MCE Participant Survey Sample Composition

Non-Resource Activity Participant Type	Population		Sample Frame		Sample		Survey Completes	
	N	Percent (N=8,325)	n	Percent (n=6,080)	n	Percent (n=5,978)	n	Percent (n=336)
eNewsletter	5,190	62%	4,855	80%	4,829	81%	290	86%
Small Commercial Energy Audit	1,157	14%	929	15%	909	15%	22	7%
CoolCalifornia Challenge	1,526	18%	189	3%	163	3%	20	6%
Multifamily	452	5%	107	2%	77	1%	4	1%
<b>Total</b>	<b>8,325</b>	<b>N.A.</b>	<b>6,080</b>	<b>N.A.</b>	<b>5,978</b>	<b>N.A.</b>	<b>336</b>	<b>N.A.</b>

#### Survey Fielding

The evaluation team fielded the web survey between September 3<sup>rd</sup> and 23<sup>rd</sup> and contacted MCE non-resource activity participants by mail or email. Table 5 shows the number of MCE non-resource activity participants contacted by mail and email.

Table 5. MCE Participant Sample by Contact Method

Contact Method	Small Commercial Energy Audit	CoolCA Challenge	eNewsletter	Multifamily	Total
Email	3	160	4,828	38	5,029
Mail	906	3	1	39	949
<b>Total</b>	<b>909</b>	<b>163</b>	<b>4,829</b>	<b>77</b>	<b>5,978</b>

## Survey Disposition and Response Rate

Table 6 provides the survey dispositions for the participant survey.

Table 6. Participant Survey Disposition

Disposition Code	Disposition Category	Number of Customers
Complete	I	336
Partial complete - survey eligibility confirmed	N	139
Partial complete - survey eligibility unknown	U1	145
Refused	U1	15
No response	U1	4,654
Ineligible to participate	X1	160
Bounced email	X2	529
<b>Total</b>		<b>5,978</b>

Table 7 presents the response rate (RR) for the participant survey, which was calculated using the standards and formulas set forth by the American Association for Public Opinion Research (AAPOR), as described in Appendix E.

Table 7. Participant Survey Response Rate

AAPOR Rate	Percent
RR3	8.24%

### 3.2.4 Engineering Analysis

The main objective of the engineering analysis was to estimate the 1<sup>st</sup> year ex-ante gross and net energy impacts of the EE equipment installed by surveyed customers who initially participated in MCE's non-resource activities either through a PA resource program or on their own. The evaluation team used the data from the participant survey, which was fielded to non-resource activity participants within MCE's service territory (see sub-section immediately above for the non-resource activities covered in the survey). As noted in the above section responses were provided by 336 participants.

In order to complete the engineering analysis of savings, the evaluation team compiled the following list of measure categories based on the survey data:

- Appliances
- Building Shell

- Compressed Air
- Food Service
- HVAC
- Lighting
- Office Equipment
- Other
- Pool
- Refrigeration
- Solar
- Water Heating

For each of the measure categories above, the evaluation team identified sub-measures that contributed to the measure category level savings. For every sub-measure, we analyzed the participant responses and calculated the ex-ante energy savings by applying the deemed savings values using either the CPUC tracking database or the READI (Remote Ex-Ante Database Interface, version 2.5.1) program.

READI is a program that allows users to examine the ex-ante measure information based on DEER (Database of Energy Efficiency Resources) stipulations. Users can access measure-specific information such as:

- ex-ante data tables,
- existing DEER and non-DEER measure definitions,
- deemed energy impacts associated with measures in tables and graphs, and
- measure-specific net-to-gross ratios (NTGRs).

READI also provides an option for the user to download data tables and create and save new measures based on existing scaled measure definitions. The evaluation team used these deemed savings values in conjunction with pertinent survey data on measure quantities and specifications, etc., to determine the 1<sup>st</sup> year gross savings for both rebated and non-rebated EE equipment.

The following table summarizes the assumptions and sources used to calculate the gross and net savings for each measure category.

Table 8. Measure Specific Assumptions and Sources

Measure Category	Sub-Measure	Analysis Source/ Assumptions		
		Unit Energy Savings	Measure Qty	NTGR
Appliances	ENERGY STAR Clothes Washer	DEER	Survey Data	DEER Support Tables
	ENERGY STAR Dishwasher	DEER	Survey Data	DEER Support Tables
	ENERGY STAR Refrigerator	DEER	Survey Data	DEER Support Tables
	ENERGY STAR Clothes Dryer	MidAtlantic TRM v9	Survey Data	DEER Support Tables
	ENERGY STAR Room Air Conditioner	DEER	Survey Data	DEER Support Tables

Measure Category	Sub-Measure	Analysis Source/ Assumptions		
		Unit Energy Savings	Measure Qty	NTGR
	ENERGY STAR Freezer	DEER	Survey Data	DEER Support Tables
	ENERGY STAR Dehumidifier	DEER	Survey Data	DEER Support Tables
	ENERGY STAR Air Purifier	Unable to quantify due to insufficient data	-	-
	Recycled old secondary refrigerator	Unable to quantify due to insufficient data	-	-
	Recycled old secondary freezer	Unable to quantify due to insufficient data	-	-
	Recycled old room air conditioner	Unable to quantify due to insufficient data	-	-
Building Shell	Added insulation	DEER	Survey Data	DEER Support Tables
	Caulked, weather-stripped or sealed windows, doors, and/or outlet gaskets	DEER	Survey Data	DEER Support Tables
	Caulked, weather-stripped or spray-foamed air leaks in attic or crawlspace	DEER	Survey Data	DEER Support Tables
	Weather-stripped or insulated attic hatch or door	DEER	Survey Data	DEER Support Tables
	Installed ENERGY STAR double or triple pane windows	DEER	Survey Data	DEER Support Tables
	Installed window film to existing windows	Unable to quantify due to insufficient data	-	-
	Installed cool roof	Unable to quantify due to insufficient data	-	-
Food Service	ENERGY STAR Dishwasher	DEER	Survey Data	DEER Support Tables
HVAC	New Central AC	DEER	Survey Data	DEER Support Tables
	New Air Source Heat Pump	DEER	Survey Data	DEER Support Tables
	New Ductless Mini-split Heat Pump	IL TRM v7	Survey Data	DEER Support Tables
	New Ground Source Heat Pump	IL TRM v7	Survey Data	DEER Support Tables
	New Furnace	DEER	Survey Data	DEER Support Tables
	HVAC System Tune-Ups	CPUC Tracking Data Averages	Survey Data	DEER Support Tables
	Programmable or Smart Thermostat	DEER	Survey Data	DEER Support Tables
Lighting	CFL	DEER	Survey Data	DEER Support Tables



Measure Category	Sub-Measure	Analysis Source/ Assumptions		
		Unit Energy Savings	Measure Qty	NTGR
	LED	CPUC Tracking Data Averages	Survey Data	DEER Support Tables
	TLED	CPUC Tracking Data Averages	Survey Data	DEER Support Tables
	Linear Fluorescent	DEER	Survey Data	DEER Support Tables
Office Equipment	Advanced Power Strips	DEER	Survey Data	DEER Support Tables
	Computer Power Management Software	DEER	Survey Data	DEER Support Tables
	Energy Savings desktop or Laptop	IL TRM	Survey Data	DEER Support Tables
	ENERGY STAR Printer	ENERGY STAR Calculator	Survey Data	DEER Support Tables
	ENERGY STAR Copier	ENERGY STAR Calculator	Survey Data	DEER Support Tables
	ENERGY STAR Computer Monitor	ENERGY STAR Calculator	Survey Data	DEER Support Tables
Other	ENERGY STAR Clothes Washer	DEER	Survey Data	DEER Support Tables
	Installed ENERGY STAR double or triple pane windows	DEER	Survey Data	DEER Support Tables
	ENERGY STAR Dishwasher	DEER	Survey Data	DEER Support Tables
	ENERGY STAR Clothes Dryer	MidAtlantic TRM v9	Survey Data	DEER Support Tables
	Solar Panels	Ittron's PV Watts Simulation Model	Survey Data	DEER Support Tables
	ENERGY STAR Refrigerator	DEER	Survey Data	DEER Support Tables
	Electric Vehicles/ Chargers	Unable to quantify due to insufficient data	-	-
	Water Efficiency Measures	Unable to quantify due to insufficient data	-	-
Pool	ENERGY STAR pool pump	Tracking Data Averages	Survey Data	DEER Support Tables
	Pool Pump Timer	Unable to quantify due to insufficient data	-	-
	Pool Cover	Disqualified measure per evaluation guidance		
Water Heating	Low Flow Shower Head	DEER	Survey Data	DEER Support Tables
	Low Flow Faucet Aerator	DEER	Survey Data	DEER Support Tables
	Pre-rinse Spray Valves	Tracking Data Averages	Survey Data	DEER Support Tables
	Thermostatic Restrictor Valve	DEER	Survey Data	DEER Support Tables
	ENERGY STAR Water Heater	DEER	Survey Data	DEER Support Tables



Measure Category	Sub-Measure	Analysis Source/ Assumptions		
		Unit Energy Savings	Measure Qty	NTGR
	Demand Control Recirculation Pump	DEER	Survey Data	DEER Support Tables
	Pipe Insulation	Tracking Data Averages	Survey Data	DEER Support Tables
Compressed Air	No NR Activity			
Refrigeration	No NR Activity			

In addition to the gross savings, the evaluation team identified and applied measure-specific NTGRs from DEER to the calculated 1<sup>st</sup> year gross savings to estimate the total net energy savings of EE equipment installed by participants of the non-resource activity types and for each of the measure categories above.

As a part of the savings estimation, we relied on our measure-specific evaluation expertise and identified best available proxies for missing tracking database or DEER data fields to establish conservative savings estimates. As such, these estimates are purely representative of the likely non-resource activity related savings and do not have statistical significance or precision-based metrics for broader extrapolation.

### 3.2.5 Attribution Analysis

Based on data collected from MCE's non-resource activity participants, the evaluation team calculated customer-level ratios that represent the degree of influence MCE's non-resource activities had on the customer's decision to install EE equipment whether it be through an EE resource program or on their own. Once we calculate this ratio, we applied it to the customer-level ex-ante gross and net energy savings calculated in the engineering analysis to estimate the proportion of savings attributable to MCE's non-resource activities.

#### Attribution Survey Questions

The evaluation team developed customer-level attribution ratio based on responses to the following survey questions:

- IN1. On a scale of 0 to 10, where 0 is "Not at All Influential" and 10 is "Extremely Influential," how influential was MCE's **<NR activity>** in your decision to install energy saving equipment?
- IN2. Now we would like to ask you about the importance of MCE's **<NR activity>** in your decision to install energy saving equipment compared to other factors that may have influenced your decision.

If you were given a TOTAL of 10 points to rate the importance of MCE's energy saving program in your decision to **install energy saving equipment** and you had to divide those 10 points between (1) MCE's **<NR activity>** and (2) any OTHER factors, how many points would you give to the importance of your interaction with MCE? Your best estimate is fine.

- IN3. Now please think about the action you would have taken with regard to installing energy saving equipment that helps save energy if you hadn't interacted with MCE.

Using a scale from 0 to 10, where 0 is "Not at all likely" and 10 is "Extremely likely," if you had not interacted with MCE through its <NR activity>, what is the likelihood that you would have installed EXACTLY the same energy saving equipment either at the same time or later?

[ASK IF IN3>0]

- IN4. Using the same scale from 0 to 10, if you had NOT interacted with MCE through its <NR activity>, what is the likelihood that you would have installed exactly the same energy saving equipment **within 12 months of when you did it**?

[ASK IF IN4>0]

- IN5. When do you think you would have installed the energy saving equipment had you not interacted with MCE through its <NR activity>? Please answer relative to the date that you **actually** installed the energy saving equipment:

0. At the same time
1. Within 6 months
2. More than 6 months up to 1 year later
3. More than 1 year up to 2 years later
4. More than 2 years up to 3 years later
5. More than 3 years up to 4 years later
6. More than 4 years later
8. Not sure

[ASK IF IN5=6]

- IN6. Why do you think it would have been over 4 years later? [OPEN END]

### Attribution Ratio Algorithm

Based on the responses to the questions above, the evaluation team calculated customer-level attribution ratios using the following algorithm:

#### Equation 1. Attribution Ratio Formula

*Attribution Ratio = Average (NR Relative Influence, Adjusted No NR Activity)*

*Where:*

*NR Relative Influence = (IN2a score/10)*

*Adjusted No NR Activity = 1 - (IN3 score/10) \* Timing adjustment*

*Timing adjustment = [1 - (# months expedited from IN5 - 6)/42]*

We used the following values to represent the # of months expedited since the survey responses provided ranges from which respondents could select:

Responses to IN5	Month Value	Timing Adjustment
0. At the same time	0	1
1. Within 6 months	0	1
2. 6 months to a year	9	0.928571
3. More than 1 years up to 2 years later	18	0.714286
4. More than 2 years up to 3 years later	30	0.428571
5. More than 3 years up to 4 years later	42	0.142857
6. More than 4 years later	48	0
8. Not sure	Not sure	If IN4 = 8, 9, or 10, then Timing Adjustment = 0; If IN4 < 8, then Timing Adjustment = 0.5

## 4. Program Theory and Logic Models

The evaluation team reviewed MCE's existing program theory and logic models (PTLM) and compared them to what we learned from our program materials review and in-depth interviews conducted with MCE program managers. In the case of LCE, the team developed draft PTLMs for its programs because no models existed. Below, the team describes the review and development of these models for selected MCE and LCE programs.

### 4.1 Program Theory and Logic Models for Selected MCE Programs

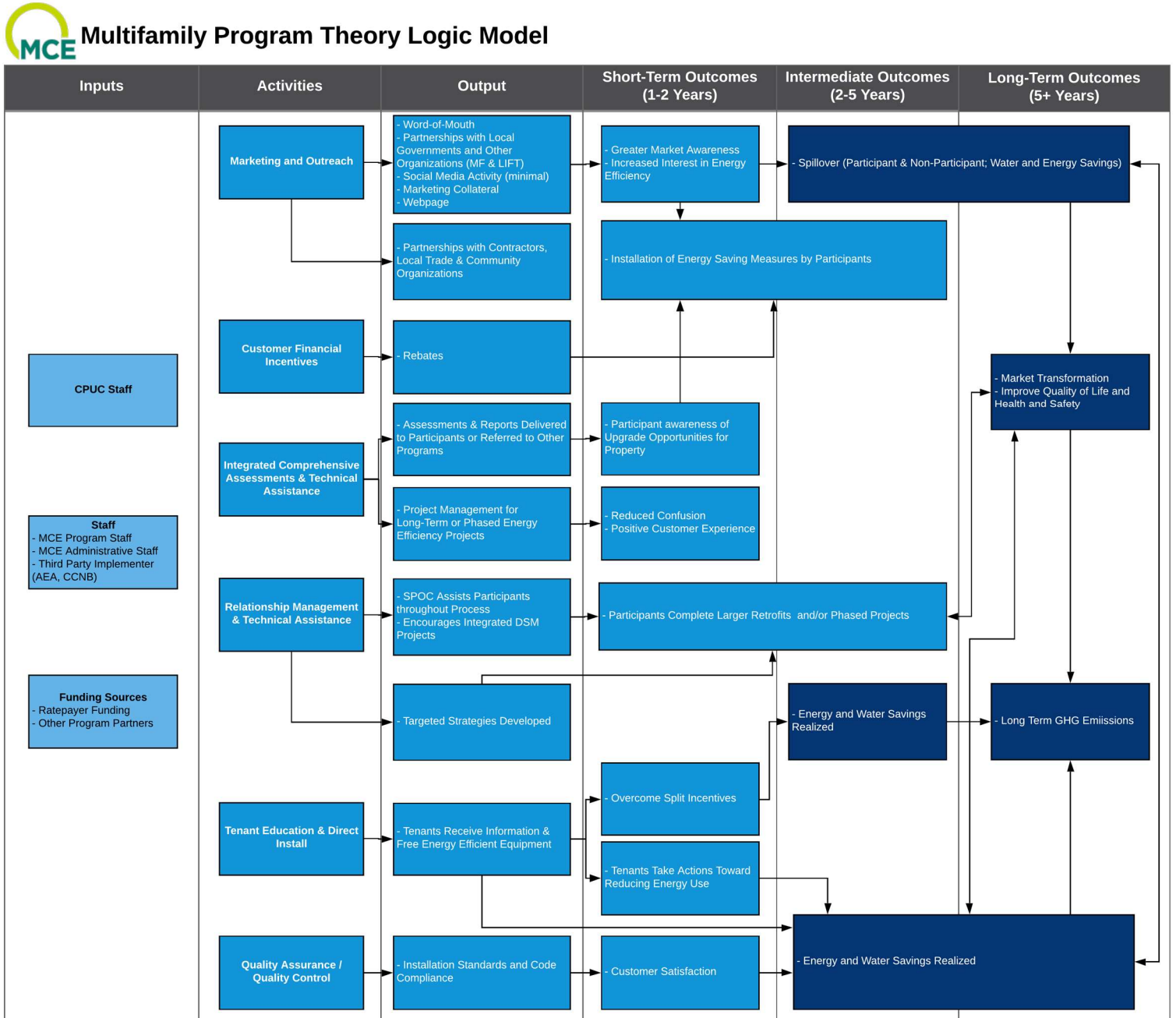
The team reviewed previously developed PTLMs available for MCE's Multifamily, Single-Family, and Small Commercial programs.<sup>21</sup> Based on this review, the team decided to update the models for the Multifamily and Small Commercial programs since to account for their reliance on non-resource activities (i.e., technical assistance, audits, marketing and outreach, etc.). The team-based the updated models on the versions included in MCE's 2017 program implementation plan and information gained during interviews about the operation of these programs during the 2016-2017 program years. The team then circulated draft models to MCE staff for their review and comments on any missing inputs, activities, outputs, or outcomes of the Multifamily and Small Commercial programs. The draft models were updated based on feedback from MCE staff and are presented in Figure 5 and Figure 6.

Both of the updated MCE program theory and logic models include various non-resource elements to support the programs. For example, marketing and outreach activities to promote the Multifamily program include word-of-mouth, marketing collateral, MCE's webpage, and partnerships with local governments and organizations. The technical assistance provided through the program also provides useful information about how to improve EE through equipment upgrades and recommended actions to reduce energy usage. The Small Commercial program theory and logic model shows that MCE relies on some of the same marketing and outreach strategies as the Multifamily program, but also uses street canvassing and referrals, advertisements, community events, and information included in newsletters and blogs. The Small Commercial program offers free audits (listed as technical assistance in the model) to provide information to small businesses to help them save energy. The outcomes of the activities and outputs for both programs include energy savings, greater EE awareness, and interest in EE.

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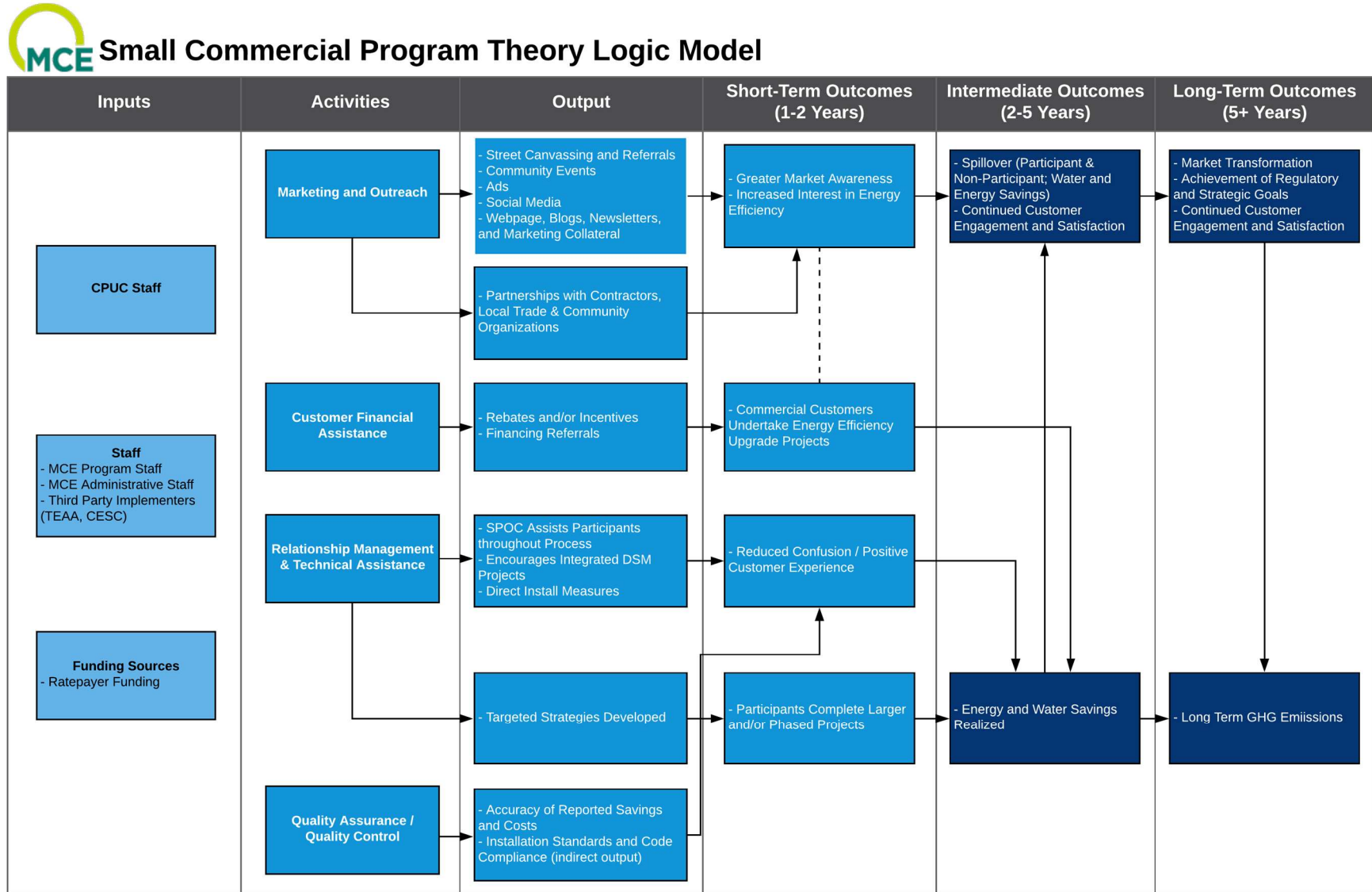
<sup>21</sup> No model of MCE's Financing program was available. Since the program is now closed, the evaluation team decided not to pursue development of a program theory and logic model for this program.

Figure 5. MCE's Multifamily Program Theory Logic Model



Note: MCE works with third-party implementers such as the Association for Energy Affordability (AEA) and Conservation Corps North Bay (CCNB) to implement the Multifamily program.

Figure 6. MCE's Small Commercial Program Theory Logic Model



Note: MCE works with third-party implementers such as The Energy Alliance Association (TEAA) and Community Energy Services Corporation (CESC) to implement the Small Commercial program.

## 4.2 Program Theory and Logic Models for LCE's Programs

As mentioned earlier, no PTLMs existed for LCE's programs. Given that the CCA now offers two programs, Energy Advisor and Small Commercial Direct Install, the evaluation team decided to create program theory and logic models for both. The team was particularly interested in developing a model for the Energy Advisor program given that it is exclusively a non-resource program. We based the models on descriptions of the programs included in the materials provided in response to our data request and information shared with us during a program manager and implementer group in-depth interview conducted in March. Once we developed draft models, the team circulated them to LCE and implementation staff for their review and incorporated their feedback into finalized versions of these models. The models are presented below in Figure 7 and Figure 8.

Both models include marketing and outreach activities to promote LCE's programs including social media, information on its web page, and printed marketing materials. Both programs also rely on the conveyance of information to customers about how the installation of EE equipment can reduce usage. In the case of the Energy Advisor program, LCE uses the telephone home assessment to educate residential customers about EE and to refer customers to PA resource programs that lead to claimable savings. For the Small Commercial Direct Install program, energy assessors provide recommendations to install EE equipment and provide directly installed measures that allow LCE to claim savings. The goal of the program is to increase EE awareness and to educate customers about the benefits of investing in EE equipment and practices.



Figure 7. LCE's Energy Advisor Program Theory Logic Model

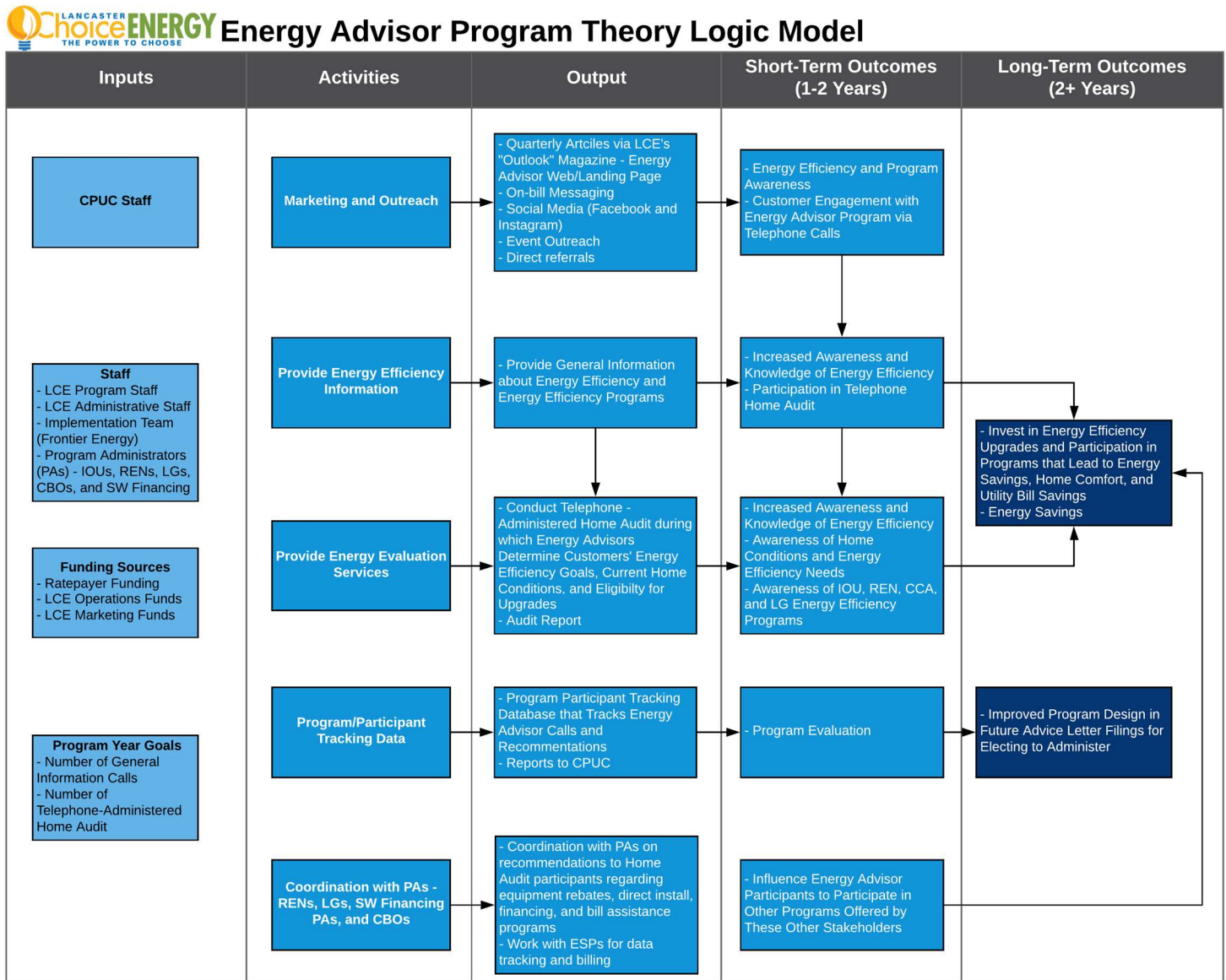
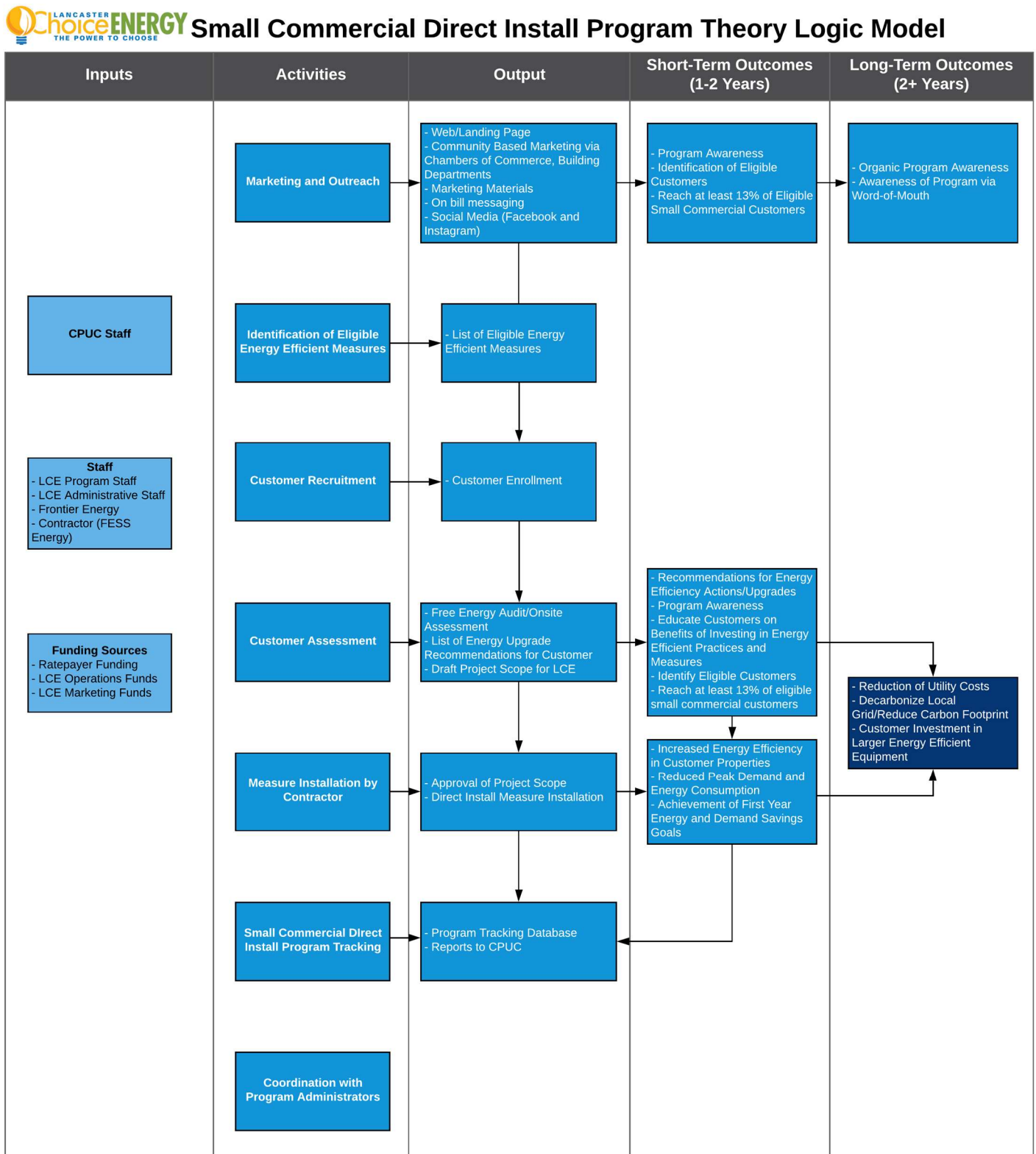




Figure 8. LCE's Small Commercial Direct Install Program Theory Logic Model



## 5. Evaluability Assessment

The evaluation team conducted evaluability assessments on LCE and MCE program data to assess the availability, quality, and completeness of data tracked by each CCA for their non-resource program activities. In the process the team assessed the feasibility of conducting a channeling analysis by merging CCA non-resource program data with CPUC program data and our ability to use the results of the channeling analysis to develop a sample of participants for the web survey. The evaluation team presents findings from the evaluability assessments of LCE and MCE data in this section.

Based on detailed reviews of the data provided by LCE for its Energy Advisor program and MCE for its various non-resource activities associated with commercial audits, marketing and outreach, and multifamily property assessments, the evaluation team found that the data provided is mostly complete and of sufficient quality to support a channeling analysis and survey sample development for specific non-resource activities. The team bases this conclusion on the data fields collected by LCE and MCE as well as the completeness and quality of the data provided to the evaluation team. Further details about the data provided by each CCA are provided below.

### 5.1 LCE Evaluability Assessment

In response to a data request submitted last December 28, 2018, the evaluation team received LCE program data for the Energy Advisor program in January 2019 and no data for its Small Commercial Direct Install program as it did not begin until Spring 2019. LCE launched the Energy Advisor program September 2018 and had received a total of five customer calls between September and December of 2018. Since the Energy Advisor program launched in 2018, there is no data available for evaluation of program years 2016 and 2017. Hence, the evaluation team decided to limit the assessment of LCE programs to an evaluability assessment.

#### 5.1.1 Energy Advisor Program

##### Data Review Summary

Of the five customers who participated in LCE's Energy Advisor program in late 2018, four received energy audits over the telephone, while one participant inquired about support for paying a constituent's energy bill. Table 9 summarizes the evaluation team's assessment of the program data collected for five LCE Energy Advisor program participants in 2018.

The evaluation team found that LCE did not track street addresses or zip codes for participants of the program nor does it track utility customer identifiers, such as customer account numbers or service account numbers. After learning the CPUC's interest in having this information tracked for channeling analysis purposes, the implementation team indicated it would record street addresses and zip codes beginning in 2019. This information would potentially facilitate merging records in the LCE Energy Advisor program data to the CPUC database to support a channeling analysis, however street address is often recorded differently making it challenging to merge on this field. LCE implementation staff noted that it did not plan on asking for utility account identifiers as this information is often not readily available to customers who call to receive a telephone energy audit. Additionally, the implementation staff noted the evaluation team could locate these identifiers by locating matches in the CPUC program data based on customer mailing address. The evaluation team understands that customers do not have their customer account numbers readily available, but also finds that locating this information based on street addresses does not always prove successful.

Table 9. LCE Energy Advisor Program Data Review Summary

Field Name	Description	Data Completeness <sup>a</sup>	Data Quality <sup>b</sup>	Mergeable with CPUC Data <sup>c</sup>
Account Name	Customer name associated with the account	✓	✓	✓
Caller Type	Identifies customer sector (i.e., residential customer, public sector agency staff)	✓	✓	✓
Customer Phone Number	Customer contact telephone number	✓	✓	✓
Customer Email Address	Customer contact email address	✓	✓	✓
Street Address	Customer street address	Missing all entries	Unable to Assess	✓ <sup>d</sup>
City	Customer city address	✓	✓	✓
State	Customer state address	✓	✓	✓
Zip Code	Customer zip code	Missing all entries	Unable to Assess	✓ <sup>d</sup>
Utility Providers	Customer electric and gas utility service providers	✓	✓	✓
Number of Years in Home	Number of years in address associated with account	Missing one entry	✓	Not in CPUC Database
Rent or Own	Home ownership	✓	✓	Not in CPUC Database
Year Built	Year home was built	Missing one entry	✓	Not in CPUC Database
Date of Call	Date customer called Energy Advisor call center	✓	✓	Not in CPUC Database
Call Status	Denotes action item completed during the call (e.g., “Audit Report Delivered,” “Caller Request Completed”)	✓	✓	Not in CPUC Database
Telephone Audit Completed	Indicates if telephone audit was completed (i.e., Yes/No) during the call	✓	✓	Not in CPUC Database
Date Report Sent	Date audit report was sent to the customer	✓	✓	Not in CPUC Database
Program Info Provided	Energy efficiency program information provided to customer	✓	✓	Not in CPUC Database
Reason for Call	Customer reason for calling Energy Advisor	✓	✓	Not in CPUC Database
Current Issues in Home	Energy related issues in customer’s home		✓	Not in CPUC Database

Field Name	Description	Data Completeness <sup>a</sup>	Data Quality <sup>b</sup>	Mergeable with CPUC Data <sup>c</sup>
Call Notes	Miscellaneous notes regarding the call or customer	✓	✓	Not in CPUC Database
Previous Utility Program Participation	Lists utility program customer previously participated in	✓	✓	✓ <sup>e</sup>
Energy Advisor	Energy Advisor call center agent	✓	✓	Not in CPUC Database

<sup>a</sup> A check (✓) indicates that the data field is populated completely for each participant record in the dataset.

<sup>b</sup> Refers to the quality of data in each field (i.e., standardized format across all records, spelling, consistency in entries within each field, etc.) A check (✓) indicates that the data is of good quality for each participant record in the dataset. Notably, some fields cannot be assessed due to missing data.

<sup>c</sup> A check (✓) indicates that there is a similar field in the CPUC program database and that it is possible to merge LCE program data with CPUC program data using the fields marked.

<sup>d</sup> While data is missing, the field does exist in the CPUC program database. If populated by LCE, the field can potentially be used to merge LCE program data and CPUC program data.

<sup>e</sup> The CPUC program data contains historical claims data as far back as 2013. As such the field can be cross-referenced or merged with CPUC data to identify/confirm an LCE participant's previous utility program participation.

## Data Quality and Completeness

While the Energy Advisor program data provided by LCE was limited to five participants, the data was of good quality. Data formats were consistent within each of the 22 fields, for instance, "Account Name" always included the participant's first and last names separated by a single space, telephone numbers were formatted consistently, following a single number format (i.e., (XXX) XXX-XXXX), and repetitive entries such as those indicating activity status were labeled the same (i.e., "Call Status" consistently says Audit Report Delivered or Caller Request Complete, "Telephone Audit Completed" either said Yes or No, and "Rent or Own" says either Rent or Own).

As seen in Table 9, most of the fields in the Energy Advisor program data were completely populated as necessary. However, there were two fields that may be useful in conducting a channeling analysis that were completely blank, namely "Customer Street Address" and "Customer Zip Code." There were also missing records in two other fields, "Number of Years Associated with Account" and "Year Home was Built." While these two fields are not necessary for channeling analysis, the "Number of Years Associated with Account" field may help evaluators identify records where program participants have moved. Additionally, "Year Home was Built" indicates the age of the property, which may help indicate whether a home and/or facility is energy efficient based on CA building codes.

Aside from missing data entries, the program data lacked Unique Identifiers (UID) such as Customer IDs and Customer Premise IDs that may be used to identify or track each distinct participant and/or participant and address combination over time. The program data also excludes unique utility account identifiers such as participant electric and/or gas account numbers. These UIDs would be useful in reliably identifying and/or tracking participants should they engage in other energy related activities such as participating in other non-resource or resource programs offered by LCE or other utility companies.

## Feasibility of Channeling Analysis

Despite the lack of UIDs and/or utility Account IDs, there are a few fields in the Energy Advisor program database that evaluators can use to merge with CPUC program data, thus making a channeling analysis and survey sample development feasible. These fields include a combination of “Account Name,” “Customer Phone Number,” “Customer Email Address,” “Street Address” and “City” or “Zip Code” where available. In the absence of UIDs or electric or gas Account IDs, the evaluation team may merge LCE and CPUC program data by using a combination of customer or account names and contact information. While this method is less reliable than using UIDs or account IDs, when the program data is of good quality, the method may yield a good number of matching records between LCE and CPUC program databases. As indicated in Table 9, evaluators can merge (and/or cross-reference) the current Energy Advisor program data with CPUC program data utilizing a combination of the following fields:

- Account Name
- Caller Type
- Customer Phone Number
- Customer Email Address
- Street Address (provided that this field is populated)
- City
- State
- Zip Code (provided that this field is populated)
- Utility Providers
- Previous Utility Program Participation

To merge Energy Advisor and CPUC program data more reliably, track customer participation in LCE and other utilities’ energy efficiency programs, and conduct a channeling analysis, the evaluation team recommends that LCE include the following fields in their program data:

- Unique identifiers for participants and participant properties such as:
  - Customer ID: A UID for each customer that is unique to a customer account and property (i.e., customer name, electric or gas account numbers, and address)
  - Premise ID: A UID for each property based on the customer’s full-service address (optional)
- Electric and/or gas account numbers (i.e., LCE and SoCalGas customer account numbers)
- Complete street address, including unit or suite numbers in case of multifamily properties
- Zip Code

In addition to the Energy Advisor program data, LCE also provided the evaluation team with a list of fields they have been collecting for the Small Commercial Direct Install (SCDI) program since the program launched in 2019. Table 28 (in Appendix A) lists data that LCE is collecting for the SCDI program. While the team has yet to review SCDI data, assuming the following fields are collected and populated complete, it may also be feasible to merge SCDI program data with CPUC program data for evaluation purposes.

- Service Account Number and/or other unique identification numbers per participant or premise/service address
- Business Name
- Service Account Name
- Service Account Address
- Service Account City
- Service Account Street
- Service Account ZIP
- Customer Contact Name
- Customer Contact Phone 1
- Customer Contact Phone 2

## 5.2 MCE Evaluability Assessment

In response to the CPUC's data request, the evaluation team received MCE non-resource activity related data for the Small Commercial, Multifamily, Single-Family, and Financing Programs on January 25, 2019. The data request included Customer Names, Customer Addresses, Phone Numbers, Email Addresses, Types of Non-resource activities in which customers participated, Participation Dates, Unique Identifiers including Utility Customer IDs, Gas and Electric IDs, Premise IDs, and any other Unique Identifiers.

### 5.2.1 Small Commercial Non-Resource Activity Tracking Data

For the Small Commercial program, the evaluation team requested any data available on selected strategies and achievements presented in MCE's 2016 and 2017 Annual Reports about non-resource activities conducted to support the Small Commercial program. The data received and the results of the evaluation team's review of the data are summarized in Table 10.

Table 10. MCE Small Commercial Data Review Summary

Small Commercial Non-Resource Activity	Description	Data Completeness <sup>a</sup>	Data Quality <sup>b</sup>	Mergeable with CPUC Data <sup>c</sup>
Communications sent regarding program success stories to promote program offerings via case studies, newsletters, social media, etc.	<ul style="list-style-type: none"> <li>■ Email addresses of 5,196 non-residential and residential eNewsletter subscribers</li> </ul>	✓	✓	✓
Partnership with Marin Builders Association	<ul style="list-style-type: none"> <li>■ No contractor list available (not tracked)</li> </ul>	N.A.	N.A.	N.A.
Outreach toward High Energy Intensity Businesses	<ul style="list-style-type: none"> <li>■ Business names and city location of 17 high energy intensity businesses</li> </ul>	✓	✓	✓

Small Commercial Non-Resource Activity	Description	Data Completeness <sup>a</sup>	Data Quality <sup>b</sup>	Mergeable with CPUC Data <sup>c</sup>
	that would be ideal candidates for participation in the Small Commercial Program			
Small Commercial Energy Audits	<ul style="list-style-type: none"> <li>Business names and corresponding city location of energy audit recipients in 2016</li> <li>Business names and corresponding street address and city information of energy audit recipients in 2017</li> </ul>	✓	✓	✓
Support of Local Green Jobs via Funding Local Work Hours through Implementation Contracts	<ul style="list-style-type: none"> <li>No recipient staff list available (not tracked)</li> </ul>	N.A.	N.A.	N.A.

<sup>a</sup> A check (✓) indicates that the data field is populated completely for each participant record in the dataset.

<sup>b</sup> Refers to the quality of data in each field (i.e., standardized format across all records, spelling, consistency in entries within each field, etc.) A check (✓) indicates that the data is of good quality for each participant record in the dataset. Notably, some fields cannot be assessed due to missing data.

<sup>c</sup> A check (✓) indicates that there is a similar field in the CPUC program database and that it is possible to merge LCE program data with CPUC program data using the fields marked.

## Data Review Summary

The evaluation team reviewed the data provided for the non-resource activities of MCE's Small Commercial program and found that the list of eNewsletter subscriber email addresses was sufficient and of good quality for purposes of the channeling analysis and survey sample development. Similarly, the list of business names, addresses and city provided for energy audits completed in 2017 was of good quality and useful for merging MCE data with CPUC program data. On the other hand, the data listing high-intensity businesses (by business name) and the list of business names and corresponding cities that received energy audits in 2016, while useful and of good quality, would have required the evaluation team to perform additional research on the street address of the business to merge the data provided with CPUC program data reliably.

Overall, the data received for the Small Commercial non-resource activities were sufficient, of good quality, and were useful for the remaining evaluation activities. However, to more reliably and accurately merge MCE data with CPUC program data, the evaluation team recommends tracking the following fields at minimum for other evaluations:

- Unique identifiers (i.e., service account numbers) for businesses that complete energy audits
- Business customer or contact names for all non-resource activities, including business name and first and last name of contact person for each participating business
- Complete service and/or mailing addresses, including street address, city and zip code, where currently not tracked
- Contact telephone numbers
- Contact email addresses for all activities, where currently not tracked

### 5.2.2 Single-Family Non-Resource Activity Tracking Data



The evaluation team requested tracking data for MCE’s MyEnergyTool website, MyEnergyTool registrants who participated in the CoolCA Challenge, MyEnergyTool registrants who generated action plans, and tracking data for MCE’s Seasonal Savings Pilot launched in 2017. The team reviewed tracking data and other documentation (i.e., reports, engagement statistics) provided by MCE as part of their response to the data request for single-family non-resource activities and found the data to be of high-quality and useful for this evaluation. Results of the data review are detailed below.

## Data Review Summary

As shown in Table 11, the evaluation team received tracking data for MyEnergyTool registrants since 2016 and a list of customer identification numbers for CoolCA Challenge participants. Most of the fields in the MyEnergyTool tracking data were completely populated and are of high quality. Fields that were completely blank or had minimal data entries such as “Control”, “Treatment”, and Opower related fields are irrelevant to the channeling analysis and survey sample development, and as such, were ignored. The evaluation team compared the customer identification numbers provided for CoolCA Challenge participants and determined that the customer identification numbers can be used to identify CoolCA Challenge participants in the MyEnergyTool data, which can be merged with CPUC program data for the channeling analysis utilizing customer names, email addresses, and/or address fields (i.e., street address, city, zip).

Though the data provided for the Single-Family non-resource activities is sufficient for the evaluation activities included in this study, the evaluation team recommends that MCE include service account numbers in the MyEnergyTool data tracking to facilitate easy and more precise matching between MCE Single-Family tracking data and CPUC program data.

Table 11. MCE Single-family Data Review Summary

Single-Family Non-Resource Activity Tracking Data	Description	Data Completeness <sup>a</sup>	Data Quality <sup>b</sup>	Mergeable with CPUC Data <sup>c</sup>
<b>MyEnergyTool Tracking Data</b>				
loginid	Unique login identification number	✓	✓	Not in CPUC Database
custid	Unique customer identification number	✓	✓	Not in CPUC Database
claimed	Claimed flag (binary)	✓	✓	Not in CPUC Database
treated <sup>d</sup>	Identifies registrants in treatment group	Unknown	Unknown	N.A.
control <sup>d</sup>	Identifies registrants in control group	Unknown	Unknown	N.A.
unit_type	Identifies home or unit type (e.g., single-unit, single-unit-multifamily)	✓	✓	✓
account_id	Customer account identification number	✓	✓	✓
first_name	Participant’s first name	✓	✓	✓
last_name	Participant’s last name	✓	✓	✓
address	Participant’s street address	✓	✓	✓
city	Participant’s city	✓	✓	✓
zip	Participant’s zip	✓	✓	✓
opower_first_name	Participant’s first name with Opower	Missing all entries	Missing all entries	Missing all entries
opower_last_name	Participant’s last name with Opower	Missing all entries	Missing all entries	Missing all entries
opower_email	Participant’s email address with Opower	Missing all entries	Missing all entries	Missing all entries

Single-Family Non-Resource Activity Tracking Data	Description	Data Completeness <sup>a</sup>	Data Quality <sup>b</sup>	Mergeable with CPUC Data <sup>c</sup>
email	Participant's email address	✓	✓	✓
<b>MyEnergyTool Related Activities</b>				
CoolCA Challenge Participants	Customer IDs of CoolCA Challenge Participants via the MyEnergyTool	✓	✓	✓ <sup>e</sup>
Action Plans	No tracking data received	N.A.	N.A.	N.A.
<b>Seasonal Savings Pilot ME&amp;O Activities</b>				
Marketing, Education and Outreach for Seasonal Savings Pilot	No tracking data received	N.A.	N.A.	N.A.

<sup>a</sup> A check (✓) indicates that the data field is populated completely for each participant record in the dataset.

<sup>b</sup> Refers to the quality of data in each field (i.e., standardized format across all records, spelling, consistency in entries within each field, etc.) A check (✓) indicates that the data is of good quality for each participant record in the dataset. Notably, some fields cannot be assessed due to missing data.

<sup>c</sup> A check (✓) indicates that there is a similar field in the CPUC program database and that it is possible to merge LCE program data with CPUC program data using the fields marked.

<sup>d</sup> Data provided but not needed in channeling analysis

<sup>e</sup> The evaluation team was able to identify CoolCA Challenge participants within the tracking data containing MyEnergyTool registrants, which can be merged with CPUC program data.

### 5.2.3 Multifamily Non-Resource Activity Tracking Data

The evaluation team requested program data available for the various non-resource activities carried out by MCE as part of their Multifamily program such as technical assistance, email and telephone, community-based communications marketing, education and outreach activities, among others. In response, MCE provided data for the following non-resource activities:

- Increased Email and Phone Communications with Multifamily Participants
- Marketing and Outreach Presentations with HOAs and Local Agencies
- Partnering with Marin Municipal Water District (MMWD) to install water-saving devices and connect with property owners
- Technical Assistance Recipients
- Low-income Properties Reached by Multifamily Program
- Properties with whom MCE Engaged through its Partnership with “Energize Richmond Campaign”
- Properties with whom MCE Engaged through its Partnership with Green and Healthy Home Initiative in Marin (GHHI Marin)
- LIFT Pilot Program Recruitment/Outreach
- Properties who benefitted from MCE’s engagement with local water agencies
- Partnership with Rising Sun Energy Center on a stand-alone Direct Install program (including workforce development and resident education)

The evaluation team also requested data for the following non-resource activities for the Multifamily program, however, per MCE's response, there is no central database that tracks information for these activities:

- Expansion of referrals to include electric vehicle and solar technical assistance and rebates
- Coordination and support for workforce development training via Marin City Community Development Corporation (MCCDC) clients in 2016 and 2017

## Data Review Summary

The evaluation team reviewed data provided by MCE for the various non-resource activities undertaken as part of the Multifamily program and found that, in most instances, property names and cities in which properties are located were tracked. In some instances, customer account numbers, electric and gas service account identification numbers were tracked as well. Similarly, property contact names, email addresses, and telephone numbers were also tracked for some activities, but not others. Table 12 details findings from the data review.

## Data Quality and Completeness

As seen in Table 12, the data provided by MCE for their Multifamily non-resource program activities are generally completely populated and are of high quality. In some instances, electric and/or gas service account numbers and customer numbers were provided, however, was missing for some or all projects.

## Feasibility of Channeling Analysis and Survey Sample Development

Based on a detailed review of the data provided by MCE for the various non-resource activities of their Multifamily program between 2016 and 2017, the evaluation team found that program data collected for the program is sufficient and of good quality such that it may be used to conduct a successful channeling analysis with CPUC program data and be used to develop a sample for the participant survey. However, the evaluation team recommends consistent tracking of fields such as property names, property contact names, street addresses, city, zip, email addresses, and/or telephone numbers. We also recommend including utility service account numbers in data tracking as well as site identification numbers, when feasible, as these fields are found in CPUC's program database and can facilitate more precise matching between MCE and CPUC databases.

Table 12. MCE Multifamily Non-Resource Activity Data Review

Multifamily Non-Resource Activity	Description	Data Completeness <sup>a</sup>	Data Quality <sup>b</sup>	Mergeable with CPUC Data <sup>c</sup>
<b>Increased Email and Phone Communications with Multifamily Participants</b>				
Project: Project Name	▪ Property name	✓	✓	Not in CPUC Database
Program Year	▪ Multifamily program year	✓	✓	Not in CPUC Database
Date Parent Application Received	▪ Date application was received	✓	✓	✓ <sup>d</sup>
Date Rebate Reservation Approved	▪ Date application for rebate was approved	✓	✓	✓ <sup>d</sup>
Date Rebate Approval	▪ Date rebate was approved	✓	✓	✓ <sup>d</sup>
Primary Project Contact	▪ Property contact name	✓	✓	✓
Communication Type	▪ Mode of communication	✓	✓	✓
Email	▪ Contact email address	✓	✓	✓
Phone	▪ Contact telephone number	✓	✓	✓
<b>Marketing and Outreach Presentations with Home Owner Associations and Local Agencies</b>				
Projects/Outreach Group	▪ Outreach event name	✓	✓	N.A.
Attendees	▪ Name of associations/organizations attending event	✓	✓	N.A.
Location	▪ Street and city location of event	✓	✓	N.A.
Date	▪ Date of event	✓	✓	N.A.
<b>Partnered with Marin Municipal Water District (MMWD) to install water saving devices and connect with property owners</b>				
Unit #	▪ Tenant unit number	✓	✓	Not in CPUC Database
City	▪ City property is located	✓	✓	✓
Zip Code	▪ Zip code property is located	✓	✓	✓
Water Bill Service Number	▪ Service number for water bill	Missing some entries	✓	Unknown
1.5 GPM Showerheads Installed	▪ Quantity of showerheads installed	✓	✓	✓
1.5 GPM Kitchen Aerators Installed	▪ Quantity of kitchen faucet aerators installed	✓	✓	✓
1.0 GPM Bathroom Aerators Installed	▪ Quantity of bathroom faucet aerators installed	✓	✓	✓
<b>Technical Assistance Recipients</b>				
Project: Project Name	▪ Property name	✓	✓	✓

Multifamily Non-Resource Activity	Description	Data Completeness <sup>a</sup>	Data Quality <sup>b</sup>	Mergeable with CPUC Data <sup>c</sup>
Number of Parent Units	▪ Number of units in property	✓	✓	Not in CPUC Database
Program Year(s)	▪ Program year	Missing some entries	✓	Not in CPUC Database
Parent Project Site Visit Date	▪ Date of site visit	✓	✓	Not in CPUC Database
Date Rebate Reservation Approved	▪ Date application was received	✓	✓	✓ <sup>d</sup>
Date Rebate Approval/ Project Completion Date	▪ Date application for rebate was approved	✓	✓	✓ <sup>d</sup>
Electric SAID	▪ Electric service account identification number	Missing some entries	✓	✓
Gas SAID	▪ Gas service account identification number	Missing some entries	✓	✓
Customer Account	▪ Customer account number	Missing some entries	✓	✓
Low-income Properties Reached by Multifamily Program				
Project	▪ Property name	✓	✓	✓
Affordable Property?	▪ Low-income property flag	✓	✓	Not in CPUC Database
Units	▪ Number of tenant units	✓	✓	Not in CPUC Database
Contact	▪ Contact name	✓	✓	✓
Contact Email	▪ Contact email address	✓	✓	✓
Contact Phone	▪ Contact telephone number	✓	✓	✓
Electric SAID	▪ Electric service account identification number	Missing some entries	✓	✓
Gas SAID	▪ Gas service account identification number	Missing some entries	✓	✓
Account Number	▪ Customer account number	Missing some entries	✓	✓
Partnership with “Energize Richmond Campaign”				
Project: Project Name	▪ Property name	✓	✓	✓
Parent Project City	▪ City	✓	✓	✓
Primary Contact Name	▪ Contact name	✓	✓	✓
Primary Project Contact Email	▪ Contact email address	✓	✓	✓
Primary Project Contact Phone	▪ Contact telephone number	✓	✓	✓

Multifamily Non-Resource Activity	Description	Data Completeness <sup>a</sup>	Data Quality <sup>b</sup>	Mergeable with CPUC Data <sup>c</sup>
Account Number	▪ Customer account number	✓	✓	✓
Start Date of Coordination	▪ Date coordination started	✓	✓	Not in CPUC Database
Included Measures Description	▪ List of included measures	✓	✓	✓
ECIA Incentive	▪ Incentive dollar amount	✓	✓	✓
<b>Partnership with Green and Healthy Home Initiative in Marin (GHHI Marin)</b>				
Project: Project Name	▪ Property name	✓	✓	✓
Parent Project County	▪ County	✓	✓	Not in CPUC Database
Start Coordination Date	▪ Date coordination started	✓	✓	Not in CPUC Database
Primary Project Contact	▪ Contact name	✓	✓	✓
Primary Project Contact Email	▪ Contact email address	✓	✓	✓
Primary Project Contact Phone	▪ Contact telephone number	✓	✓	✓
Account Number	▪ Customer account number	Missing all entries	✓	✓
Rebate	▪ Rebate status	✓	✓	Not in CPUC Database
<b>LIFT Pilot Program Recruitment/Outreach</b>				
Project: Project Name	▪ Property name	✓	✓	✓
Included Measures	▪ Incentivized measures	✓	✓	✓
Primary Project Contact	▪ Contact name	✓	✓	✓
Primary Project Contact Email	▪ Contact email address	✓	✓	✓
Primary Project Contact Phone	▪ Contact telephone number	✓	✓	✓
Number of Parent Units	▪ Number of tenant units	✓	✓	Not in CPUC Database
Date Rebate Reservation Approved	▪ Date application was received	✓	✓	✓ <sup>d</sup>
Date Rebate Approval	▪ Date application for rebate was approved	✓	✓	✓ <sup>d</sup>
Projected Incentive	▪ Estimated rebate dollar amount	✓	✓	Not in CPUC Database
Actual Incentive Amount	▪ Actual rebate dollar amount	✓	✓	✓
Electric SAID	▪ Electric service account identification number	Missing some entries	✓	✓

Multifamily Non-Resource Activity	Description	Data Completeness <sup>a</sup>	Data Quality <sup>b</sup>	Mergeable with CPUC Data <sup>c</sup>
Gas SAID	▪ Gas service account identification number	Missing some entries	✓	✓
Account Number	▪ Customer account number	Missing some entries	✓	✓
<b>Engaged with local water agencies</b>				
Property	▪ Participant data by participating property name	✓	✓	✓
# of Showerheads Installed	▪ Number of showerheads installed	✓	✓	✓
# of Bath Aerators Installed	▪ Number of bath faucet aerators installed	✓	✓	✓
# of Kitchen Aerators Installed	▪ Number of kitchen faucet aerators installed	✓	✓	✓
<b>Partnership with Rising Sun Energy Center on a stand-alone Direct Install program (including workforce development and resident education)</b>				
Project Name	▪ Participant street address	✓	✓	✓
SiteID	▪ Site/premise identification number	✓	✓	✓
ProjectID	▪ Project identification Number	✓	✓	✓
ProjectDescription	▪ Measure specific project description	✓	✓	✓

<sup>a</sup> A check (✓) indicates that the data field is populated completely for each participant record in the dataset.

<sup>b</sup> Refers to the quality of data in each field (i.e., standardized format across all records, spelling, consistency in entries within each field, etc.) A check (✓) indicates that the data is of good quality for each participant record in the dataset. Notably, some fields cannot be assessed due to missing data.

<sup>c</sup> A check (✓) indicates that there is a similar field in the CPUC program database and that it is possible to merge LCE program tracking data with CPUC program data using the fields marked.

<sup>d</sup> If the field is the same as savings claim date, then this can be used to merge data with CPUC program data.



## 6. Channeling Analysis Results

The evaluation team conducted a channeling analysis to determine the proportion of MCE non-resource activity participants who subsequently participated in a PA resource program. We conducted this analysis by looking for records in the non-resource activity datasets and matching them to records in the CPUC program data so long as the records indicating participation in a PA resource program occurred after the participant's interaction with MCE. The channeling analysis located 4% of MCE's non-resource participants in the CPUC program data. This is likely a drastic underestimate because the non-resource activity datasets contained several incomplete records. Because non-resource activities do not directly generate savings, the CPUC does not place any requirements on the PAs to keep standardized records of participants. Additionally, the very nature of certain types of non-resource activities makes it impossible to track who may have seen or been influenced by them. For example, PAs would have an extremely difficult time recording the individuals and businesses exposed to its marketing and outreach campaigns.

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*The channeling analysis located 4% of MCE's non-resource activity participants in the CPUC program data. This is likely a drastic underestimate because the non-resource activity datasets contained incomplete records of many participants, thereby making it difficult to identify matches.*

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The datasets MCE provided to the evaluation team contained different types and amounts of data. For some non-resource activities, such as the list of individuals signed up to receive eNewsletters from MCE, the team received over 5,000 records containing email addresses. Other datasets, such as those tracking Small Commercial audits, included business names and addresses for most, but not all records. In this case, the evaluation team conducted business lookups to fill in missing street addresses. We initially received 1,157 records for small businesses that received audits, but we could only use 909 records in the channeling analysis because we were unable to locate enough information for the remaining audit records.

Along with its non-resource activity data, MCE also provided a dataset of approximately 310,500 customers they served during the evaluation timeframe, including customer ID numbers, names, street addresses, and email addresses. We used this dataset to help fill in missing information in the non-resource tracking datasets. Even with this rich resource, we could not fill in all the missing fields for each record in the non-resource activity tracking data. Note that we did not use this dataset to reach out to customers, but only to fill in missing information in the non-resource datasets.

Table 13 provides a list of non-resource activity datasets along with descriptions of the non-resource activity information and the number of records the evaluation team received in response to the data request. Note that the table below lists the raw number of records provided by MCE and includes duplicate records. Details about the types of information found in the various datasets are included in Section 5 of this report. The table also shows the number of unique records for which the team could identify either an associated email address and/or customer name and mailing address to use in the channeling analysis. The last two columns in the table show, for each non-resource activity dataset, the number of records found in the CPUC program data and the number we could not locate.

Table 13. MCE Non-Resource Participant Channeling Analysis

Non-Resource Activity	Description of Non-Resource Activity	Number of Records Received	Number of Unique Records w/ Contact Information	Records found in CPUC Tracking Data	Records not found in CPUC Tracking Data
<b>Finance Non-Resource Activity</b>					
Projects financed through the PACE program	List of 2015-2017 PACE projects MCE analyzed for savings using meter data.	324	308	30	278
<b>Single-Family Non-Resource Activity</b>					
CoolCA	List of MCE customers who signed up to participate in the CoolCalifornia <sup>a</sup> challenge through MCE's My Energy web portal in 2016.	1,526	163	13	150
<b>Multifamily Non-Resource Activities</b>					
Properties Who Interacted with MCE through its Partnership with Energize Richmond	List of multifamily property owners / managers that benefited from MCE's partnership with the City of Richmond's "Energize Richmond" Campaign where additional incentives were provided to Richmond property owners to help cover out of pocket costs for energy efficiency improvements.	5	5	0	5
Green and Healthy Home Initiative in Marin	List of multifamily property owners / managers the benefitted from MCE's partnership with the Green and Healthy Home Initiative to coordinate rebate and services to address health, safety and aging-in-place issues at properties in Marin.	9	1	0	1
Home Owner Association (HOA) Board	List of presentations where MCE provided information about its Multifamily program to Home Owner Association boards, affordable housing developers, property management companies, property owners and local organizations.	3	3	0	3
LIFT Pilot	List of low income qualified customers that engaged with MCE through its LIFT pilot in 2017. <sup>b</sup>	15	7	4	3

Non-Resource Activity	Description of Non-Resource Activity	Number of Records Received	Number of Unique Records w/ Contact Information	Records found in CPUC Tracking Data	Records not found in CPUC Tracking Data
Low-Income Units	List of customers in low-income multifamily units who received services from MCE in 2016 - 2017.	28	12	0	12
Communication with Multifamily Properties	List of multifamily property owners / managers who received communications about MCE's multifamily program in 2016 - 2017.	56	38	12	26
Properties Treated through MCE's Partnership with Marin Municipal Water District (MMWD)	List of multifamily properties where water saving devices were installed through a partnership between MCE and Marin Municipal Water District.	40	0	0	0
Multifamily Stand-Alone DI Program	List of properties that received equipment through a stand-alone DI program through MCE's partnership with the Rising Sun Energy Center in an effort to build a pipeline of new properties that might participate in MCE's multifamily program (Note: energy savings were claimed from the installation of this equipment)	111	32	3	29
Multifamily Technical Assistance	List of multifamily property owners/managers who received technical assistance through MCE's Multifamily program in 2016 - 2017.	154	8	0	8
Local Water	Multifamily property owners/managers that benefitted from a relationship between MCE and local water agencies to save millions of gallons of water in 2016 - 2017.	25	0	0	0
<b>Small Commercial Non-Resource Activities</b>					
Small Commercial Audits	Audits conducted through MCE's Small Commercial program in 2016 and 2017.	1,157	909	146	763
High Energy Intensity Business	List of high energy intensity businesses that MCE account representatives contacted in 2016 to encourage participation in MCE's Small Commercial program	17	0	0	0
<b>Other Non-Resource Activities</b>					

Non-Resource Activity	Description of Non-Resource Activity	Number of Records Received	Number of Unique Records w/ Contact Information	Records found in CPUC Tracking Data	Records not found in CPUC Tracking Data
eNews	Recipients of MCE's eNewsletters	5,190	4,829	30	4,799
<b>Total</b>		<b>8,660</b>	<b>6,315</b> <b>100%</b>	<b>238</b> <b>4%</b>	<b>6,077</b> <b>96%</b>

Notes: <sup>a</sup> CoolCA was a statewide competition that ran from October 1, 2015 to March 30, 2016. The challenge encouraged CA residents to work to lower their community's carbon footprint collectively.

<sup>b</sup> MCE's LIFT Pilot was designed to leverage incentives provided by the Multifamily Program and further assist income qualified residents in MCE's service area.

## 7. Participant Survey Results

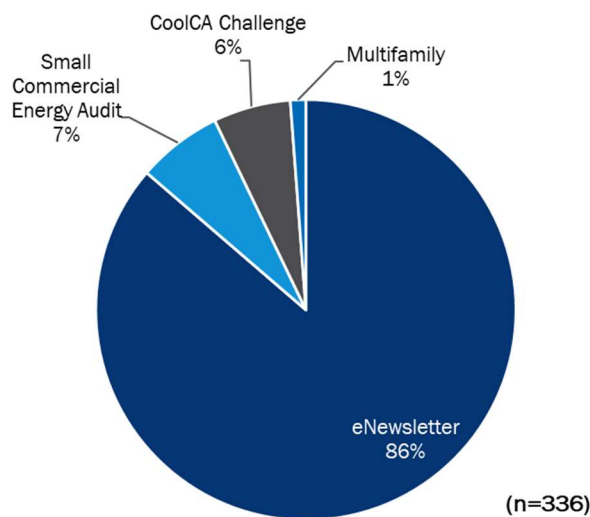
To understand whether and to what extent CCA non-resource activities have influenced customer participation in EE resource programs, installation of EE equipment outside of EE programs, and energy saving behaviors, the evaluation team conducted primary data collection through a CAWI survey among MCE non-resource activity participants.<sup>22</sup> More specifically, the evaluation team conducted the survey among those who were either subscribed to MCE's electronic newsletter (eNewsletter), participated in the CoolCA Challenge, received an energy audit through MCE's Small Commercial program, or received communications and/or technical assistance via MCE's Multifamily program in 2016 and 2017.

In addition to assessing whether MCE's non-resource activities had any influence on customers' decisions to participate in EE resource programs, the survey also sought to determine how participants became aware of the resource programs in which they participated, what drove them to participate in EE resource programs, and how satisfied they were with MCE's non-resource activities. The survey also asks MCE participants about EE actions they took outside of PA resource programs and the level at which MCE has influenced such actions. This section presents findings on these topics.

### 7.1 Survey Respondent Background

The evaluation team fielded the survey among MCE non-resource activity participants between September 3<sup>rd</sup> and 23<sup>rd</sup> in 2019 and received 336 survey completes. As shown in Figure 9, the vast majority of survey respondents (n=336) are customers subscribed to MCE's eNewsletter (86%), followed by Small Commercial participants that received an energy audit (7%), CoolCA Challenge participants (6%), and customers that received communications or technical assistance through MCE's Multifamily program (1%).

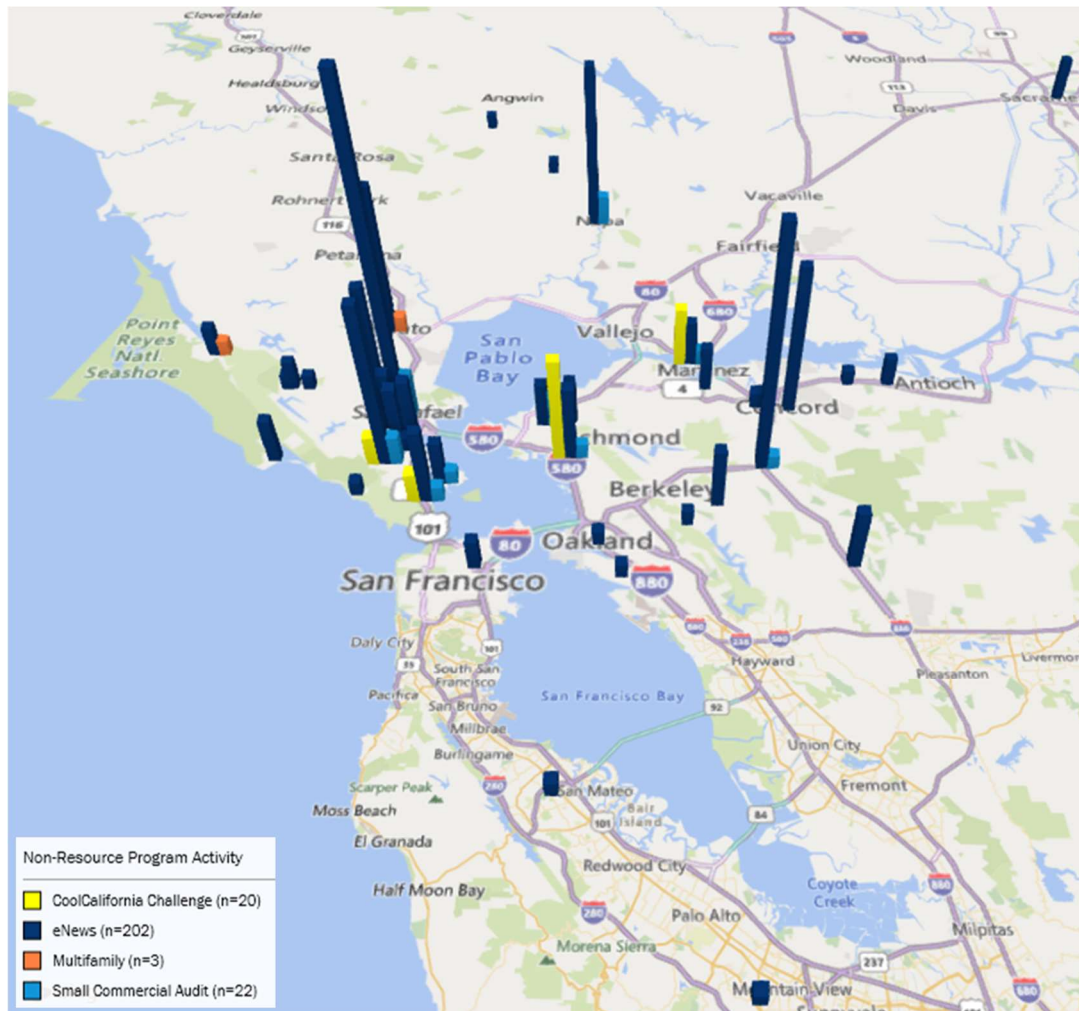
Figure 9. Participant Survey Respondents



<sup>22</sup> The evaluation team excluded LCE customers from the survey as LCE's Energy Advisor and Small Commercial Direct Install programs were launched in 2018 and 2019, respectively. Their programs launched outside of the evaluation time frame and have had minimal participation at the time the evaluation team drew the sample for the survey.

As shown in the following map (Figure 10), a majority of respondents are located in MCE service territories, particularly Marin County, Concord, Napa County, Martinez, and Richmond. Respondents outside of MCE service territory are either mostly eNewsletter subscribers or respondents who previously lived in MCE service territory who have since moved.<sup>23</sup>

Figure 10. Survey Respondents by Non-Resource Activity and City



Note: Respondents without address information are excluded from the mapping analysis.

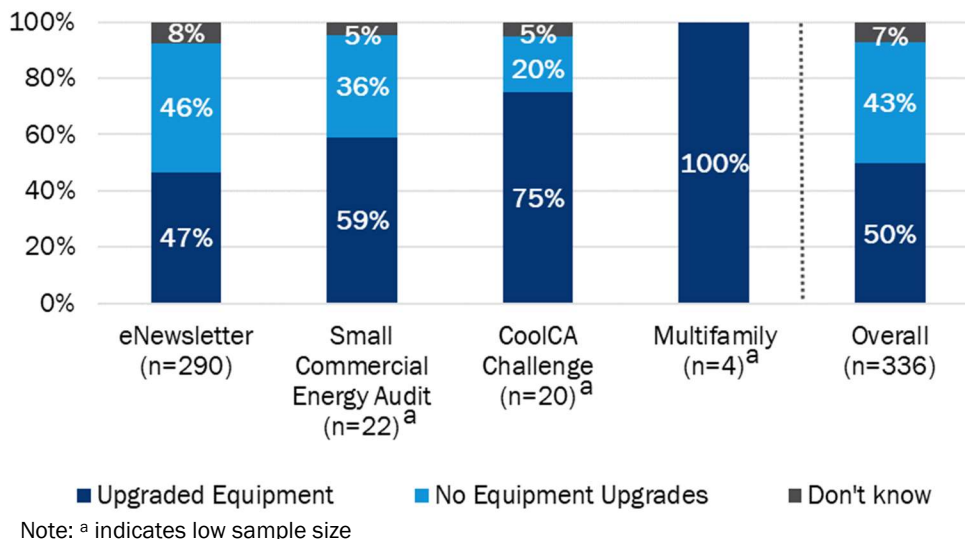
## 7.2 Survey Respondent Energy-Related Activities

Of the 336 respondents, 50% or 167 respondents indicated completing at least one EE equipment upgrade in their home or business facility between 2016 and 2018. Figure 11 shows that 47% of eNewsletter subscribers (n=290), 75% of CoolCA Challenge participants (n=20), 59% of Small Commercial audit recipients

<sup>23</sup> A majority of the contact information the evaluation team received as part of non-resource activity data included email addresses and some mailing addresses. Hence, the evaluation team asked respondents who did not have mailing or service address data to optionally provide their address.

(n=22), and all four Multifamily respondents installed energy efficient equipment. Note that Figure 10 does not distinguish whether the EE equipment was rebated through a PA resource program or not.

Figure 11. Respondents with Equipment Upgrades by MCE Non-Resource Activity



Survey findings suggest that of those who installed at least one type of EE equipment (n=167), 77 or 46% did so through an EE resource program. Ninety respondents or 54% completed their upgrades independent of an EE resource program.

*Of the 336 survey respondents, 50% reported upgrading to EE equipment. Of the 167 respondents who reported upgrading equipment, 46% did so through a PA EE resource program.*

Lighting and ENERGY STAR appliances were the dominant categories of equipment upgrades, followed by energy saving consumer electronics and office equipment, and/or HVAC equipment. Very few installed solar battery storage devices, food service equipment, and refrigeration equipment and none of the respondents reported installing compressed air, as shown in Table 14.

Table 14. Types of Participant Energy Equipment Upgrades of Those Who Installed EE Equipment

Energy Equipment Upgrades (Multiple Response)	Overall (n=167)	eNewsletter (n=135)	Small Commercial Energy Audit (n=13) <sup>a</sup>	CoolCA Challenge (n=15) <sup>a</sup>	Multifamily (n=4) <sup>a</sup>
Lighting Equipment or Lighting Controls	70%	72%	77%	47%	75%
ENERGY STAR appliances	60%	64%	38%	53%	25%
Energy saving consumer electronics and office equipment	42%	43%	31%	47%	25%



Energy Equipment Upgrades (Multiple Response)	Overall (n=167)	eNewsletter (n=135)	Small Commercial Energy Audit (n=13) <sup>a</sup>	CoolCA Challenge (n=15) <sup>a</sup>	Multifamily (n=4) <sup>a</sup>
Heating, cooling and ventilation equipment or controls	39%	43%	31%	20%	0%
Solar panels	31%	34%	0%	20%	50%
Building shell equipment (i.e., insulation and air sealing)	25%	27%	8%	20%	50%
Domestic water heating equipment and controls	24%	25%	8%	13%	75%
Pool equipment (e.g., efficient pool pump, pool pump timer, pool cover)	8%	8%	0%	7%	50%
Electric Vehicle / EV Equipment	6%	7%	0%	7%	0%
Windows and doors	5%	4%	0%	20%	0%
Solar battery storage	3%	4%	0%	0%	0%
ENERGY STAR kitchen and food service equipment	1%	0%	15%	0%	0%
Refrigeration equipment and controls	0%	0%	0%	0%	0%
Compressed air equipment	0%	0%	0%	0%	0%
Other	4%	4%	0%	7%	0%
Don't know	1%	1%	0%	0%	0%

In addition to installing energy efficient equipment, the survey asked respondents who identified themselves as residential customers about energy saving behaviors they took since interacting with MCE's non-resource activities. Since the Small Commercial audits and Multifamily technical assistance activities are not targeted towards residential customers, customers who participated in these activities were not asked about these behavior changes, particularly because the energy saving actions included in the list reflect actions that residents would carry out. Ninety-eight percent, or 245 of the 249 participants who received this question, reported undertaking some kind of action or behavior change to save energy on their own. The most common energy saving actions include turning off lights when not in use, cleaning the lint screen in the clothes dryer, and holding off on running the dishwasher until it is full (Table 15).

Table 15. Participant Energy Saving Actions

Energy Saving Actions (Multiple Response)	Overall (n=245)	eNewsletter (n=227)	CoolCA Challenge (n=18)
Turn lights off when rooms are not in use	75%	75%	78%
Clean the lint screen in the dryer	71%	71%	72%
Make sure the dishwasher is full before it is run	65%	65%	61%
Check dryer vent to be sure it is not blocked	57%	57%	61%
Clean or change filters of heating/cooling equipment	53%	53%	56%
Wash clothes in cold water	52%	52%	56%
Open curtains and shades during the day to let in warming sunlight during cooler months	51%	51%	56%

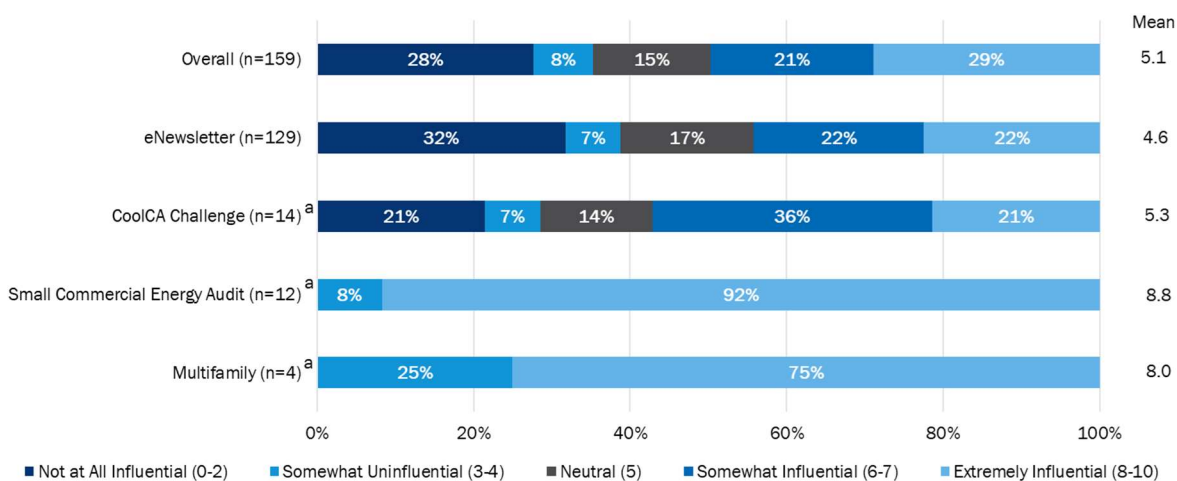
Energy Saving Actions (Multiple Response)	Overall (n=245)	eNewsletter (n=227)	CoolCA Challenge (n=18)
Close curtains and shades at night to protect against drafts during cooler months	50%	49%	67%
Turn off electronics, such as a laptop, when they are not in use	50%	48%	67%
Use a toaster oven instead of a full-size oven	36%	35%	50%
Defrost freezers and refrigerators	15%	15%	17%
Limit use of equipment/appliances	6%	7%	0%
Adjusted timing of equipment/appliance use	2%	2%	0%
Close curtains during the day to keep out heat in summer months	2%	2%	0%
Switched to Electric Vehicle	1%	1%	0%
Other	0.4%	0.4%	0%
None	16%	16%	0%
Don't know	2%	2%	0%

## 7.3 Factors Influencing Energy Saving Equipment Upgrades and Actions

To assess whether MCE's non-resource activities influenced customers' actions toward saving energy, the evaluation team asked survey respondents to rate the level of influence MCE non-resource activities have over their decision to upgrade to energy efficient equipment. As shown in

Figure 12, Small Commercial and Multifamily program participants indicated that MCE resource activities have high levels of influence in their decision toward saving energy through energy equipment upgrades, while eNewsletter subscribers and CoolCA Challenge reported lower levels of influence. Not surprisingly, non-resource activities conducted by MCE as part of resource programs appears effective in influencing program participants to proceed with EE upgrades offered by the program (though the evaluation team recognizes the small number of respondents).

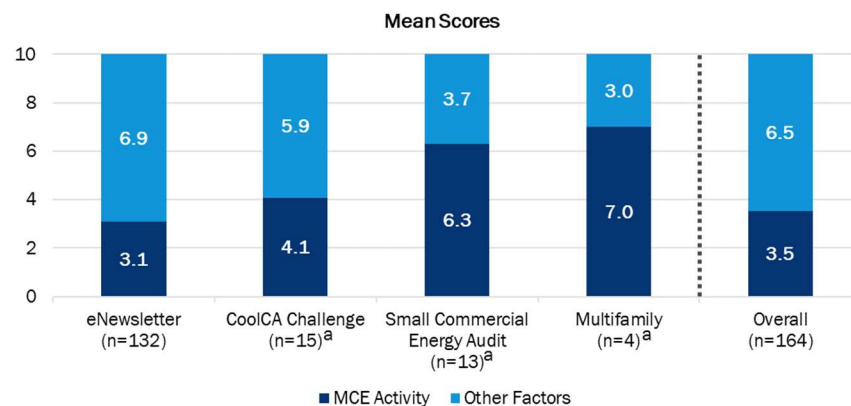
Figure 12. Influence of MCE eNewsletter and CoolCA Challenge on Energy Equipment Upgrades



In addition to assessing the level of influence MCE non-resource activities have over participants' decision to install energy efficient equipment, the evaluation team asked respondents to rate the importance of MCE non-resource activities (i.e., eNewsletter, Small Commercial Energy Audit, CoolCA Challenge, or Multifamily communications and/or technical assistance) relative to other factors that may influence equipment upgrades. Notably, respondents who engaged in MCE's Small Commercial and Multifamily non-resource activities reported higher influence scores on average, while eNewsletter subscribers and CoolCA Challenge participants reported that the influence of other factors were more important on average than MCE non-resource activities' influence (see Figure 13). This is not surprising given that the non-resource activities occurring under the Small Commercial and Multifamily programs are designed to provide information to customers to encourage their participation in these resource offerings. The eNewsletter and the CoolCA Challenge are more general marketing and outreach types of non-resource activities. Overall,

Figure 12 and Figure 13 show that non-resource activities do have some influence on the decision to carry out energy saving upgrades, particularly for participants of MCE's Small Commercial and Multifamily programs. For eNewsletter subscribers and CoolCA Challenge participants, other factors have more influence.

**Figure 13. Average Influence Scores of MCE versus Other Factors on Energy Equipment Upgrades**



Note: <sup>a</sup> Indicates low sample size

When asked about other factors that influenced their decision to upgrade energy equipment, nearly 50% of the respondents who provided an answer (n=142) indicated that awareness and/or concern for the environment or climate change, and energy cost savings as the primary factors. Over a tenth of all respondents were influenced by their participation in EE programs or the rebates and/or incentives offered by such programs. Notably, more than a tenth of eNewsletter subscribers (n=119), two out of the seven MCE Small Commercial non-resource activity respondents, and one out of four Multifamily non-resource activity respondents indicated that they were influenced to upgrade to EE equipment by rebates or incentives or resource program participation.

**Table 16. Other Factors Influential to Energy Equipment Upgrades**

Other Factors to Energy Equipment Upgrades (Multiple Response) <sup>a</sup>	Overall (n=142)	eNewsletter (n=119)	Small Commercial Energy Audit (n=7) <sup>b</sup>	CoolCA Challenge (n=13) <sup>b</sup>	Multifamily (n=3) <sup>b, c</sup>
Awareness and/or concern for environment / climate change	49%	48%	43%	77%	0%
Cost savings	49%	46%	29%	85%	33%
EE program participation / incentive / rebate	13%	13%	29%	0%	33%

Other Factors to Energy Equipment Upgrades (Multiple Response) <sup>a</sup>	Overall (n=142)	eNewsletter (n=119)	Small Commercial Energy Audit (n=7) <sup>b</sup>	CoolCA Challenge (n=13) <sup>b</sup>	Multifamily (n=3) <sup>b, c</sup>
Sense of responsibility	12%	10%	14%	31%	
Desire to save energy	11%	9%	14%	15%	67%
Better / more efficient equipment	8%	8%	0%	15%	33%
Influenced by utility, energy service provider, or energy efficiency organizations	8%	10%	0%	0%	0%
General knowledge	8%	9%	0%	0%	0%
Professional knowledge / advice (e.g., architect, contractor, etc.)	8%	8%	14%	0%	0%
Desire to lower carbon footprint	8%	8%	0%	0%	33%
Necessity for new equipment	7%	7%	0%	8%	33%
Public opinion/word-of-mouth	6%	8%	0%	0%	0%
Switching to renewable energy source	5%	6%	0%	0%	0%
Lifestyle / personal choice (i.e., prefer to be energy efficient)	4%	4%	14%	0%	0%
Literature / media / news	4%	4%	0%	0%	0%
Increase comfort	3%	3%	0%	0%	0%
Increase property value	3%	3%	0%	0%	33%
New construction / remodeling / building code	3%	3%	0%	0%	0%
Tax credit	3%	3%	0%	0%	0%
Interest in technology	3%	3%	0%	0%	0%
Equipment compatibility (e.g., smart home)	2%	3%	0%	0%	0%
Dissatisfaction with energy service provider / utility	1%	1%	0%	8%	0%
Other / miscellaneous	9%	9%	14%	8%	0%

Notes: <sup>a</sup> Excludes invalid responses or responses that are not applicable

<sup>b</sup> Indicates low sample size

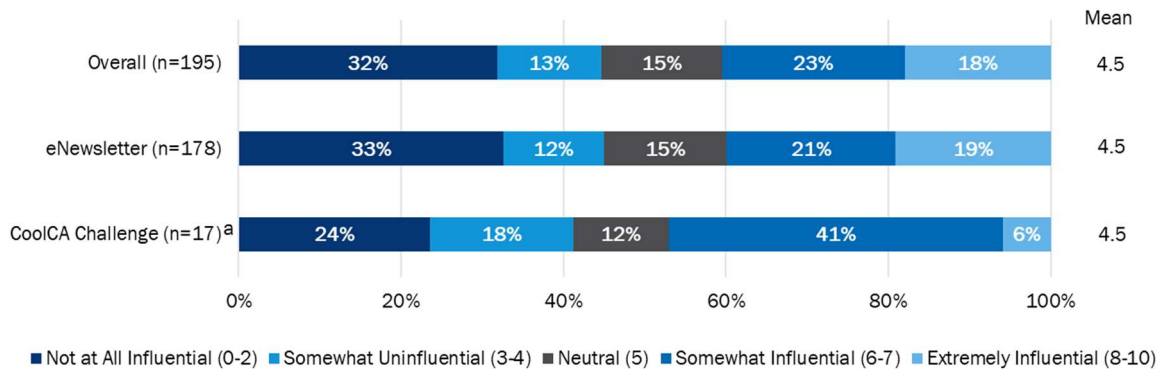
<sup>c</sup> One Multifamily respondent gave MCE Activity a score of 10. As such, the respondent was not asked about other influential factors.

When asked to rate how influential MCE's non-resource activities are on their actions or behaviors toward saving energy, 41% of eNewsletter subscribers and CoolCA Challenge participants overall found these non-resource activities as influential on their actions toward saving energy (providing a score of at least 6 on a scale of 0 to 10), as shown in Figure 14.<sup>24</sup> Notably, a larger share of eNewsletter subscribers (19%) found this non-resource activity extremely influential, especially in comparison to the percentage of CoolCA Challenge participants who thought it was extremely influential (6%). This may be because the eNewsletters not only contain general information about climate change and EE, but also include information about MCE's EE

<sup>24</sup> As indicated earlier, the evaluation team only asked behavior change related questions of residential, single-family respondents as Small Commercial energy audits and Multifamily technical assistance activities are not targeted towards residential customers. Customers who participated in these activities were not asked about behavior changes, particularly because the energy saving actions included in the list reflect actions that residents would carry out.

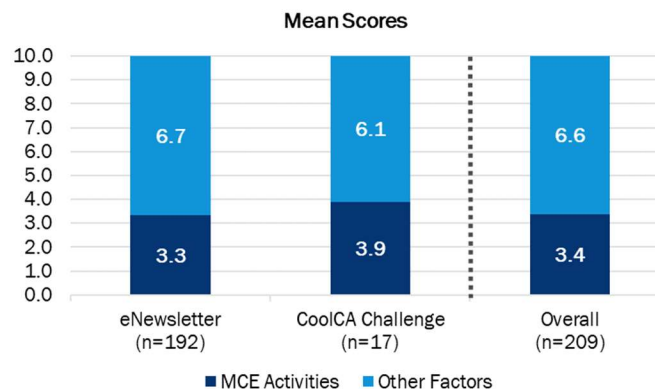
resource programs. The CoolCA Challenge was more of a general campaign to encourage reduced energy usage at the community level and did not market MCE's resource programs.

Figure 14. Influence of MCE eNewsletter and CoolCA Challenge on Energy Saving Behavior



Further, when asked to rank how important MCE eNewsletters or the CoolCA Challenge was in their decision to undertake energy saving actions relative to other influencing factors, on average, respondents indicated that other factors are more important or influential in their decision to take energy saving actions (Figure 15). While this is the case, respondents did say that these non-resource activities did have some influence on their decision to engage in energy saving actions.

Figure 15. Average Influence Scores of MCE and Other Factors on Energy Saving Behavior



Notably, as shown in Table 17, 50% of eNewsletter subscribers and CoolCA Challenge participants overall (n=148) cited that awareness or concern for the environment and/or climate change as the primary factor in their decision to undertake energy saving actions. Energy cost savings also factored into energy saving actions

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*Non-resource activities do have some influence on customers' decisions to install EE equipment and engage in energy saving behaviors but are not the primary driver. Other factors considered important are concern for the environment and energy cost savings.*

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for nearly two-fifths of respondents overall (n=148). Other factors in respondents' decision toward energy saving actions include general knowledge or "common sense" (16%), media influence (15%), public opinion and/or word-of-mouth (15%), and the desire to save energy (14%).

Table 17. Other Factors Influential to Energy Saving Behavior

Influential Factors to Energy Saving Behavior (Multiple Response)	Overall (n=148)	eNewsletter (n=138)	CoolCA Challenge (n=10) <sup>a</sup>
Awareness and/or concern for environment / climate change	50%	49%	70%
Cost savings	39%	39%	30%
General knowledge / common sense	16%	17%	10%
Literature / media / news	15%	16%	0%
Public opinion/word-of-mouth	15%	16%	0%
Desire to save energy	14%	14%	20%
Influenced by utility, energy service provider, or energy efficiency organizations	13%	14%	0%
Sense of responsibility	9%	8%	20%
Desire to lower carbon footprint	6%	6%	10%
Professional knowledge/advice (e.g., architect, contractor, etc.)	6%	7%	0%
Increase comfort	3%	4%	0%
Property is already energy efficient	1%	1%	0%
Other/Miscellaneous	9%	8%	20%

Note: <sup>a</sup> Indicates low sample size

## 7.4 Awareness of Energy Efficiency Programs

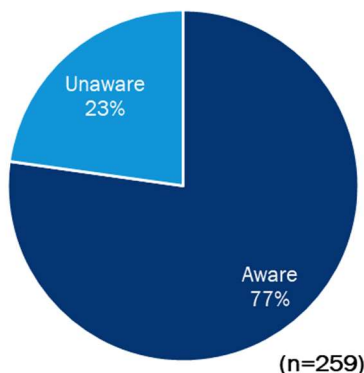
Survey findings suggest that awareness of EE programs or the lack thereof does not factor into non-resource activity participants' decisions to save energy via equipment upgrades or behavior change. When asked whether they were aware of EE programs, 77% of 259 respondents who have reportedly not participated in EE programs indicated that they were aware of EE programs (Figure 16). Respondents who were aware of EE programs but did not participate in such programs attributed their lack of participation on ineligibility for the equipment they installed, the immediate need for equipment, and the hassle of going through the application process for incidental equipment expenses. Some respondents also noted that they have already installed the equipment upgrades offered by EE programs, while other respondents noted that while they are interested in participating in EE programs and/or investing in EE equipment, they are unable to as they are renting their properties and need permission from the owner to make changes to their properties.

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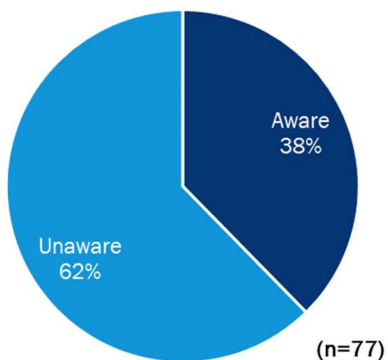
*"If I owned a condo or house, instead of renting an apartment, I would install or upgrade as much as would be feasible. Tax credits, meaningful rebates, and other financial incentives, would greatly encourage everyone to install equipment that would save energy, and would reduce our use of polluting and non-renewable resources."*

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Figure 16. Non-Program Participant Awareness of Energy Efficiency Programs



Respondents who reported receiving rebates or incentives for the EE equipment they installed were asked if they were aware of other EE programs. Of these customers (n=77), 62% of respondents were unaware of other EE programs, while 38% indicated being aware (Figure 17). Notably, when asked what other EE programs respondents were aware of, none of the 229 respondents combined who reported being aware of EE programs could name a specific program. The 176 respondents who provided a response generally noted being aware of either programs offered by PG&E, MCE, BayREN, or appliance recycling, lighting, solar, or ENERGY STAR related programs in general, while 53 respondents declined to respond. While these respondents could not name a specific program, their responses indicate that they are aware of the existence of EE programs which suggests they could seek them out if motivated to do so.

Figure 17. Program Participant Awareness of Other Energy Efficiency Programs

Participants aware of EE programs (n=229) noted that their primary sources of information were either their utility or energy service provider's website, their energy bill, or word-of-mouth.

Table 18. Primary Source of Information for Energy Programs

Primary Information Source on Energy Efficiency Programs	Overall (n=229)	Non-Program Participants (n=200)	Program Participants (n=29)
Energy Provider or Utility Website	24%	24%	28%
Energy Bill	13%	15%	3%
Word-of-Mouth (i.e., Friend, Family, Colleague)	12%	13%	3%



Primary Information Source on Energy Efficiency Programs	Overall (n=229)	Non-Program Participants (n=200)	Program Participants (n=29)
MCE eNewsletter	8%	9%	7%
Workplace	5%	4%	14%
General News Media	3%	4%	3%
Contractor	3%	3%	3%
Energy Groups (Non-Utility)	3%	4%	0%
General Web Search	3%	2%	10%
Social Media (e.g., Facebook, Twitter, Instagram)	3%	3%	0%
Local Government	2%	2%	3%
Education / Workshop / Classes	1%	2%	0%
Other	2%	1%	10%
Don't know	16%	17%	14%

## 7.5 Drivers to Program Participation

Among respondents who have not participated in EE programs, survey findings suggest that they may be more inclined to participate in EE programs depending on the financial benefits, as over half (n=214) reported that either bigger rebates or incentives (36%), a lower energy bill(14%), or low- to no- out-of-pocket costs for installing energy efficient equipment (10%) would encourage them to install EE equipment through their energy service provider or utility company (Table 19). Notably, 8% of respondents who rent their properties indicated that they would participate if they either owned their properties or if there were more program offerings for renters. Under one-tenth noted that their properties are already energy efficient and, as such, there was not more they can do apart from switching to renewable energy sources.

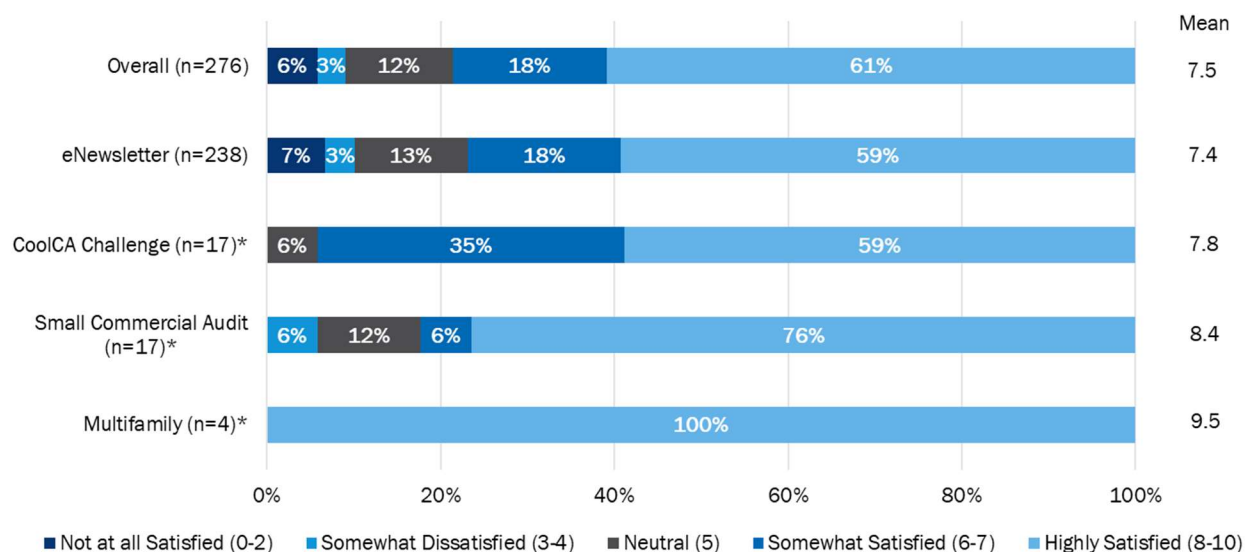
Table 19. Drivers to Participation Among Non-EE Program Participants

Drivers to EE Program Participation (Multiple Response)	Percent (n=214)
Bigger Cashback/Rebates/Incentives	36%
Lower energy bill	14%
Low to no out-of-pocket EE equipment costs	10%
Program for renters or home ownership	8%
More incentives for solar, electric vehicles, or electrification	8%
Awareness/Improved Marketing, Education, and Outreach	7%
Information on cost-effectiveness and efficiency of equipment upgrades	6%
Financing Options/Assistance	6%
Streamlined application process	6%
Detailed program information about incentivized equipment	3%
Proof of environmental impact	2%
Accredited trustworthy contractors	2%
Tax Credit	2%
Other	12%
None/None, property is already energy efficient	7%

## 7.6 Satisfaction on MCE Non-Resource Program Activities

Respondents generally found the information shared by MCE through its various non-resource activities as satisfactory as a majority of respondents reported being “somewhat” to “highly” satisfied with the energy related information they received from either the eNewsletter, Small Commercial energy audit, CoolCA Challenge, or Multifamily communications or technical assessment (Figure 18). Notably, all four multifamily respondents reported being highly satisfied with the information they received through the various multifamily non-resource activities. Similarly, 76% (n=17) of Small Commercial participants who received energy audits reported being highly satisfied with the information they received through the energy audit.

Figure 18. MCE Non-Resource Participant Satisfaction on Information Received



Note: \* Indicates low sample size

*Over 60% of MCE's surveyed non-resource activity participants were highly satisfied with the information they received through the activity in which they participated.*

Respondents satisfied with the information they received from MCE noted that they received actionable and quality information. Other satisfied respondents noted that they felt they could trust MCE and its goal to serve the environment, while still others gave high satisfaction scores due to general satisfaction with MCE. On the other hand, respondents who provided lower satisfaction scores cited that the information they received was not very useful or relevant and that they were not receiving any new or “groundbreaking” information (Table 20).

Table 20. Reasons for Satisfaction Scores

Reasons for Satisfaction Scores on Information Received (Multiple Response)	Percent (n=198)
<b>Reasons for Satisfaction</b>	
Provides good and actionable information	38%

Reasons for Satisfaction Scores on Information Received (Multiple Response)	Percent (n=198)
Perceives MCE as trustworthy organization that serves the environment	5%
Satisfied with MCE in general	5%
Increased awareness regarding EE, energy, and cost savings	4%
Satisfied with non-resource activity	3%
Convenient/Ease of receiving information	2%
Received relevant information in a timely manner	2%
Good outreach program	2%
Satisfied with resource program	1%
<b>Reasons for Dissatisfaction</b>	
Not very useful/relevant	14%
No new information provided	10%
Need more relevant/updated information regarding energy efficient equipment and/or saving energy	5%
Did not receive material/did not receive enough information	4%
Dissatisfied with energy service provider/utility company in general	2%
Lacks information on customer concerns (e.g., energy storage, energy saving tips)	1%
<b>Neutral</b>	
Participant's lack of interest in information material or topics covered	6%
There's always room for improvement	2%
Other	5%

## 7.7 Suggestions for Improvement of Energy Efficiency Related Activities

When asked whether they had any suggestions for improvement for MCE's EE program activities, 148 out of 336 respondents had no suggestions, while 61 were uncertain, and 13 declined to provide suggestions. Those who provided suggestions for MCE's non-resource activities (n=114) noted that MCE should add more outreach channels (15%), particularly local or community-based channels, increase customer engagement (13%), and/or provide more information regarding saving energy (13%), energy efficient equipment (9%), or cost savings (8%) (Table 21). Some respondents suggested that MCE increase the frequency of their non-resource activities, particularly the eNewsletter. These findings suggest that MCE non-resource activity participants are interested in increased engagement with MCE as well as in more in-depth and receiving more in-depth and actionable energy efficiency related information or content. Table 21 lists the variety of suggestions for improvement and shows the interest of the respondents in providing meaningful feedback to MCE.

Table 21. Suggestions for Improvement of MCE Programs/Activities

Suggestions for Improvement (Multiple Response)	Percent (n=114 <sup>a</sup> )
Add more outreach channels (e.g., local/community newspapers activities, energy bill inserts, community events)	15%

Suggestions for Improvement (Multiple Response)	Percent (n=114 <sup>a</sup> )
Increase customer engagement	13%
Provide rebates/financing options	13%
Provide more practical/relevant information regarding saving energy and/or energy efficient equipment	9%
Provide information on cost savings from energy saved regularly	8%
Increase frequency of ME&O activities	7%
Offer incentives or assistance for installation of solar equipment	7%
Expand service territory	6%
Keep up the good work!	6%
Expand electronic vehicle program/offering	4%
Provide program application assistance/support	4%
Increase ME&O regarding Deep Green Program	3%
Provide energy saving options/programs for renters	3%
Provide information on other EE programs	3%
Expand Commercial EE Program	2%
Other/Miscellaneous	16%

Note: <sup>a</sup> Excludes respondents who were uncertain (n=61), declined to respond (n=13), or had no suggestions (n=148).

## 8. Engineering Analysis Results

Table 22 presents the electric and natural gas 1<sup>st</sup> year savings by MCE non-resource activity in order of magnitude of 1<sup>st</sup> year gross electric savings. The gross savings from the installation of EE equipment that occurred after residents and businesses interacted with MCE through a non-resource activity are 2,594.0 MWh and are 2,167 therms. The net electric savings are equal to 2,141.4 MWh and net therm savings are -3,656 therms.

Table 22. Overall Electric and Natural Gas First-Year Savings by MCE Non-Resource Activity

Non-Resource Activity	1 <sup>st</sup> Year Gross Electric Savings (kWh)	1 <sup>st</sup> Year Net Electric Savings (kWh)	1 <sup>st</sup> Year Gross Gas Savings (Therms)	1 <sup>st</sup> Year Net Gas Savings (Therms)
Small Commercial Audits	1,148,401	1,035,496	(2,803)	(2,543)
CoolCA Challenge	805,923	700,878	(1,155)	(1,720)
Multifamily Technical Assistance	187,432	162,481	(997)	(1,341)
MCE eNewsletters	452,248	242,537	7,122	1,948
<b>Total</b>	<b>2,594,003</b>	<b>2,141,392</b>	<b>2,167</b>	<b>(3,656)</b>

Table 23 presents the 1<sup>st</sup> year gross and net savings from the installation of rebated EE equipment and non-rebated EE equipment installed by MCE non-resource activity participants. This disaggregation of rebated versus non-rebated equipment is based on whether customers reported to have received a rebate from one of the California PAs. While a majority of the 2,141.4 MWh overall net savings came from the installation of EE equipment through PA resource programs, just over one-third of the electric savings (792.7 MWh) came from the installation of EE equipment outside of PA resource programs. Interestingly, the net therm savings coming from non-rebated EE equipment (367 therms) are positive while the overall net therms from all EE equipment installed after customers interacted with MCE's non-resource activities is negative (-3,656 therms).

Table 23. Rebated and Non-Rebated Electric and Natural Gas First-Year Savings by MCE Non-Resource Activity

Non-Resource Activity	1 <sup>st</sup> Year Gross Electric Savings (kWh)	1 <sup>st</sup> Year Net Electric Savings (kWh)	1 <sup>st</sup> Year Gross Gas Savings (Therms)	1 <sup>st</sup> Year Net Gas Savings (Therms)
<b>Rebated Measures</b>				
Small Commercial Audits	1,123,088	1,016,418	(2,712)	(2,464)
Multifamily Technical Assistance	183,391	160,193	(2,225)	(2,035)
MCE eNewsletters	260,675	141,034	1,874	518
CoolCA Challenge	44,373	31,067	77	(41)
<b>Rebated Measures Total</b>	<b>1,611,527</b>	<b>1,348,712</b>	<b>(2,985)</b>	<b>(4,023)</b>
<b>Non-Rebated Measures</b>				
CoolCA Challenge	761,550	669,811	(1,232)	(1,679)
MCE eNewsletters	191,573	101,503	5,248	1,430
Small Commercial Audits	25,314	19,078	(91)	(79)
Multifamily Technical Assistance	4,040	2,287	1,228	694
<b>Non-Rebated Measures Total</b>	<b>982,476</b>	<b>792,680</b>	<b>5,152</b>	<b>367</b>

## 9. Attribution Analysis Results

This section presents average attribution ratios for the non-resource activities offered by MCE and selected for in-depth examination in this study. It also presents the total 1<sup>st</sup> year gross and net electric and gas savings attributable to each of these non-resource activities, as well as the savings disaggregated by the savings coming from the installation of rebated and non-rebated EE equipment.

### 9.1 Average Attribution Ratios for Non-Resource Activities

The evaluation team calculated average attribution ratios for each of the non-resource activities we asked participants about in the participant survey. As shown in Table 24, MCE eNewsletters has the lowest average attribution ratio at 0.23 while technical assistance offered via the Multifamily program has the highest attribution rate of 0.46. Audits conducted through the Small Commercial program are also quite high with a ratio of 0.45. Since technical assistance and audits are activities tied directly to two of MCE's resource programs, it is not surprising that their attribution ratios are higher than those associated with non-resource activities that are more general in nature, such as eNewsletters and the CoolCA Challenge.

Table 24. Average Attribution Ratios for MCE Non-Resource Activities

Non-Resource Activity	Attribution Ratio
Small Commercial Audits	0.45
Multifamily Technical Assistance	0.46
MCE eNewsletters	0.23
CoolCA Challenge	0.25

The evaluation team chose to provide simple averages for the attribution ratios rather than weighted ratios to generally illustrate the influence of each of the MCE non-resource activities selected for study. In our calculations of savings attributable to each of these non-resource activities presented in the next sub-section, the team relied on customer-level attribution ratios and savings values.

### 9.2 Savings Attributable to Non-Resource Activities

To estimate the electric and gas 1<sup>st</sup> year savings attributable to the non-resource activities, the evaluation team applied customer-level attribution ratios to their 1<sup>st</sup> year savings calculated from the engineering analysis. We then summed the savings for customers who participated in the different non-resource activities to arrive at the electric and gas savings attributable to each of the non-resource activities. The application of customer-level attribution ratios to the savings estimated from the engineering analysis allows us to gain an understanding about how influential the different MCE non-resource activities are on residents and businesses' decisions to install EE equipment.

Table 25 presents the attributable electric and natural gas 1<sup>st</sup> year gross and net savings by MCE non-resource activity in order of magnitude of 1<sup>st</sup> year gross electric savings. Though therm savings are negative, the gross electric savings attributable to MCE's non-resource activities are 827.3 MWh and the net savings are 711.4 MWh.

Table 25. Overall Attributable Electric and Natural Gas First-Year Savings by MCE Non-Resource Activity

Non-Resource Activity	1 <sup>st</sup> Year Gross Electric Savings (kWh)	1 <sup>st</sup> Year Net Electric Savings (kWh)	1 <sup>st</sup> Year Gross Gas Savings (Therms)	1 <sup>st</sup> Year Net Gas Savings (Therms)
Small Commercial Audits	595,861	541,295	(1,138)	(1,033)
Multifamily Technical Assistance	119,134	104,533	(889)	(997)
MCE eNewsletters	77,185	41,271	1,063	299
CoolCA Challenge	35,096	24,269	288	119
<b>Total</b>	<b>827,277</b>	<b>711,368</b>	<b>(675)</b>	<b>(1,612)</b>

Table 26 presents the attributable 1<sup>st</sup> year gross and net savings from rebated EE equipment and non-rebated EE equipment installed by MCE non-resource activity participants. This analysis provides information to the CPUC about the impacts of MCE's activities that do not directly lead to claimed savings. Particularly important are the savings from EE equipment installations that were not carried out through a PA resource program, as these savings would not be accounted for in the California EE portfolio. In this case the net electric savings coming from non-rebated measures are equal to 30.3 MWh, which represents about 4% of the total net electric savings attributable to the non-resource activities examined for this study. Though not a large proportion of the total attributable savings, it is clear that there is some small percentage of electric net savings that are not accounted for in the California EE portfolio.

In the case of therm savings, the attributable net therm savings coming from non-rebated EE equipment (619 therms) are positive while the total net therm savings from all EE equipment installed after customers interacted with MCE's non-resource activities are negative (-1,612 therms).

Table 26. Attributable Electric and Natural Gas First-Year Savings by MCE Non-Resource Activity

Non-Resource Activity	1 <sup>st</sup> Year Gross Electric Savings (kWh)	1 <sup>st</sup> Year Net Electric Savings (kWh)	1 <sup>st</sup> Year Gross Gas Savings (Therms)	1 <sup>st</sup> Year Net Gas Savings (Therms)
<b>Rebated Measures</b>				
Small Commercial Audits	592,989	539,614	(1,134)	(1,030)
Multifamily Technical Assistance	117,525	103,606	(1,461)	(1,333)
MCE eNewsletters	52,791	28,645	506	141
CoolCA Challenge	12,007	9,212	56	(10)
<b>Rebated Measures Total</b>	<b>775,312</b>	<b>681,077</b>	<b>(2,032)</b>	<b>(2,230)</b>
<b>Non-Rebated Measures</b>				
CoolCA Challenge	23,090	15,057	232	129
MCE eNewsletters	24,394	12,626	557	157
Multifamily Technical Assistance	1,609	927	572	335
Small Commercial Audits	2,871	1,681	(4)	(3)
<b>Non-Rebated Measures Total</b>	<b>51,964</b>	<b>30,291</b>	<b>1,357</b>	<b>619</b>

It is important to keep in mind that the net electric and gas savings from the installation of EE equipment outside of PA resource programs are not accounted for in the California EE portfolio, unless they were incidentally incorporated into spillover analyses conducted of the IOU resource programs.



## 10. NMEC Applicability Assessment

While evaluators have used billing data analysis and submetering to estimate the impacts of EE programs, more recently the CPUC has advocated for the use of Normalized Metered Energy Consumption (NMEC) to conduct these impact evaluations when applicable. Part of the scope of this study is to consider whether the evaluation team could use an NMEC approach to quantify the benefits of CCA non-resource activities on the EE portfolio in the future. This section describes the evaluation team's initial assessment of the viability of using NMEC, including a review of NMEC requirements and what tracking data and protocols the evaluation team would require to employ NMEC in this arena successfully. Our research and exploration of these topics draws upon parallel research efforts conducted under the Group B contract in support of the Workforce Education & Training research sector. This evaluation team is preparing a white paper for the CPUC as part of Deliverable 26: WE&T and Installation Improvement Evaluation Study (forthcoming).<sup>25</sup>

As with other methods of impact analysis, NMEC studies compare energy consumption data from before and after an EE intervention. However, unlike billing analysis, NMEC studies draw upon actual energy metering data obtained directly from the customer's meter. The potential applicability of NMEC has in part led the CPUC to call upon PAs to design and implement pay for performance EE programs based upon customers' actual consumption data. PAs and other interested parties are currently defining common ground rules for the application of NMEC methods and in the process of designing or redesigning customer resource programs to accommodate NMEC evaluation. To the best of our knowledge, NMEC has not yet been used to evaluate any PA non-resource activities.

The use of NMEC in California has been shaped by a number of legislative mandates, regulatory rulings, guidance documents, discussions in working groups, and suggested procedures, including Evaluation, Measurement and Verification (EM&V) policies, such as the California Evaluation Protocols<sup>26</sup> and the CPUC's Energy Efficiency Policy Manual.<sup>27</sup> The most recent legislation, signed into law in 2015, includes California Assembly Bill (AB) 802 and Senate Bill (SB) 350, both of which discuss new standards for verifying energy reduction and establish the need to measure energy savings based on consumption data tracked at the meter. In 2015, the CPUC also issued a ruling concerning EE rolling portfolios, policies, programs, evaluation, and related issues pertaining to high opportunity EE projects or programs (HOPPs).

Since 2015, additional rulings, decisions, policies, articles, and whitepapers have addressed NMEC and provide more targeted procedures than the guidance and policies issued before. Three documents that appear relevant include the CPUC Rulebook for Custom Program and Projects Based on NMEC<sup>28</sup>; a document that addresses NMEC requirements and procedures for individual projects (site level) in commercial sector customer facilities<sup>29</sup>; and another document that provides recommendations around population-level approaches.<sup>30</sup> Further, a January 2019 Ruling<sup>31</sup> was issued further acknowledging that NMEC methods could apply to both site-level and population-level analysis. While these are among the most relevant directives

<sup>25</sup> *Assessment of NMEC Methodology for WE&T Evaluations*, White Paper in development to support CPUC Contract Group B: Deliverable 26 Year 1 Study, forthcoming October 2019.

<sup>26</sup> California Energy Efficiency Evaluation Protocols, State of California Public Utilities Commission, April 2006.

<sup>27</sup> CPUC EE Policy Manual, Version 5 (July 2013)

<sup>28</sup> Rulebook for Custom Program and Projects Based on Normalized Metered Energy Consumption (NMEC). Version 1. Release Date: 23-March-2018. Applicable to programs and/or projects proposed after adoption of CPUC adopted Business Plans.

<sup>29</sup> Normalized Metered Energy Consumption Savings Procedures Manual, Version 1.01, ET15SCE1130 Report. Prepared by Emerging Products, Customer Service, Southern California Edison. December 2017.

<sup>30</sup> Normalized Metered Energy Consumption Working Group Recommendations for Population-Level Approaches. Common Spark Consulting. June 20, 2019.

<sup>31</sup> The CPUC issued further guidance on NMEC methods (January 2019) in an Administrative Law Judge's Ruling on Certain Measurement and Verification Issues, Including Third Party Programs.

related to NMEC methodologies, discussions regarding NMEC are still evolving, particularly in the CPUC-organized NMEC working group, and additional ground rules and guidelines may be applicable.

These various rulings and decisions place some practical limits on the uses of NMEC as a tool for measuring energy consumption. Chief among these, particularly from the perspective of assessing the impacts of any non-resource activities, are a reasonable expectation of multiyear savings and the ability to discern clearly detectable impacts at the meter. Evaluators must carefully consider both of these factors when contemplating the idea of using NMEC to assess any savings associated with non-resource activities, which, unlike resource programs, are 1) more likely to be one time or episodic behavioral interventions with a lower probability of driving persistent savings, and 2) are less likely to be clearly associated with a direct action that may produce sizeable enough savings at the meter to be distinguishable from other measures, actions, or exogenous factors. While these are not insurmountable obstacles in the use of NMEC for the assessment of non-resource activities, they do highlight the importance of a program and research design that takes this into account. As such, we feel that it is essential that any effort to apply an NMEC-based evaluation to a set of non-resource activities must do so by incorporating an embedded NMEC evaluation plan within the larger program design and implementation planning at the onset of the program launch rather than as an ad hoc evaluation approach retroactively applied to non-resource activities that have not been undertaken with such an analysis in mind.

With this essential caveat clearly established, we can discuss other program and research design requirements and limitations in the application of an NMEC-based analysis to CCA non-resource activities.

## 10.1 NMEC-Related Program and Research Design Requirements

NMEC studies generally rely on either site-level or population-level approaches. Site level NMEC is an energy savings calculation approach that “describes how to determine site-specific saving” for “individual buildings (not groups of buildings).”<sup>32</sup> This typically refers to analysis of individual projects (or groups of projects) within commercial sector buildings/facilities. Site-level NMEC can apply at the primary meter or submeter level. Population level NMEC is “an energy savings calculation approach in which results are based on energy usage data observed at the meter and aggregated across a portfolio/program/population rather than a modeled engineering forecast or deemed value.” Notably, “population NMEC programs are those in which savings are claimed for an aggregate or portfolio of sites with similar characteristics.”<sup>33</sup> Both of these NMEC study types have requirements associated with them. There are also more general EM&V protocols and procedures that evaluators should consider. These include: length of analysis period; establishing a direct savings link expected magnitude of savings; net impacts (non-resource activity influence); complexities introduced by PV generation, electrical storage, or electric vehicles; self-selection bias; and double counting. Each of these are discussed in more detail below.

### 10.1.1 Length of Analysis Period

The length of the analysis is one of the most important factors to consider when assessing our ability to use NMEC data in the evaluation of the impact of non-resource activities. NMEC savings claims are expected to be based on at least 12 months of post-installation usage data. The baseline period is the 12-month period leading up to the EE intervention or retrofit. The CPUC Rulebook states that the monitoring period shall last a total of 24 months for projects containing behavior, retro-commissioning, operational, maintenance and repair

<sup>32</sup> Normalized Metered Energy Consumption Savings Procedures Manual, Version 1.01, ET15SCE1130 Report. Prepared by Emerging Products, Customer Service, Southern California Edison. December 2017. Page 1.

<sup>33</sup> Normalized Metered Energy Consumption Working Group Recommendations for Population-Level Approaches. Common Spark Consulting. June 20, 2019. Page 2.

measures.<sup>34</sup> With these time frames in mind, and with the amount of time required to incorporate an NMEC approach into a non-resource activity program design and evaluation, it would be not feasible to complete such an evaluation until after the three year window for this evaluation effort.

## 10.1.2 Linking Non-Resource Activities to a Meter

Of almost equal importance is the requirement for a direct savings link. According to California Energy Efficiency Evaluation Protocols, “producing savings directly means that the link between the program activity and savings is clear, straightforward and relatively fast.” Establishing a direct link between an EE intervention and the savings that it generates is a foundational to any EE program that accepts ratepayer funds and it is generally considered a central element in program design and implementation. However, the administration of non-resource activities by their very nature often falls outside of resource program design and implementation. Consequently, such links are more challenging to establish.

To use an NMEC approach to evaluate non-resource activities, CCA program staff and evaluators must first link the training intervention to a meter within the PA’s service territory. For example, to link any potential savings to a workshop or training effort, program implementation staff would need to (1) track individual participants (i.e., the specific people who received the training and not the companies they work for); (2) categorize the type of energy saving activity that the workshop or training is meant to induce; and (3) link that participant to a meter where the CCA or evaluators may eventually be able to pull data.

From a data tracking perspective, this requires CCA staff to track the types of energy-saving actions that individual workshops or trainings attempt to induce and develop a process and infrastructure for capturing trainee information (including the type of position, company, and tasks the trainee performs in their work) as well as account information for the customer site where the energy savings actions occurred.

Linking other types of non-resource activities, such as marketing and outreach, to customer meters would require the collection of similar data, which may or may not be practical or feasible in other settings such as fairs, meetings, webinars, and other public events. Furthermore, establishing a connection between exposure to a non-resource activity and a physical address with a customer meter, is still only the first step in establishing a link to actual energy savings as a result of that non-resource activity.

## 10.1.3 Expected Magnitude of Savings

The 2015 CPUC ruling on HOPPs states that projects should maintain a minimum threshold of expected savings for normalized metered energy consumption projects at 10% of annual consumption.<sup>35</sup> The CPUC Rulebook further states that “programs targeting savings that comprise less than 10% of annual consumption must provide a rationale and explanation in the Implementation Plan of how savings will be distinguishable from normal variations in consumption.”<sup>36</sup> Because non-resource activities by their nature are more loosely associated with claimable energy savings than traditional resource activities, they are also less likely to generate 10% annual energy savings as a direct result of the non-resource intervention. While the 10% target savings threshold is not a firm limit, prior to any evaluation by the Opinion Dynamics evaluation team, CCAs

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<sup>34</sup> Rulebook for Custom Program and Projects Based on Normalized Metered Energy Consumption (NMEC). Version 1. Release Date: 23-March-2018. Applicable to programs and/or projects proposed after adoption of CPUC adopted Business Plans. Page 13.

<sup>35</sup> Assigned Commissioner and Administrative Law Judge’s Ruling Regarding High Opportunity Energy Efficiency Programs or Projects (12/30/2015), Attachment A, page 6.

<sup>36</sup> Rulebook for Custom Program and Projects Based on Normalized Metered Energy Consumption (NMEC). Version 1. Release Date: 23-March-2018. Applicable to programs and/or projects proposed after adoption of CPUC adopted Business Plans. Page 9.

would need to provide an appropriate rationale including an explanation of how their program planned to detect smaller levels of savings.

#### **10.1.4 Persistence of Savings**

While evaluators can establish persistence of savings for physical equipment based on the measure's effective useful life, any savings claims associated with behavioral changes must be determined through an impact analysis, which under California rules are generally limited to one or two years of savings persistence. Any effort to evaluate potential energy savings associated with non-resource activities, using NMEC or not, will necessarily require a research design to establish persistence. Codes and standards activities may prove to be the most appropriate type of non-resource program type in this regard.

#### **10.1.5 Net Impacts (Influence of Non-Resource Activity)**

California EM&V requirements stipulate that net impact evaluations must meet minimum levels of rigor, such as collecting primary data to calculate 300 site-level net-to-gross ratios (NTGRs) and an assessment of the portion of the participating population that would have adopted the energy conservation measure (ECM) in the absence of the program. A "basic" level of rigor for net impact evaluations includes the use of participant self-reports (i.e., surveys of program participants). Similar standards would reasonably apply to an assessment of any impact non-resource activities, including those using an NMEC-based approach. As such, CCA non-resource efforts and any accompanying research design would necessarily need to take this into account.

#### **10.1.6 Complexities introduced by the presence of PV generation, electrical storage, or electric vehicles**

As with all energy consumption studies, NMEC analysis is intended to ascertain ultimate energy savings at the customer's meter. Any factors that can influence this consumption, including PV generation, storage, and the presence of electric vehicles complicates all forms (i.e., both site- and population-level) analysis. Given the growing adoption of solar panels, battery storage and electric vehicles, any research design must be able to identify and eliminate these factors from the meter data. This factor again demonstrates the importance of embedding any NMEC-based research efforts within the CCA's program design and implementation from the beginning.

#### **10.1.7 Self-Selection Bias**

California EM&V evaluation efforts have long recognized the importance of addressing self-selection bias, which exists in any voluntary program. In the realm of EE this means customers taking actions to change their energy consumption may naturally be doing so in ways that are different from those who are not interested. This is particularly relevant for any customers who self-select into a non-resource activity. While this is true for any type of evaluation effort of non-resource activities, it applies to an NMEC-based analysis as well.

#### **10.1.8 Double Counting**

Lastly, as with any effort to establish energy savings, using NMEC data to determine non-resource activity savings must be done in a manner that ensures those savings have not been counted elsewhere. For example, if the installation of a measure has been claimed by one PA program, an effort to determine the impact of a non-resource activity such as workforce education and training would need to tease out and separate the effect of the training from any savings associated with the measure installation.

## 10.2 NMEC-Related Data Collection

CCAs already have a means of managing and sharing meter consumption data. To support an NMEC study, CCA staff would need to develop a reliable and accurate process for collecting the supporting data. Resource programs that use an NMEC or other consumption-based approach for evaluating program impacts have an existing process and set of tools for collecting description data to compliment consumption data. The CCAs would need to apply these processes to non-resource efforts as well. As such, CCA staff would need to gather information about household characteristics, appliance information, and other details to help facilitate a model specification that can estimate savings for a specific non-resource intervention. Table 27 presents salient data fields that evaluators would require to appropriately use the NMEC approach to examine the impacts of non-resource activities.

Table 27. Customer Data Needed to Support NMEC Study

Data Type	Description
Intervention Information	Description of the non-resource activity, including type, date, location, intended audience, purpose, content, etc.
Participant information	Name, contact information, capacity (private individual or employee), role (in company), primary energy related activities, etc.
Account information	Account number, site address, and other information used to identify the customer.
Program participation	Information about other PA programs they may have enrolled in in the past.
Building characteristics	Basic information about the site (e.g., fuel type, building type, heating/cooling equipment, etc.).
Other energy-related details	Other changes that the customer may have made to their home that would affect their energy-usage.
Non-routine events (for site-level NMEC Study only)	Information about various "non-routine events" that may have contributed to anomalous swings in energy consumption during the evaluation period.

## 10.3 NMEC Applicability Assessment Conclusions

The use of NMEC holds considerable promise for the evaluation of energy saving activities in California, and many PAs are on track to incorporate NMEC into their resource program designs. However, as is the case with the evaluation of non-resource activities in general, the ability to utilize an NMEC-based approach to ascertain savings for non-resource activities lags considerably behind. At this point, we feel the most appropriate approach may be to observe developments in the use of NMEC in the evaluation of resource programs and withhold any attempts to do so for non-resource activities until such time as CCAs have developed program designs that are clearly intended for its use.



## 11. Findings and Recommendations

In this section, the evaluation team provides findings and recommendations that came out of the research and evaluation activities conducted to support the Year 1 Assessment of California CCAs Study conducted on behalf of the CPUC. Note that not all findings have an associated recommendation.

**Finding #1:** Based on the evaluability assessment of MCE's non-resource activity data associated with Multifamily technical assessments, Small Commercial audits, the CoolCA Challenge, and eNewsletters, the evaluation team found the data to be mostly complete and of sufficient quality to carry out the evaluation tasks for this study. The team was able to quantify the benefits of these non-resource activities to some extent. However, the quality of CCA's non-resource tracking data is often inconsistent and datasets do not have a standardized set of fields they track.

**Recommendation:** The evaluation team recognizes that the very nature of certain non-resource activities is not conducive to standardized data collection (e.g., marketing and outreach campaigns). However, for those activities where CCAs can gather detailed participant information (such as during audits, technical assistance visits, workshops, and when making referrals to other programs), the CCAs should do so. Information that would improve the evaluability of non-resource activities includes tracking customer name, email address, service address, dates of participation in the non-resource activity, and all associated customer IDs used by the PAs, as these would facilitate customer identification and the matching of data in the CPUC program database. As data quality and completeness improve, evaluators can more fully capture the attributable energy savings from non-resource activities. Analyses of this sort go far to demonstrate the benefits of non-resource activities, particularly those offered by PAs with a more local or community focus, such as CCAs and Regional Energy Networks.

**Finding #2:** The channeling analysis shows that 4% of MCE's non-resource participants went on to participate in a PA resource program, by identifying matches in the CPUC program database. This is likely a drastic underestimate because the non-resource activity datasets used in the analysis contained several incomplete records, thereby making it difficult to identify customers who subsequently installed EE equipment through MCE's or another PA's resource program.

**Recommendation:** If the CCAs and the CPUC are interested in a more comprehensive accounting of the impacts of non-resource activities on the CA EE portfolio, the evaluation team recommends the PAs use a standardized method and format for recording non-resource activity participant data, for at least those activities where data can easily be tracked. For example, when residents and businesses receive energy assessments, attend presentations and workshops, and referrals to resource programs, the PAs should capture contact names, business names, email addresses, phone numbers, and mailing addresses, along with customer IDs in a standardized format. The CPUC program database requires the PAs to provide their program data in a standardized format and we recommend that this same format, when possible, is applied to the tracking of non-resource activity participants.

**Finding #3:** Approximately half of the survey respondents (or 167 of 336 respondents) indicated completing at least one EE equipment upgrade in their home or business facility (either through a PA resource program or on their own) since interacting with MCE through a non-resource activity. Based on this information, there are likely more records in the CPUC program database that could have been linked to participants of MCE's non-resource activities. We anticipate that repeating the channeling analysis using additional information gathered through the survey effort would improve the results.

**Finding #4: About one-third of MCE's surveyed respondents provided suggestions to improve MCE's non-resource activities.** These include adding more outreach channels (15%), particularly those that are local or community-based, increasing customer engagement (13%), and/or providing more information regarding saving energy (13%), energy efficient equipment (9%), or cost savings (8%). Some respondents suggested that MCE increase the frequency of their non-resource activities, particularly the eNewsletter.

**Recommendation:** While generally satisfied with MCE's non-resource activities, the surveyed participants provided meaningful feedback about how MCE could improve them. The open-end responses and the time that respondents took to provide the feedback shows their vested interest in MCE and the service it provides. **The evaluation team recommends that MCE consider additional ways to engage with customers through varied outreach channels not previously used.** Online marketing campaigns through social media platforms is an effective way to reach customers. If MCE has not already done so, its staff could consider door-to-door neighborhood canvassing and attendance at outdoor community fairs and markets to increase customer engagement at the local or community-based level. MCE could also consider sending out its eNewsletter more frequently and send bill inserts and print materials to customers in MCE's service territory.

**Finding #5: Non-resource activities do have some influence on customers' decisions to install EE equipment and engage in energy saving behaviors, but they are not the primary driver. Other factors considered important are the concern for the environment and energy cost savings.** Based on the attribution analysis, the average influence of non-resource activities on the decision to install EE equipment ranged from 23% to 46%, depending on the activity. Non-resource activities directly linked to MCE's resource programs, such as technical assistance provided through the Multifamily program and audits provided through the Small Commercial program, are more influential on the decision to install EE equipment upgrades than are more general non-resource activities, such as eNewsletters and the CoolCA Challenge.

**Finding #6: Based on the results of the attribution analysis, the evaluation team found some unclaimed energy savings that are in part attributable to MCE non-resource activities.** Of the 1<sup>st</sup> year net electric savings from installed EE equipment (711.4 MWh) that resulted from the influence of a non-resource activity, approximately 4% resulted from installing EE equipment outside of a PA resource program. Savings from those equipment installations are not accounted for in the CPUC program database since they occur outside of PA resource programs. In the case of natural gas, the 1<sup>st</sup> year net therm savings from EE equipment installations that results from the influence of a non-resource activity are negative, equaling -1,612 therms. However, the net therm savings coming from non-rebated EE equipment (619 therms) are positive, while those coming from EE equipment installed through a PA resource program are negative (-2,230 therms).

From this analysis, it is clear that a sizable number of customers who participate in CCA non-resource activities and go on to complete an EE project may not be reflected in CPUC EE portfolio data either because customers did not apply for rebates or because inadequate data makes it difficult to link non-resource activity-based customer contacts with the resulting projects. While we recognize that the spillover estimated for resource programs is designed to capture the savings that come from customers who installed equipment and did not apply for a rebate, it may not capture the benefits from non-resource activities.

## Conclusion

MCE's wide variety of non-resource activities have a positive impact on the California energy efficiency portfolio, and energy savings arising from these efforts are likely under-counted. While the evaluation detected a small percentage of customers who participate in MCE-sponsored non-resource activities and go on to install energy efficiency upgrades and adopt energy saving behaviors through a channeling analysis, data tracking limitations make it difficult to determine the full extent of the impacts associated with MCE's efforts. In fact, a



survey of non-resource activity participants found approximately half of the respondents went on to install at least one EE equipment upgrade in their home or business. Establishing a consistent set of metrics and data tracking practices for non-resource activities will improve the evaluability of non-resource activities and provide for greater insights into their contributions to the statewide EE portfolio.

## Appendix A. LCE SCDI Program Data Fields

LCE began implementing its Small Commercial Direct Install program in early 2019. The evaluation team submitted our data request prior to the beginning of this program and therefore LCE was unable to provide us data to support an evaluability assessment of the non-resource activity carried out under this program. LCE did provide a list of the program fields they planned to collect from program participants. The evaluation team finds that these fields would support the evaluation activities carried out under this study if they were carried out in the future.

Table 28. LCE SCDI Program Data Fields

Field Name
<b>Scenario 1: Customer Information - Participating</b>
Contractor for the Program
Program
Report Period End Date
Project Number
Service Account Number
Rate Schedule
Business Name
Service Account Name
Service Account Address
Service Account City
Service Account Street
Service Account ZIP
Climate Zone
Building Type
Customer Contact Name
Customer Contact Phone 1
Customer Contact Phone 2
Customer Enrollment Date
Survey/Audit Date
Customer Approval Date
Base Case Measure Code
Base Case Measure Description
Base Case Measure Quantity
Retrofit/Install Measure Code
Retrofit/Install Measure Code
As-Built Measure Quantity
Measure Unit Definition
Project Phase
Project Status
Contractor Project ID

Field Name
Customer Building Type
Client Project ID
Measure Location
Install Quantity
Pre-Inspection Quantity
Pre-Inspection Rejection Reason
Post Inspection Quantity
Post Inspection Rejection Reason
<b>Scenario 2: Customer Information - Interested</b>
Business Name
Service Account Name
Service Account Address
Service Account City
Service Account Street
Service Account ZIP
Customer Contact Name
Customer Contact Phone 1
Customer Contact Phone 2
<b>Scenario 3: Customer Information - Audited but Later Rejected</b>
Contractor for the Program
Program
Report Period End Date
Project Number
Service Account Number
Rate Schedule
Business Name
Service Account Name
Service Account Address
Service Account City
Service Account Street
Service Account ZIP
Climate Zone
Building Type
Customer Contact Name
Customer Contact Phone 1
Customer Contact Phone 2
Customer Enrollment Date
Survey/Audit Date
Customer Approval Date
Base Case Measure Code

Field Name
Base Case Measure Description
Base Case Measure Quantity
Retrofit/Install Measure Code
Retrofit/Install Measure Code
As-Built Measure Quantity
Measure Unit Definition
Project Phase
Project Status
Contractor Project ID
Customer Building Type
Client Project ID
Measure Location

## Appendix B. In-Depth Interview Guide

**CPUC Energy Efficiency  
Program Oversight and Evaluation of the Group B Sectors  
Deliverable 21 - Community Choice Aggregator In-Depth Interview Guide  
March 2019**

### Study Overview

On behalf of the CPUC, the Opinion Dynamics evaluation team is assessing the energy savings benefits derived from non-resource activities offered by MCE and LCE in California with a focus on program years 2016 and 2017. While there are several California CCAs, the CPUC is interested in examining the activities of MCE and LCE as they are the only two approved to offer ratepayer-funded EE programs in California to date.

MCE and LCE offer marketing and outreach, educational workshops, technical assistance, trainings, energy audits, and/or financing options that qualify as non-resource program activities. The evaluation team will use this study to build a foundational understanding of whether those MCE/LCE non-resource activities with the most participation are channeling their customers into ratepayer-funded resource programs offered by PAs and/or encouraging them to take energy-saving actions outside of programs (e.g., individual actions or behavior changes without rebates).

Research questions the evaluation team would like to answer from this study include the following:

- What led MCE/LCE to offer ratepayer-funded energy efficiency programs to its customers?
- Which MCE/LCE non-resource activities engaged with the most customers during 2016 and 2017 program years?
- What non-resource activities have been the most successful in channeling customers into PA EE resource programs and to which programs have customers been channeled, particularly during 2016 and 2017?
- What types of EE actions are being taken outside the PA EE resource programs that are attributable to participation in a CCA non-resource activity?
- Since the end of 2017, in what additional non-resource activities has MCE/LCE engaged? Have there been changes to the resource and non-resource offerings?

### Fielding Strategy

The evaluation team plans to conduct one-on-one interviews with senior management, program management, and marketing and outreach staff members of MCE and LCE as we do not expect any individual interviewee to have responses to all the questions in this interview guide. We plan to set up interviews with the contacts provided by the MCE and LCE in their responses to our data requests. This interview guide is comprehensive, and the team's plan is to use this document to create unique guides for each planned interview. The questions below are not designed to be read verbatim. Instead, the interviewer will follow the conversational flow of the interview and cover topics as discussed.

## In-Depth Interview Guide

Interviewee: \_\_\_\_\_

Title and Organization: \_\_\_\_\_

Date and Time of Interview: \_\_\_\_\_

Interviewer: \_\_\_\_\_

### Introduction

*Ask permission record and transcribe this conversation.*

Thank you again for taking the time to speak with us today. We recognize that your organization engages in multiple activities and that you may have information about some of the topics below. We would appreciate it if you could respond with what you know and direct us to the most appropriate staff member of your organization to provide us answers to the questions for which you do not have answers. For today's interview, we'd like to focus on the following topics:

- Your role in the organization and your responsibilities (*Question for all interviewees*)
- MCE's/LCE's decision to offer ratepayer-funded EE programs (*Questions for CCA Senior Management*)
- The program design and implementation of MCE's/LCE's programs (*Questions for CCA Program Managers*)
  - Overall program description and implementation
  - Resource and non-resource activities of programs
  - Marketing and outreach
  - Program performance – metrics and benchmarks
  - Interactions/Overlap with IOUs
- Information/Review of Program Theory and Logic Models (*Questions for CCA Program Managers*)
  - Inputs or resources used to offer MCE's/LCE's programs (e.g., FTEs, budget, etc.)
  - The activities carried out by MCE's/LCE's programs
  - The short-term outputs (e.g. referrals, assessments, recommendations) and intended medium-to-long-term outcomes of MCE's/LCE's programs (e.g., participation in EE resource programs, energy savings)

### Roles and Responsibilities (Questions for All Interviewees)

Our first set of questions are regarding program staff roles and responsibilities.

1. What is your role and title within MCE/LCE?

2. How long have you been in this position?
3. How long have you worked at MCE/LCE?
4. Can you tell us how your role at MCE/LCE has changed since you first started there?

#### Decision to Offer Ratepayer Funded Programs (Questions for CCA Senior Management)

We'd next like to learn about your CCA's decision to offer ratepayer funded programs.

5. Why did your CCA decide to offer ratepayer funded EE programs? Was the decision based on a perceived gap in the market? Was it to provide a wider variety of programs for your customers?
6. What are the pros and cons to offering ratepayer funded programs?
7. What was the process your organization went through to get approval? How long did this process take? Were there any major challenges your organization found in gaining approval?
8. What were the most significant barriers your organization had to overcome to gain approval? How were these barriers overcome?
9. What would your CCA do differently if its staff were to go through this process again?
10. What recommendations would you have for other CCAs who are thinking of following this path?

#### Program Design and Implementation Processes (Questions for CCA Program Managers)

Our next questions will help us understand the current and past non-resource offerings (particularly those from 2016 and 2017) available to customers within their boundaries and whether and how they are used to direct customers toward EE programs that they or other PAs offer. We would also like to understand if the non-resource activities encourage EE actions and behavioral changes outside of PA EE resource programs. **[IF NEEDED: Non-resource activities are program activities that do not directly claim energy savings but provide customers with education, training, and services that may encourage or channel customers toward EE actions and programs.]**

11. Can you please describe the design of the <PROGRAM NAME> program you manage as it operated in 2016 and 2017, particularly the non-resource elements of the programs? Please take us step by step through the implementation of the program and who is involved in its execution. **[PROBE FOR DETAILS REGARDING PROGRAM PARTICIPATION PROCESS, CUSTOMER ELIGIBILITY REQUIREMENTS, IMPLEMENTATION PARTNERS, INCENTIVES, PERFORMANCE/DATA TRACKING, ETC.]**

*MCE offers four programs:*

- Multifamily
- Single-Family



- *Small Commercial*
- *Financing*

*LCE offers two programs:*

- *Energy Advisor (began in late 2018)*
- *Small Commercial Direct Install (planning to begin in 2019)*

12. Why does MCE/LCE offer the <PROGRAM NAME> program? Was the decision based on a perceived gap in the market? Was it to provide a wider variety of programs for your customers?
13. Are there different budgets associated with the resource and non-resource activities components of the <PROGRAM NAME> program? Is there a separate funding bucket for any of the non-resource activities (for example, ME&O) carried out for the <PROGRAM NAME> program?
14. If so, what was the allocation and total funding for the program in 2016 and 2017? How has it changed now?
15. What resource and non-resource activities occurred under the <PROGRAM NAME> program in 2016 and 2017?
16. Can you tell us if the program operates differently now than it did during 2016 and 2017? If so, what are the differences?
17. Can you supply the PIPs for the <PROGRAM NAME> program for program years 2016 – 2018? Did implementation of the program in 2016/2017 go as intended or were there deviations from the PIP?
18. *(For MCE Senior Management):* We would like to understand the impacts of the single point of contact (SPOC) proposal that was approved in D.1805-041. As we understand it, the SPOC role is designed to make the “customer experience of participating in an energy efficiency program user-friendly and seamless.”
19. From your point of view, what is the value added by your organization’s offering of the <PROGRAM NAME> program rather than an IOU or a REN? How do your programs differ from the analogous program offered by the IOU that has an overlapping service territory to your organization’s?

#### **Marketing and Outreach (Questions for Program Managers/Marketing and Outreach Staff)**

20. What activities does your program staff engage in to market the <PROGRAM NAME>?
21. Can you briefly describe these activities and how they were carried out in 2016/2017? **[PROBE FOR M&O PARTNERS SUCH AS LOCAL BUSINESS GROUPS, CONTRACTORS, OTHER ORGANIZATIONS, CPUC STATEWIDE MARKETING, ETC.]**

- a. What key messages do your marketing and outreach activities try to convey to your customers?
  - b. What actions, if any, do these activities encourage customers to take?
22. Based on your experience/involvement in marketing and outreach activities, which of these activities have been most effective in engaging customers, if not channeling them toward taking steps toward energy efficiency? Can you rank these activities by effectiveness?
23. What informational and educational materials are offered by the <PROGRAM NAME> program? Can you provide examples of marketing brochures and educational materials to us?

#### **Program Performance (Questions for MCE Program Managers only)**

Next, we'd like to talk about the program goals and overall program performance, as summarized through various metrics.

24. We have the energy savings goals and accomplishments reported in the 2016 and 2017 annual reports. Did you have any goals related to your non-resource activities for <PROGRAM NAME> program for the same period, such as number of referrals, number of audits/technical assistance engagements, number of education and outreach events, conversion rates, etc.?
25. How did the <PROGRAM NAME> program perform in 2018? What were the resource and non-resource activity goals and accomplishments for this year? Can you provide documentation to show this?
26. What are the <PROGRAM NAME> program goals for 2019? Are there any goals associated with the <PROGRAM NAME> program non-resource activities for this year?

#### **Program Performance (Questions for LCE Program Managers only)**

Next, we'd like to talk about the program goals and overall program performance, as summarized through various metrics.

27. Did you have any 2018 goals related to your non-resource activities for <PROGRAM NAME> program, such as number of referrals, number of audits/technical assistance engagements, number of education and outreach events, conversion rates, etc.?
28. How did the <PROGRAM NAME> program perform in 2018? What were the resource and non-resource activity goals and accomplishments for this year? Can you provide documentation to show this?
29. What are the <PROGRAM NAME> program goals for 2019? Are there any goals associated with the <PROGRAM NAME> program non-resource activities for this year?

#### **Program Theory and Logic Models (Questions for CCA Program Managers)**

30. Part of our research activities includes revising existing Program Theory and Logic Models for non-resources activities offered by MCE and LCE. If they do not exist, the evaluation team plans on developing these models for selected non-resource activities. To aid this process could you please describe the following for <PROGRAM NAME>:

- What are the resources/inputs used to offer the program (i.e., budgets, staff, etc.)? Which are dedicated to non-resource activities?
- What activities occur to offer the program (i.e., what are the activities that occur to implement the program)? Which are resource activities, and which are non-resource activities?
- Who are the target customers of the program?
- What are the main outputs (i.e. key program activities) of the program and how are they tracked? Are they compared to any established benchmarks?
- What are the short- and long-term outcomes of the program? **[PROBE FOR DESIRED OR INTENDED OUTCOME FOR EACH KEY PROGRAM ACTIVITY, INCLUDING SPECIFIC KPIs FOR EACH MAIN ACTIVITY]**

31. What key performance indicators are used to identify program success?

### Closing

32. Do you have any suggestions or final comments on what the evaluation of the non-resource activities of your organization should cover this year or in future years?

These were all the questions I have for now. Thanks again for taking the time to speak with us. We are currently conducting interviews with other CCA staff to learn about the various non-resource activities in which these CCAs are engaged. If we have follow-up questions based on the additional information we learn, is it okay for us to follow up with you by email?

Thank you.

## Appendix C. Survey Instrument

**CPUC Energy Efficiency  
Program Oversight and Evaluation of the Group B Sectors  
Deliverable 21 – MCE Non-Resource Activity Participant Survey  
September 2019**

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### Overview

On behalf of the CPUC the Opinion Dynamics evaluation team is assessing the energy savings benefits derived from non-resource activities offered by MCE and LCE with a focus on program years 2016 and 2017. While there are several California Community Choice Aggregators CCAs, the CPUC is interested in examining the activities of MCE and LCE as they are the only two approved to offer ratepayer-funded EE programs in California to date. This survey is designed to gather data from MCE customers, specifically because it was the only CCA that operated ratepayer-funded EE resource programs during the study time frame.<sup>37</sup>

Since 2010, MCE has offered a variety of non-resource activities to their residential and non-residential customers including marketing and outreach, technical assistance, trainings, energy audits, and/or referrals to other programs. The evaluation team is using this survey to build a foundational understanding of whether the MCE non-resource activities with the most participation channel their customers into ratepayer-funded EE resource programs offered by PAs and/or encourage them to take energy-saving actions outside of programs (e.g., equipment upgrades or behavior changes without rebates).

Research questions the evaluation team would like to answer through this study include the following:

- What PA EE resource programs did customers participate in after engaging in an MCE non-resource activity, particularly during 2016 and 2017 time frame?<sup>38</sup>
- What EE behavioral changes and actions have customers made outside of EE resource programs since they were engaged in an MCE non-resource activity?
- Do customers plan to participate in PA EE resource programs and take other EE actions in the future after interacting with MCE through its non-resource activities?
- How did customers become aware of EE resource programs and other EE behavior changes in which they participated?
- Did the non-resource activities in which customers' engaged influence their decisions to participate in EE resource programs or other EE actions?
- Are there other factors that influenced customers' decisions to participate in EE resource programs and/or take actions toward EE outside of resource programs?

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<sup>37</sup> LCE began operation as a CCA in the Spring of 2018. Its first California ratepayer-funded program, Energy Advisor (EA), launched in Q3 of 2018. Its Small Business Solutions program launched in Spring of 2019. As of the end of 2018, the EA program had only five participants and therefore, no LCE non-resource activity participants are included in the sample for this survey.

<sup>38</sup> The evaluation team determined participation in EE resource programs via a channeling analysis utilizing CCA program data and the CPUC program database and verified participation through this data collection effort. The survey will also ask customers who were not identified in the CPUC tracking database whether they participated in EE resource programs.

- What challenges, if any, did customers experience in participating in PA EE resource programs?
- Are customers satisfied with the non-resource activities in which they participated? How can MCE improve its non-resource activities?

## Fielding Strategy

The evaluation team will administer surveys with MCE non-resource program participants exclusively and will target a total of 100 completes.<sup>39</sup> The team will administer CAWI to collect data. Based on the type of contact information available, we plan also to use a mail push to web survey strategy when emails are not available.

The evaluation team plans to conduct this survey with (1) non-resource activity participants located in the CPUC program database who participated in EE resource programs after engaging in non-resource activities and (2) non-resource activity participants not located in the CPUC database. Because of the limited tracking data available for MCE's non-resource activities, it is possible that more customers participated in resource programs after exposure to a non-resource activity, but that we simply could not find all records of participation. The survey will ask both sets of customers about EE actions they've taken through resource programs, as well as outside of EE resource programs.

## Sample Composition and Sampling Approach

The sample composition and approach for the survey was determined by the most common non-resource activities in which customers engaged and for which MCE was able to provide customer contact information. An assessment of the non-resource activity data revealed that the most contact information is available for those customers who:

- Received Small Commercial energy audits
- Received MCE eNewsletters
- Participated in the CoolCA Challenge through MCE's My Energy Tool portal<sup>40</sup>
- Received Multifamily technical assistance (TA) and increased communication about MCE's Multifamily program

Table 29 presents the number of customers for whom the evaluation team was able to identify contact information (either email addresses or mailing addresses) across various non-resource activities. The team conducted a channeling analysis to see how many customers we could locate in the CPUC program database (i.e., customers who engaged in a PA resource program after interacting with MCE through a non-resource activity). The number of contacts located in the CPUC program database is presented alongside the number of contacts that were not located.

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<sup>39</sup> When the research sector plan was initially developed, the evaluation team set a target of 200 completes (100 for the EE resource program participant survey and 100 for the EE resource program non-participant survey). Since then, we've combined the two surveys into one effort covering both customer types and are focusing exclusively on MCE customers. For these reasons, we have revised our target number of completes to 100.

<sup>40</sup> The CoolCA Challenge took place from October 2015 to March 2016. MCE provided a list of IDs for customers who signed up for the challenge but did not provide sign up dates. Though the evaluation period is 2016-2017, we opted to include all customers from the list for whom we would acquire email or mailing addresses.

Table 29. Survey Sample Composition

Non-Resource Activities	Email Addresses		Mailing Addresses		Total
	Not found in CPUC tracking data	Found in CPUC tracking data	Not found in CPUC tracking data	Found in CPUC tracking data	
Small Commercial Audits	2	0	562	145	709
eNewsletters	4,832	27	0	0	4,859
CoolCA Challenge	149	13	1	2	165
eNewsletters/CoolCA Challenge	24	4	0	0	28
Multifamily TA/program communication	47	14	37	3	101
<b>Total</b>	<b>5,054</b>	<b>58</b>	<b>600</b>	<b>150</b>	<b>5,862</b>

## Survey Structure

The following table outlines the structure of the survey, including the key sections, respondents that will receive them and the key desired outcome from those questions. The team designed the survey to balance data needs and respondent burden.

Survey Section	Target Audience	Primary Goal
Participation Verification	All respondents	Verify that people recall engaging with specific non-resource activities
Energy Saving Actions	Respondent groups detailed below	Determine what EE resource programs respondents participated in and/or EE actions were taken after exposure to non-resource activities
<i>Small Business Energy Audit</i>	<i>Non-residential respondents who received an energy audit</i>	<i>Assess EE resource program participation/EE actions taken by small businesses after receiving an energy audit</i>
<i>eNewsletters</i>	<i>Respondents who signed up to receive eNewsletters</i>	<i>Assess EE resource program participation/EE actions taken after exposure to MCE's eNewsletters</i>
<i>CoolCA Challenge</i>	<i>Respondents who joined the CoolCA Challenge through online portal</i>	<i>Assess EE resource program participation/EE actions taken after signing up to participate in the CoolCA Challenge through MCE's My Energy Portal</i>
<i>Multifamily technical assistance and communication</i>	<i>Respondents who received TA and/or increased communications about Multifamily programs at multifamily properties</i>	<i>Assess EE resource program participation/EE actions taken by multifamily property owners/managers after receiving technical assistance and/or increased communication from MCE about its Multifamily program</i>
Attribution of Non-Resource Activities on Participation in EE Resource Programs	Respondents who participated in EE resource programs	Assess the degree to which non-resource activity engagement influenced the decision to participate in an EE resource program
Attribution of Non-Resource Activities on EE Actions taken outside of EE Resource Programs	All respondents	Assess the degree to which non-resource activity engagement influenced the decision to carry out EE actions/behavior changes outside of an EE resource program

Survey Section	Target Audience	Primary Goal
Awareness of EE Resource Programs	All respondents	Assess awareness of EE resource programs
Drivers and Barriers to Participation in EE Resource Programs	All respondents	Assess what motivates and poses barriers to customers to participate in EE resource programs
Non-Resource Activity Satisfaction and Improvement	All respondents	Inquire about customer satisfaction with the non-resource activity in which they engaged and whether they have suggestions for improvement
Demographics/Firmographics	All respondents	Gather demographic/firmographic information about non-resource activity customers

## Survey Variables

### Survey Flags in Sample

AUDIT_FL	Denotes non-residential customers who received an energy audit
eNews_FL	Denotes customers who received MCE's electronic newsletter
CoolCA_FL	Denotes customers who signed up to participate in the CoolCA Challenge through MCE's online portal <sup>41</sup>
MFC_FL	Denotes Multifamily customers who received technical assistance and/or communication about the Multifamily program

### Survey Flags Determined by Customer Responses

VAUDIT_FL	Denotes verified participation in an energy audit
VeNews_FL	Denotes verified receipt of MCE's electronic newsletter
VCoolCA_FL	Denotes verified participation in the CoolCA Challenge
VMFC_FL	Denotes verified participation in the Multifamily program
MF_FL	Denotes upgrades to multifamily property
COM_FL	Denotes upgrades to a commercial property
SF_FL	Denotes upgrades to a single-family home
REB_FL	Denotes participant received rebate or incentives for upgrades

### Read-Ins

ADDRESS	Customer address that corresponds with participation (when available)
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Table 30. List of Known EE Programs in which MCE Non-Resource Activity Participants Participated

Program Name	Program ID
Residential Energy Advisor	PGE21001
Small Commercial	MCE02
Plug Load and Appliances	PGE21002
Single-Family	BAYREN01
Residential New Construction	PGE21005
Multi-Family	MCE01

<sup>41</sup> The CoolCA Challenge is a competition between California cities that motivate and reward residents for reducing their carbon footprints and taking action toward energy efficiency.



Program Name	Program ID
Commercial Deemed Incentives	PGE21012
Commercial HVAC	PGE21015
Multi Family	BAYREN02
Energy Upgrade California	PGE21004
Marin County	PGE211013
East Bay	PGE211009
Napa County	PGE211015

## Participant Survey Instrument

### Landing Page

Please enter your Survey Access Code to begin the survey. This is the 6-digit PIN provided with the survey link on the letter you received.

**Survey Access Code:**

### Introduction

On behalf of the California Public Utilities Commission (CPUC), thank you for participating in this survey. Opinion Dynamics is conducting this survey on behalf of the CPUC to gather information about your experience with Marin Clean Energy's (MCE's) energy saving related activities. Rest assured that your responses will remain confidential.

If you have only a short amount of time right now, you may complete part of the survey and come back to it where you left off when you have more time.

Please click CONTINUE below to start the survey.

### Screeners and Participation Verification

- S1. Our records indicate that sometime since 2016, you participated in or received information about saving energy from the following EE program or activity offered by Marin Clean Energy. Is this correct?
- a. **[ASK IF AUDIT\_FL=1]** Small Commercial Program: Small business customers can receive a no-cost energy audit that is designed to provide cost-effective recommendations to improve energy efficiency and reduce energy costs.
    1. Yes
    2. No
    8. Not sure

- b. **[ASK IF eNews\_FL=1]** MCE's Electronic Newsletter: MCE sends out a monthly electronic newsletter to customers who sign up. The publication features stories about sustainable communities, energy efficiency, and its programs that offer rebates for energy saving equipment.
1. Yes
  2. No
  8. Not sure
- c. **[ASK IF CoolCA\_FL=1]** CoolCalifornia (CoolCA Challenge: MCE enabled customers to sign up for this statewide competition to encourage residents to collectively lower their community's carbon footprint (challenge ran from late 2015 to early 2016).
1. Yes
  2. No
  8. Not sure
- d. **[ASK IF MFC\_FL]** Multifamily Program: The MCE Multifamily program offers property owners and managers with technical assistance to improve energy efficiency of tenant units and common areas.
1. Yes
  2. No
  8. Not sure

[IF ANY S1a – S1d = 1, CONTINUE, ELSE IF ALL S1a – S1d = 2 or 8, THANK AND TERMINATE]

[GENERATE VAUDIT\_FL = 1 IF S1a = 1, ELSE VAUDIT\_FL = 0;  
VeNews\_FL = 1 IF S1b = 1, ELSE VeNews\_FL = 0;  
VCoolCA\_FL = 1 IF S1c = 1, ELSE VCoolCA = 0;  
VMFC\_FL = 1 IF S1d = 1, ELSE VMFC\_FL = 0]

**[ASK IF S1b=1]**

- NE0a. To the best of your recollection, what year did you sign up to start receiving eNewsletters from Marin Clean Energy?
1. Before 2016
  2. 2016
  3. 2017
  4. 2018
  8. Not sure

**[ASK IF S1c=1]**

- NE0b. To the best of your recollection, what year did you sign up to participate in the CoolCA Challenge through Marin Clean Energy's "My Energy Tool" online portal? [NOTE TO RESPONDENT: "(MCE's My Energy Tool was a web-based energy assessment tool that MCE used to help homeowners save money, reduce greenhouse gas emissions and increase home comfort.)"]
1. 2015
  2. 2016
  8. Not sure

**[ASK IF <ADDRESS> = NULL]**

AD1. Can you please provide your full street address with city and state? [OPEN END; CHECKBOX FOR PREFER NOT TO ANSWER]

9. Prefer not to answer

[LET OPEN END TO AD1] = <ADDRESS>

### Energy Savings Actions

[DISPLAY SENTENCE BELOW ON SAME PAGE AS EE0]

Next, we would like to learn about any actions you may have taken toward saving energy, either on your own or by participating in energy saving programs.

EE0. Since your interaction with MCE [READ: “through your energy audit” IF VAUDIT\_FL = 1; READ: “through its newsletter” IF VeNews\_FL = 1; READ “through the CoolCA Challenge” IF VCoolCA\_FL = 1; READ: “through the multifamily technical assistance and program communication” IF VMCF\_FL = 1], have you completed any equipment upgrades to your property [READ: “at <ADDRESS>” if ADDRESS <> NULL; LEAVE BLANK IF ADDRESS = NULL] to help save energy?

1. Yes
2. No
8. Not sure

EE2. [READ: “With regard to your property located at <ADDRESS>,” if ADDRESS <> NULL; ELSE READ: “With regard to your property,” IF ADDRESS = NULL], how would you describe the building type? Is it a... (Please select one response option below that best describes your property).

1. Detached single-family home
2. Mobile/manufactured home
3. Attached single-family home (row house)
4. Multifamily apartment/condo (with 1-3 units in building)
5. Multifamily apartment/condo (with 4 units or more in building)
6. Commercial facility

[GENERATE SF\_FL=1 IF EE2=1, 2 or 3;

MF\_FL=1 IF EE2=4 or 5;

COM\_FL=1 IF EE2=6]

### [ASK IF EE2=6]

EE2a. Which of the following best describes your property type?

1. Assisted Living
2. Daycare or Pre-School
3. Elementary School
4. High School
5. College
6. Convenience Store
7. Garage (A parking garage that is open for part of the day such as during business hours)
8. All day parking garage (A parking garage that is open 24 hours a day everyday)
9. Grocery
10. Healthcare Clinic

11. Hospital
12. Manufacturing
13. Lodging (e.g., hotel, motel)
14. Movie Theater
15. Office
16. Religious
17. Restaurant
18. Retail Department Store
19. Retail Strip Mall
20. Warehouse/Distribution
21. Service (e.g., hair salon/barber shop, spa)
00. Something else, please specify [OPEN END]

[UPDATE COM\_FL=0 AND MF\_FL=1 IF EE2a=13]

[ASK IF EE0=1; ELSE SKIP TO BEHAVIORAL SECTION]

EE1. What types of energy saving equipment did you upgrade or install to reduce your property's **energy** usage since 2016? [MULTIPLE RESPONSE, ROTATE RESPONSE OPTIONS 1 THROUGH 11]

1. Lighting equipment or lighting controls
2. Heating, cooling and ventilation equipment or controls
3. ENERGY STAR appliances
4. Building shell equipment including insulation (e.g., new insulation for attic, crawl space, basement, etc.) and air sealing
5. Domestic water heating equipment and controls
6. Energy saving consumer electronics and office equipment
7. [ASK IF COM\_FL=1] ENERGY STAR kitchen and food service equipment
8. [ASK IF COM\_FL=1] Refrigeration equipment and controls
9. [ASK IF COM\_FL=1] Compressed air equipment
10. Pool equipment (e.g., efficient pool pump, pool pump timer, pool cover)
11. Installed solar panels
00. Something else, please specify [OPEN END]
98. Not sure [SKIP TO B1, BEHAVIORAL SECTION]
99. None [SKIP TO B1, BEHAVIORAL SECTION]

[NOTE TO PROGRAMMER: IF RESPONDENT SELECTS MORE THAN 3 EQUIPMENT TYPES IN EE1, LEAST FILL UP TO 3 EQUIPMENT TYPES TO ASK ABOUT IN THE SUCCEEDING QUESTIONS ("LIGHTING" THROUGH "OTHER" SECTIONS BELOW - WE WANT TO LIMIT THE NUMBER OF EQUIPMENT TYPES TO ASK THEM ABOUT BELOW TO A MAXIMUM OF 3)]

[ASK IF EE1 = 1]

LIGHTING

[DISPLAY SENTENCE BELOW ON SAME PAGE AS L1]

Next, we would like to learn more about the energy saving upgrades you have completed at your property.

L1. Which of the following type(s) of **lighting** equipment have you installed or upgraded at your property? Please select all that apply. [MULTIPLE RESPONSE] [RANDOMIZE RESPONSE OPTIONS 2-4]

1. Lighting controls (such as occupancy sensors, timers, photocells, bi-level controls) [ANCHOR]

- 2. CFL bulbs or fixtures
- 3. LED lighting or fixtures
- 4. Linear fluorescent lighting and fixtures
- 00. Something else, please specify [OPEN END] [ANCHOR]
- 98. Not sure [SKIP TO NEXT SECTION] [ANCHOR]

**[ASK IF L1=2]**

L1a. For the CFLs that you installed, which type(s) did you install? Please select all that apply. [MULTIPLE RESPONSE]

- 1. Standard screw-based CFLs
- 2. [ASK IF MF\_FL=1 OR COM\_FL=1] Pin-based CFL fixtures
- 00. Something else, please specify [OPEN END]
- 98. Not sure

**[ASK IF L1=3]**

L1b. For the LEDs that you installed, which type(s) did you install? Please select all that apply. [MULTIPLE RESPONSE]

- 1. Standard screw-based LEDs
- 2. Specialty LEDs (globe, candelabra, reflector)
- 3. [ASK IF SF\_FL=1] LED flood lights
- 4. LED fixtures (canned lighting, track lighting)
- 5. Linear or tube LEDs
- 6. [ASK IF MF\_FL=1 OR COM\_FL=1] Exterior LEDs (wall-pack, flood, canopy, pole mounted, bollards)
- 7. [ASK IF MF\_FL=1 OR COM\_FL=1] LED Exit Signs
- 8. [ASK IF MF\_FL=1 OR COM\_FL=1] LED Open Signs
- 9. [ASK IF COM\_FL=1] High bay LED fixtures
- 00. Something else, please specify [OPEN END]
- 98. Not sure

**[ASK IF L1=4]**

L1c. For the linear fluorescents that you installed, which type(s) did you install? Please select all that apply. [MULTIPLE RESPONSE]

- 1. Linear fluorescent T8 (1" diameter) lamps
- 2. Linear fluorescent T5 (5/8" diameter) lamps
- 3. [ASK IF MF\_FL=1 OR COM\_FL=1] Removed linear fluorescent lamps from existing fixtures (Delamping)
- 00. Something else, please specify [OPEN END]
- 98. Not sure

L2. How many of each lighting type did you install? Your best estimate is fine. [NUMERIC OPEN END 0-999, CHECKBOX FOR NOT SURE]

Lighting Type	Quantity	Not sure
a. [SHOW IF L1a=1] Standard CFLs		<input type="checkbox"/>
b. [SHOW IF L1a=2] Pin-Based CFLs		<input type="checkbox"/>
c. [SHOW IF L1b=1] Standard LEDs		<input type="checkbox"/>
d. [SHOW IF L1b=2] LED Globe		<input type="checkbox"/>
e. [SHOW IF L1b=2] LED Candelabra		<input type="checkbox"/>

Lighting Type	Quantity	Not sure
f. [SHOW IF L1b=2] LED Reflector		<input type="checkbox"/>
g. [SHOW IF L1b=3 OR L1b=6] LED Flood Lights		<input type="checkbox"/>
h. [SHOW IF L1b=4] LED Canned Light Fixtures		<input type="checkbox"/>
i. [SHOW IF L1b=4] LED Track Light Fixtures		<input type="checkbox"/>
j. [SHOW IF L1b=6] LED Wall Pack		<input type="checkbox"/>
k. [SHOW IF L1b=6] LED Canopy		<input type="checkbox"/>
l. [SHOW IF L1b=6] LED Pole Mounted		<input type="checkbox"/>
m. [SHOW IF L1b=6] LED Bollards		<input type="checkbox"/>
n. [SHOW IF L1b=7] LED Exit Signs		<input type="checkbox"/>
o. [SHOW IF L1b=8] LED Open Signs		<input type="checkbox"/>
p. [SHOW IF L1b=9] High Bay LED Fixtures		<input type="checkbox"/>
q. [SHOW IF L1b=5] Linear or tube LED lamps		<input type="checkbox"/>
r. [SHOW IF L1c=1] Linear Fluorescent T8 lamps		<input type="checkbox"/>
s. [SHOW IF L1c=2] Linear Fluorescent T5 lamps		<input type="checkbox"/>
t. [SHOW IF L1c=3] Removed linear fluorescent lamps		<input type="checkbox"/>
u. [SHOW IF ANY L1, L1a, L1b, or L1c=00] [INSERT RESPONSES FROM L1, L1a, L1b, and/or L1c] (If more than one type, please provide quantity for each type of lighting equipment installed) [OPEN END]		<input type="checkbox"/>

L2a. In which areas at your property did you install the lighting equipment? Please select all that apply.  
[SPLIT L2aa – L2au ONTO 2 PAGES IF TOO LONG, EACH L2aa – L2ua IS MULTIPLE RESPONSE]

a. [SHOW IF L1a=1] Standard CFLs

1. [SHOW IF SF\_FL OR COM\_FL=1] Interior
2. [SHOW IF MF\_FL=1] Interior – Common Area
3. [SHOW IF MF\_FL=1] Interior – Apartment Unit
4. Exterior
8. Not Sure

b. [SHOW IF L1a=2] Pin-Based CFLs

1. [SHOW IF SF\_FL OR COM\_FL=1] Interior
2. [SHOW IF MF\_FL=1] Interior – Common Area
3. [SHOW IF MF\_FL=1] Interior – Apartment Unit
4. Exterior
8. Not Sure

c. [SHOW IF L1b=1] Standard LEDs

1. [SHOW IF SF\_FL OR COM\_FL=1] Interior
2. [SHOW IF MF\_FL=1] Interior – Common Area
3. [SHOW IF MF\_FL=1] Interior – Apartment Unit
4. Exterior
8. Not Sure

d. [SHOW IF L1b=2] LED Globe

1. [SHOW IF SF\_FL OR COM\_FL=1] Interior
2. [SHOW IF MF\_FL=1] Interior – Common Area

3. [SHOW IF MF\_FL=1] Interior – Apartment Unit
4. Exterior
8. Not Sure

e. [SHOW IF L1b=2] LED Candelabra

1. [SHOW IF SF\_FL OR COM\_FL=1] Interior
2. [SHOW IF MF\_FL=1] Interior – Common Area
3. [SHOW IF MF\_FL=1] Interior – Apartment Unit
4. Exterior
8. Not Sure

f. [SHOW IF L1b=2] LED Reflector

1. [SHOW IF SF\_FL OR COM\_FL=1] Interior
2. [SHOW IF MF\_FL=1] Interior – Common Area
3. [SHOW IF MF\_FL=1] Interior – Apartment Unit
4. Exterior
8. Not Sure

g. [SHOW IF L1b=3 OR L1b=6] LED Flood Lights

1. [SHOW IF SF\_FL OR COM\_FL=1] Interior
2. [SHOW IF MF\_FL=1] Interior – Common Area
3. [SHOW IF MF\_FL=1] Interior – Apartment Unit
4. Exterior
8. Not Sure

h. [SHOW IF L1b=4] LED Canned Light Fixtures

1. [SHOW IF SF\_FL OR COM\_FL=1] Interior
2. [SHOW IF MF\_FL=1] Interior – Common Area
3. [SHOW IF MF\_FL=1] Interior – Apartment Unit
4. Exterior
8. Not Sure

i. [SHOW IF L1b=4] LED Track Light Fixtures

1. [SHOW IF SF\_FL OR COM\_FL=1] Interior
2. [SHOW IF MF\_FL=1] Interior – Common Area
1. [SHOW IF MF\_FL=1] Interior – Apartment Unit
2. Exterior
8. Not Sure

j. [SHOW IF L1b=6] LED Wall Pack

1. [SHOW IF SF\_FL OR COM\_FL=1] Interior
2. [SHOW IF MF\_FL=1] Interior – Common Area
3. [SHOW IF MF\_FL=1] Interior – Apartment Unit
4. Exterior
8. Not Sure

k. [SHOW IF L1b=6] LED Canopy

1. [SHOW IF SF\_FL OR COM\_FL=1] Interior
2. [SHOW IF MF\_FL=1] Interior – Common Area

3. [SHOW IF MF\_FL=1] Interior – Apartment Unit
4. Exterior
8. Not Sure

l. [SHOW IF L1b=6] LED Pole Mounted

1. [SHOW IF SF\_FL OR COM\_FL=1] Interior
2. [SHOW IF MF\_FL=1] Interior – Common Area
3. [SHOW IF MF\_FL=1] Interior – Apartment Unit
4. Exterior
8. Not Sure

m. [SHOW IF L1b=6] LED Bollards

1. [SHOW IF SF\_FL OR COM\_FL=1] Interior
2. [SHOW IF MF\_FL=1] Interior – Common Area
3. [SHOW IF MF\_FL=1] Interior – Apartment Unit
4. Exterior
8. Not Sure

n. [SHOW IF L1b=7] LED Exit Signs

1. [SHOW IF SF\_FL OR COM\_FL=1] Interior
2. [SHOW IF MF\_FL=1] Interior – Common Area
3. [SHOW IF MF\_FL=1] Interior – Apartment Unit
4. Exterior
8. Not Sure

o. [SHOW IF L1b=8] LED Open Signs

1. [SHOW IF SF\_FL OR COM\_FL=1] Interior
2. [SHOW IF MF\_FL=1] Interior – Common Area
3. [SHOW IF MF\_FL=1] Interior – Apartment Unit
4. Exterior
8. Not Sure

p. [SHOW IF L1b=9] High Bay LED Fixtures

1. [SHOW IF SF\_FL OR COM\_FL=1] Interior
2. [SHOW IF MF\_FL=1] Interior – Common Area
3. [SHOW IF MF\_FL=1] Interior – Apartment Unit
4. Exterior
8. Not Sure

q. [SHOW IF L1b=5] Linear or tube LED lamps

1. [SHOW IF SF\_FL OR COM\_FL=1] Interior
2. [SHOW IF MF\_FL=1] Interior – Common Area
3. [SHOW IF MF\_FL=1] Interior – Apartment Unit
4. Exterior
8. Not Sure

r. [SHOW IF L1c=1] Linear Fluorescent T8 lamps

1. [SHOW IF SF\_FL OR COM\_FL=1] Interior
2. [SHOW IF MF\_FL=1] Interior – Common Area



3. [SHOW IF MF\_FL=1] Interior – Apartment Unit
4. Exterior
8. Not Sure

s. [SHOW IF L1c=2] Linear Fluorescent T5 lamps

1. [SHOW IF SF\_FL OR COM\_FL=1] Interior
2. [SHOW IF MF\_FL=1] Interior – Common Area
3. [SHOW IF MF\_FL=1] Interior – Apartment Unit
4. Exterior
8. Not Sure

t. [SHOW ROW IF L1c=3] Removed linear fluorescent lamps

1. [SHOW IF SF\_FL OR COM\_FL=1] Interior
2. [SHOW IF MF\_FL=1] Interior – Common Area
3. [SHOW IF MF\_FL=1] Interior – Apartment Unit
4. Exterior
8. Not Sure

u. [SHOW IF ANY L1, L1a, L1b, or L1c=00] [INSERT RESPONSES FROM L1=0, L1a=0, L1b=0, and/or L1c=0]

(If more than one type, please provide quantity for each type of lighting equipment installed)

1. [SHOW IF SF\_FL OR COM\_FL=1] Interior
2. [SHOW IF MF\_FL=1] Interior – Common Area
3. [SHOW IF MF\_FL=1] Interior – Apartment Unit
4. Exterior
8. Not Sure

[ASK IF ANY L1=1-4 OR 00]

L3. What were the main types of lighting that you removed and replaced with new lighting? Please select up to three. [MULTIPLE RESPONSE UP TO THREE]

1. Incandescent bulbs
2. Halogen bulbs
3. CFLs bulbs
4. Standard LED bulbs
5. Specialty LED bulbs
6. LED tubes/linear LEDs
7. Linear fluorescent T12 fixtures
8. Linear fluorescent T8 fixtures
9. High-bay metal halide fixtures
00. Something else, please specify [OPEN END]
98. Not sure

[ASK IF L1c=1]

L4. What type of Linear Fluorescent T8 lamps did you install? [MULTIPLE RESPONSE]

1. Standard
2. High Performance
3. Reduced Wattage
00. Something else, please specify [OPEN END]
98. Not sure

**[ASK IF L1=1]**

L5. Please identify the lighting control type installed for each lighting upgrade within your property. **[MULTIPLE RESPONSE, SPLIT L5a – L5t ONTO 2 PAGES IF TOO LONG]**

a. **[SHOW IF L1a=1]** Standard CFLs

1. Occupancy
2. Photocell
3. Timer
4. **[SHOW IF COM\_FL=1]** Bi-Level Switching
5. None
00. If something else, please specify **[OPEN END]**

b. **[SHOW IF L1a=2]** Pin-Based CFLs

1. Occupancy
2. Photocell
3. Timer
4. **[SHOW IF COM\_FL=1]** Bi-Level Switching
5. None
00. If something else, please specify **[OPEN END]**

c. **[SHOW IF L1b=1]** Standard LEDs

1. [Occupancy
2. Photocell
3. Timer
4. **[SHOW IF COM\_FL=1]** Bi-Level Switching
5. None
00. If something else, please specify **[OPEN END]**

d. **[SHOW IF L1b=2]** LED Globe

1. Occupancy
2. Photocell
3. Timer
4. **[SHOW IF COM\_FL=1]** Bi-Level Switching
5. None
00. If something else, please specify **[OPEN END]**

e. **[SHOW IF L1b=2]** LED Candelabra

1. Occupancy
2. Photocell
3. Timer
4. **[SHOW IF COM\_FL=1]** Bi-Level Switching
5. None
00. If something else, please specify **[OPEN END]**

f. **[SHOW IF L1b=2]** LED Reflector

1. Occupancy

2. Photocell
3. Timer
4. **[SHOW IF COM\_FL=1]** Bi-Level Switching
5. None
00. If something else, please specify **[OPEN END]**

**g. [SHOW IF L1b=3 OR L1b=6] LED Flood Lights**

1. Occupancy
2. Photocell
3. Timer
4. **[SHOW IF COM\_FL=1]** Bi-Level Switching
5. None
00. If something else, please specify **[OPEN END]**

**h. [SHOW IF L1b=4] LED Canned Light Fixtures**

1. Occupancy
2. Photocell
3. Timer
4. **[SHOW IF COM\_FL=1]** Bi-Level Switching
5. None
00. If something else, please specify **[OPEN END]**

**i. [SHOW IF L1b=4] LED Track Light Fixtures**

1. Occupancy
2. Photocell
3. Timer
4. **[SHOW IF COM\_FL=1]** Bi-Level Switching
5. None
00. If something else, please specify **[OPEN END]**

**j. [SHOW IF L1b=6] LED Wall Pack**

1. Occupancy
2. Photocell
3. Timer
4. **[SHOW IF COM\_FL=1]** Bi-Level Switching
5. None
00. If something else, please specify **[OPEN END]**

**k. [SHOW IF L1b=6] LED Canopy**

1. Occupancy
2. Photocell
3. Timer
4. **[SHOW IF COM\_FL=1]** Bi-Level Switching
5. None
00. If something else, please specify **[OPEN END]**

**l. [SHOW IF L1b=6] LED Pole Mounted**

1. Occupancy
2. Photocell
3. Timer
4. **[SHOW IF COM\_FL=1] Bi-Level Switching**
5. None
00. If something else, please specify **[OPEN END]**

**m. [SHOW IF L1b=6] LED Bollards**

1. Occupancy
2. Photocell
3. Timer
4. **[SHOW IF COM\_FL=1] Bi-Level Switching**
5. None
0. If something else, please specify **[OPEN END]**

**n. [SHOW IF L1b=7] LED Exit Signs**

1. Occupancy
2. Photocell
3. Timer
4. **[SHOW IF COM\_FL=1] Bi-Level Switching**
5. None
00. If something else, please specify **[OPEN END]**

**o. [SHOW IF L1b=8] LED Open Signs**

1. Occupancy
2. Photocell
3. Timer
4. **[SHOW IF COM\_FL=1] Bi-Level Switching**
5. None
00. If something else, please specify **[OPEN END]**

**p. [SHOW IF L1b=9] High Bay LED Fixtures**

1. Occupancy
2. Photocell
3. Timer
4. **[SHOW IF COM\_FL=1] Bi-Level Switching**
5. None
00. If something else, please specify **[OPEN END]**

**q. [SHOW IF L1b=5] Linear or tube LED lamps**

1. Occupancy
2. Photocell
3. Timer
4. **[SHOW IF COM\_FL=1] Bi-Level Switching**

- 5. None
- 00. If something else, please specify **[OPEN END]**

**r. [SHOW IF L1c=1] Linear Fluorescent T8 lamps**

- 1. Occupancy
- 2. Photocell
- 3. Timer
- 4. **[SHOW IF COM\_FL=1] Bi-Level Switching**
- 5. None
- 00. If something else, please specify **[OPEN END]**

**s. [SHOW IF L1c=2] Linear Fluorescent T5 lamps**

- 1. Occupancy
- 2. Photocell
- 3. Timer
- 4. **[SHOW IF COM\_FL=1] Bi-Level Switching**
- 5. None
- 00. If something else, please specify **[OPEN END]**

**t. [SHOW IF ANY L1, L1a, L1b, or L1c=00] [INSERT RESPONSES FROM L1, L1a, L1b, and/or L1c] (If more than one type, please provide quantity for each type of lighting equipment installed) **[OPEN END]****

- 1. Occupancy
- 2. Photocell
- 3. Timer
- 4. **[SHOW IF COM\_FL=1] Bi-Level Switching**
- 5. None
- 00. If something else, please specify **[OPEN END]**

**[ASK IF ANY L1 = 1 THROUGH 4 OR 00]**

**L6. Did you receive any rebates or incentives for installing any of your energy saving lighting equipment?**

- 1. Yes
- 2. No
- 8. Not sure **[SKIP TO NEXT SECTION]**

**[ASK IF L6=1]**

**L6a. For which energy saving lighting equipment did you receive rebates or incentives? Please select all that apply. **[MULTIPLE RESPONSE]****

- 1. **[SHOW IF L1a=1] Standard CFLs**
- 2. **[SHOW IF L1a=2] Pin-Based CFLs**
- 3. **[SHOW IF L1b=1] Standard LEDs**
- 4. **[SHOW IF L1b=2] LED Globe**
- 5. **[SHOW IF L1b=2] LED Candelabra**
- 6. **[SHOW IF L1b=2] LED Reflector**
- 7. **[SHOW IF L1b=3 OR L1b=6] LED Flood Lights**
- 8. **[SHOW IF L1b=4] LED Canned Light Fixtures**
- 9. **[SHOW IF L1b=4] LED Track Light Fixtures**
- 10. **[SHOW IF L1b=6] LED Wall Pack**
- 11. **[SHOW IF L1b=6] LED Canopy**

12. [SHOW IF L1b=6] LED Pole Mounted
13. [SHOW IF L1b=6] LED Bollards
14. [SHOW IF L1b=7] LED Exit Signs
15. [SHOW IF L1b=8] LED Open Signs
16. [SHOW IF L1b=9] High Bay LED Fixtures
17. [SHOW IF L1b=5] Linear or tube LED lamps
18. [SHOW IF L1c=1] Linear Fluorescent T8 lamps
19. [SHOW IF L1c=2] Linear Fluorescent T5 lamps
21. [SHOW IF L1 = 1] Lighting controls
00. [SHOW IF ANY L1, L1a, L1b, or L1c=00] [INSERT RESPONSE FROM L1=0, L1a=0, L1b=0, and/or L1c=0] (If more than one type, please provide quantity for each type of lighting equipment installed)
20. I received no rebates for the above listed equipment

[ASK IF L6a = 1 to 00]

L6b. Please identify the organization(s) from which you received rebates or incentives? Please select all that apply. [MULTIPLE RESPONSE]

1. Marin Clean Energy
2. Pacific Gas & Electric Company
3. Bay Area Regional Energy Network
0. Another organization, please specify [OPEN END]
8. Not sure

[ASK IF L6=2]

L6c. Please identify the main reason why you did not receive rebates.

1. Equipment did not qualify
2. Was in a hurry to purchase new equipment
3. Too much of a hassle to apply for the rebate
4. Did not know if one existed
0. Something else, please specify [OPEN END]

[ASK SECTION IF EE1 = 2]

HEATING, COOLING AND VENTILATION (HVAC)

H1. Which of the following **heating, cooling, and/or ventilation systems** have you upgraded or installed in your property? Please select all that apply. [MULTIPLE RESPONSE] [RANDOMIZE 1 THROUGH 15]

1. New energy saving heating and cooling equipment
2. Heating and/or cooling system tune-ups
3. [ASK IF SF\_FL=1 OR MF\_FL=1] Programmable or smart thermostat
4. [ASK IF SF\_FL=1 OR MF\_FL=1] Sealed leaks or tears in existing duct work
5. [ASK IF SF\_FL=1 OR MF\_FL=1] Insulated existing duct work
6. [ASK IF SF\_FL=1 OR MF\_FL=1] Replace dirty air filters regularly (at least every 3-6 months)
7. [ASK IF SF\_FL=1 OR MF\_FL=1] ENERGY STAR ceiling fan(s)
8. [ASK IF SF\_FL=1 OR MF\_FL=1] ENERGY STAR ventilation or exhaust bathroom fan(s)
9. [ASK IF SF\_FL=1] Attic fan
10. [ASK IF SF\_FL=1] Whole house fan
11. [ASK IF COM\_FL=1] Made changes to chillers or chilled water system(s)
12. [ASK IF COM\_FL=1] Made changes to boilers or steam water system(s)
13. [ASK IF COM\_FL=1] Made changes air distribution equipment and ventilation controls
14. [ASK IF COM\_FL=1] Made changes to HVAC operating schedules

- 15. Variable speed fan or blower motors
- 00. Something else, please specify [OPEN END] [ANCHOR]
- 98. Not sure [SKIP TO NEXT SECTION] [ANCHOR]
- 16. None [SKIP TO NEXT SECTION] [ANCHOR]

[ASK IF H1=1 or H1=0]

H2. What type of energy saving **heating and/or cooling equipment** did you install or upgrade? [MULTIPLE RESPONSE]

- 1. Central Air Conditioner
- 2. Air Source Heat Pump
- 3. Mini-Split (Ductless) Heat Pump
- 4. [ASK IF SF\_FL=1 OR MF\_FL=1] ENERGY STAR Window Air Conditioner
- 5. [ASK IF COM\_FL=1] ENERGY STAR Room Air Conditioners
- 6. Ground Source Heat Pump
- 7. Boiler
- 8. Furnace
- 9. [ASK IF SF\_FL=1 OR MF\_FL=1] Electric heater/Portable heater
- 10. [ASK IF SF\_FL=1 OR MF\_FL=1] Baseboard heating
- 11. [ASK IF COM\_FL=1] Infrared Heater
- 12. [ASK IF COM\_FL=1] Gas-Fired Condensing Unit Heater
- 13. [ASK IF MF\_FL=1 OR COM\_FL=1] Packaged Terminal Air Conditioner (PTAC)
- 14. [ASK IF MF\_FL=1 OR COM\_FL=1] Packaged Terminal Heat Pump (PTHP)
- 15. [ASK IF MF\_FL=1 OR COM\_FL=1] Chiller
- 16. [ASK IF MF\_FL=1 OR COM\_FL=1] Cooling Tower
- 17. [ASK IF COM\_FL=1] Variable Air Volume (VAV) box
- 00. Something else, please specify [OPEN END]
- 98. Not sure [SKIP TO NEXT QUESTION]

[ASK IF H2 = 1 TO 00]

H2a. How many of each type of **heating and/or cooling equipment** did you install or upgrade? [MULTIPLE RESPONSE] [NUMERIC OPEN END 0 – 99, CHECKBOX FOR NOT SURE FOR EACH ROW]

Heating and/or Cooling Equipment	Quantity	Not sure
a. [SHOW IF H2 = 1] Central Air Conditioner		<input type="checkbox"/>
b. [SHOW IF H2 = 2] Air Source Heat Pump		<input type="checkbox"/>
c. [SHOW IF H2 = 3] Mini-Split (Ductless) Heat Pump		<input type="checkbox"/>
d. [SHOW IF H2 = 4] ENERGY STAR Window Air Conditioner		<input type="checkbox"/>
e. [SHOW IF H2 = 5] ENERGY STAR Room Air Conditioners		<input type="checkbox"/>
f. [SHOW IF H2 = 6] Ground Source Heat Pump		<input type="checkbox"/>
g. [SHOW IF H2 = 7] Boiler		<input type="checkbox"/>
h. [SHOW IF H2 = 8] Furnace		<input type="checkbox"/>
i. [SHOW IF H2 = 9] Electric heater/Portable heater		<input type="checkbox"/>
j. [SHOW IF H2 = 10] Baseboard heating		<input type="checkbox"/>
k. [SHOW IF H2 = 11] Infrared Heater		<input type="checkbox"/>
l. [SHOW IF H2 = 12] Gas-Fired Condensing Unit Heater		<input type="checkbox"/>



Heating and/or Cooling Equipment	Quantity	Not sure
m. [SHOW IF H2 = 13] Packaged Terminal Air Conditioner (PTAC)		<input type="checkbox"/>
n. [SHOW IF H2 = 14] Packaged Terminal Heat Pump (PTHP)		<input type="checkbox"/>
o. [SHOW IF H2 = 15] Chiller		<input type="checkbox"/>
p. [SHOW IF H2 = 16] Cooling Tower		<input type="checkbox"/>
q. [SHOW IF H2 = 17] Variable Air Volume (VAV) box		<input type="checkbox"/>
r. [SHOW IF H2 =00] [INSERT RESPONSE TO H2_00]		<input type="checkbox"/>

## [ASK IF H1 = 2]

H3. Please identify all equipment that received tune-ups. [MULTIPLE RESPONSE]

1. Central Air Conditioner
2. Air Source Heat Pump
3. Mini-Split (Ductless) Heat Pump
4. Boiler
5. Furnace
6. [ASK IF COM\_FL=1] Space Heating Boiler
7. [ASK IF COM\_FL=1] Process Boiler
8. [ASK IF COM\_FL=1] Chiller
9. [ASK IF COM\_FL=1] Cooling tower
00. Something else, please specify [OPEN END]

H3a. How many of these heating or cooling equipment received tune-ups? [MULTIPLE RESPONSE] [NUMERIC OPEN END 0-99, CHECKBOX FOR NOT SURE FOR EACH ROW]

Tune-Up Equipment	Quantity	Not sure
a. [SHOW IF H3=1] Central Air Conditioner		<input type="checkbox"/>
b. [SHOW IF H3=2] Air Source Heat Pump		<input type="checkbox"/>
c. [SHOW IF H3=3] Mini-Split (Ductless) Heat Pump		<input type="checkbox"/>
d. [SHOW IF H3=4] Boiler		<input type="checkbox"/>
e. [SHOW IF H3=5] Furnace		<input type="checkbox"/>
f. [SHOW IF H3=6] Space Heating Boiler		<input type="checkbox"/>
g. [SHOW IF H3=7] Process Boiler		<input type="checkbox"/>
h. [SHOW IF H3=00] [INSERT RESPONSE/S FROM H3_00]		<input type="checkbox"/>

## [ASK IF H1=3 and MF\_FL=1]

H4. How many programmable thermostats did you install at your property?

[NUMERIC OPEN END 1-99, CHECKBOX FOR NOT SURE]

[ASK IF H1=7]

H5. How many ENERGY STAR ceiling fans did you install? [NUMERIC OPEN END 1-99, CHECKBOX FOR NOT SURE]

[ASK IF H1=8]

H6. How many ENERGY STAR ventilation or bathroom exhaust fans did you install? [NUMERIC OPEN END 1-99, CHECKBOX FOR NOT SURE]

[ASK IF H1=11 AND COM\_FL=1]

H7. Please identify all changes you made to your property's chiller and/or chilled water system. [MULTIPLE RESPONSE]

1. Replaced existing chillers with new high-efficiency chiller(s)
2. Balanced water side
3. Adjusted the chilled water temperature reset based on load
4. Optimized chiller sequencing
5. Maintained operating logs
6. Monitored pump operating pressures
7. Utilized water side economizer
8. Insulated chilled water piping
9. Installed thermal storage system(s)
10. Installed evaporative condenser system(s)
11. Optimized part load efficiency with multiple chillers or variable speed compressors
12. Installed absorption cooling system(s)
00. Something else, please specify [OPEN END]
98. Not sure

[ASK IF H7=1 or H2=15]

H8. What type(s) of chiller(s) did you install? Please select all that apply. [MULTIPLE RESPONSE]

1. Air Cooled Screw Chiller
2. Air Cooled Reciprocating Chiller
3. Air Cooled Absorption Chiller
4. Water Cooled Screw Chiller
5. Water Cooled Reciprocating Chiller
6. Water Cooled Centrifugal Chiller
7. Water Cooled Absorption Chiller
00. Something else, please specify [OPEN END]
98. Not sure

H8a. How many of each type of chiller did you install? [NUMERIC OPEN END 0-99, CHECKBOX FOR NOT SURE]

Chiller Type	Quantity	Not Sure (998)
a. [SHOW IF H8=1] Air Cooled Screw Chiller		<input type="checkbox"/>
b. [SHOW IF H8=2] Air Cooled Reciprocating Chiller		<input type="checkbox"/>
c. [SHOW IF H8=3] Air Cooled Absorption Chiller		<input type="checkbox"/>
d. [SHOW IF H8=4] Water Cooled Screw Chiller		<input type="checkbox"/>
e. [SHOW IF H8=5] Water Cooled Reciprocating Chiller		<input type="checkbox"/>

Chiller Type	Quantity	Not Sure (998)
f. [SHOW IF H8=6] Water Cooled Centrifugal Chiller		<input type="checkbox"/>
g. [SHOW IF H8=7] Water Cooled Absorption Chiller		<input type="checkbox"/>
h. [SHOW IF H8=00] [INSERT H8_00]		<input type="checkbox"/>

[ASK IF H1=11 AND H7 = 2 TO 00 OR H2=15]

H9. What type of chiller does your property have? If your property has multiple types, please select the majority type.

1. Air Cooled Screw Chiller
2. Air Cooled Reciprocating Chiller
3. Air Cooled Absorption Chiller
4. Water Cooled Screw Chiller
5. Water Cooled Reciprocating Chiller
6. Water Cooled Centrifugal Chiller
7. Water Cooled Absorption Chiller
00. Something else, specify [OPEN END]
98. Not sure

[ASK IF H1=12 AND COM\_FL=1]

H10. Please identify all changes you made to your property's boiler and/or steam water system. [MULTIPLE RESPONSE]

1. Installed high-efficiency boiler(s)
2. Installed hot water pump VFDs
3. Reset hot water supply temperature
4. Repaired or replaced boiler steam trap(s)
5. Reset boiler lockout controls
6. Increased boiler burner turndown ratio
7. Installed shut off damper on exhaust flue or combustion air intake
00. Something else, please specify [OPEN END]
98. Not sure
99. None

[ASK IF H10 = 1 OR 2 OR 4]

H11. How many of each boiler and/or steam water system equipment did you install? [NUMERIC OPEN END s0-99, CHECKBOX FOR NOT SURE FOR EACH ROW]

Boiler and/or Steam Water System Equipment	Quantity	Not Sure (998)
a. [SHOW ROW IF H10=1] High-efficiency boilers		<input type="checkbox"/>
b. [SHOW ROW IF H10=2] Hot water pump VFDs		<input type="checkbox"/>
c. [SHOW ROW IF H10=4] Steam traps		<input type="checkbox"/>

[ASK IF H10= 3 OR 5 OR 6 OR 7 OR 00]

H12. How many boilers are currently operating at your property? [NUMERIC OPEN END, CHECKBOX FOR NOT SURE]

**[ASK IF H1=13 AND COM\_FL = 1]**

H13. Please identify all upgrades you made to your property's **air distribution equipment and changes to ventilation controls**. **[MULTIPLE RESPONSE] [RANDOMIZE 1 THROUGH 10]**

1. Optimized building controls to improved building ventilation
2. Installed demand control ventilation
3. Installed economizer
4. Repaired and optimized existing economizer
5. Installed building pressurization control
6. Installed and maintained clean efficient air filters
7. Repaired and/or replaced dampers
8. Installed heat recovery or energy recovery ventilators
9. Installed destratification fans
10. Improved existing ductwork
00. Something else, please specify **[OPEN END] [ANCHOR]**
98. Not sure **[ANCHOR]**

**[ASK IF H13=1]**

H14. Please identify all changes you made to your property's ventilation control settings. **[MULTIPLE RESPONSE]**

1. Scheduled exhaust fans
2. Optimized supply fan performance
3. Balanced airside supply
4. Reduced or reset duct static pressure
5. Reduced outside air ventilation
6. Increased natural ventilation instead of cooling or heating
7. Performed or scheduled night purge cycle for pre-cooling
00. Something else, please specify **[OPEN END]**
98. Not sure

**[ASK IF H13=10]**

H15. Please identify all improvements you made to your property's duct system. **[MULTIPLE RESPONSE]**

1. Sealed ductwork
2. Insulated ductwork
3. Something else, please specify **[OPEN END]**
98. Not sure

**[ASK IF H1=14]**

H16. Please identify all changes you made to your property's **HVAC system operating scheduling settings**. **[MULTIPLE RESPONSE] [RANDOMIZE 1 THROUGH 7]**

1. Installed programmable or advanced thermostats
2. Adjusted schedules to space occupancy
3. Adjusted schedules for optimization
4. Scheduled optimum starts
5. Installed Guest Room Energy Management (GREM) systems
6. Reset supply air temperature
7. Reduced simultaneous heating and cooling
00. Something else, please specify **[OPEN END] [ANCHOR]**

98. Not sure [ANCHOR]

[ASK IF H16=1 and COM\_FL=1]

H17. How many programmable or advanced thermostats did you install at your property? [NUMERIC OPEN END 0-99, CHECKBOX FOR NOT SURE]

[ASK IF H16=2 or 3 or 4 and COM\_FL=1]

H18. Please specify type of equipment impacted by updating operating schedules. [MULTIPLE RESPONSE]

1. Air Handling Units (AHU)
2. Boilers
3. Return and exhaust fans
4. Fan powered VAV boxes
5. Heaters
6. Pumps
00. Something else, please specify [OPEN END]

H18a. Please specify number of equipment impacted by updating operating schedules. [MULTIPLE RESPONSE] [NUMERIC OPEN END 0-99, CHECKBOX FOR NOT SURE FOR EACH ROW]

Equipment Type	Quantity	Not sure
a. [SHOW IF H18=1] Air Handling Units (AHU)		<input type="checkbox"/>
b. [SHOW IF H18=2] Boilers		<input type="checkbox"/>
c. [SHOW IF H18=3] Return and exhaust fans		<input type="checkbox"/>
d. [SHOW IF H18=4] Fan powered VAV boxes		<input type="checkbox"/>
e. [SHOW IF H18=5] Heaters		<input type="checkbox"/>
f. [SHOW IF H18=6] Pumps		<input type="checkbox"/>
g. [SHOW IF H18=00] [INSERT RESPONSE FROM H18_00]		<input type="checkbox"/>

[ASK IF H1=15 AND COM\_FL=1 OR MF\_FL=1]

H19. Please select equipment that received VFD installations or upgrades from the list below. Please select all that apply. [MULTIPLE RESPONSE]

1. Hot Water Pump
2. Chilled Water Pump
3. Cooling Tower Fan
4. HVAC Supply/Return Fans
00. Something else, please specify [OPEN END]
98. Not sure

H19a. How many of the following equipment received installations or VFD upgrades. [NUMERIC OPEN END 0-99, CHECKBOX FOR NOT SURE FOR EACH ROW]

VFD Application	Quantity	Not sure
a. [SHOW IF H19=1] Hot Water Pump		<input type="checkbox"/>
b. [SHOW IF H19=2] Chilled Water Pump		<input type="checkbox"/>
c. [SHOW IF H19=3] Cooling Tower Fan		<input type="checkbox"/>
d. [SHOW IF H19=4] HVAC Supply/Return Fans		<input type="checkbox"/>

VFD Application	Quantity	Not sure
e. [SHOW IF H19=00] [INSERT RESPONSE TO H19_00]		<input type="checkbox"/>

H20. Did you receive any rebates or incentives for installing or upgrading any of your **heating, cooling, and/or ventilation** equipment?

1. Yes
2. No
8. Not Sure [SKIP TO NEXT SECTION]

**[ASK IF H20=1]**

H20a. For which energy saving **heating, cooling, and/or ventilation** equipment did you receive rebates or incentives? Please select all that apply. **[MULTIPLE RESPONSE]**

1. [SHOW IF H1=1] New energy saving heating and cooling equipment
2. [SHOW IF H1=2] Heating and/or cooling system tune-ups
3. [SHOW IF H1=3] Programmable or smart thermostat
4. [SHOW IF H1=4] Sealed leaks or tears in existing duct work
5. [SHOW IF H1=5] Insulated existing duct work
6. [SHOW IF H1=6] Replace dirty air filters regularly (at least every 3-6 months)
7. [SHOW IF H1=7] ENERGY STAR ceiling fan(s)
8. [SHOW IF H1=8] ENERGY STAR ventilation or exhaust bathroom fan(s)
9. [SHOW IF H1=9] Attic fan
10. [SHOW IF H1=10] Whole house fan
11. [SHOW IF H1=11] Made changes to chillers or chilled water system(s)
12. [SHOW IF H1=12] Made changes to boilers or steam water system(s)
13. [SHOW IF H1=13] Made changes air distribution equipment and ventilation controls
14. [SHOW IF H1=14] Made changes to HVAC operating schedules
15. [SHOW IF H1=15] Variable speed fan or blower motors
00. [SHOW IF H1=00] [INSERT RESPONSE TO H1\_00]
16. I received no rebates for the above listed equipment

**[ASK IF ANY H20a = 1 THROUGH 00]**

H20b. Please identify the organization(s) from which you received rebates or incentives? Please select all that apply. **[MULTIPLE RESPONSE]**

1. Marin Clean Energy
2. Pacific Gas & Electric Company
3. Bay Area Regional Energy Network
0. Something else, please specify **[OPEN END]**
8. Not sure

**[ASK IF H20=2]**

H20c. Please identify the main reason why you did not receive rebates or incentives?

1. Equipment did not qualify
2. Was in a hurry to purchase new equipment
3. Too much of a hassle to apply for the rebate
4. Did not know if one existed
0. Something else, please specify **[OPEN END]**

[ASK IF EE1 = 6]

**CONSUMER ELECTRONICS**

HE1. Which of the following **consumer electronic equipment** have you installed to reduce your property's energy use? Remember, we are interested in the consumer electronics you purchased to replace old equipment since you interacted with Marin Clean Energy. **[MULTIPLE RESPONSE, UP TO THREE]**

1. Advanced power strips
2. Computer power management software
3. Energy saving desktop or laptop computers
4. ENERGY STAR rated printer(s)
5. ENERGY STAR rated copier(s)
6. ENERGY STAR rated computer monitor(s)
00. Something else, please specify [OPEN END]
98. Not sure [SKIP TO NEXT SECTION]

HE1a. How many of each type of consumer electronic equipment did you install? **[NUMERIC OPEN END, 0-99, CHECKBOX FOR NOT SURE FOR EACH ROW]**

Consumer Electronic Equipment	Quantity	Not sure
a. [SHOW IF HE1a=1] Advanced power strips		<input type="checkbox"/>
b. [SHOW IF HE1b=1] Computer power management software		<input type="checkbox"/>
c. [SHOW IF HE1c=1] Energy saving desktop or laptop computers		<input type="checkbox"/>
d. [SHOW IF HE1d=1] ENERGY STAR rated printer(s)		<input type="checkbox"/>
e. [SHOW IF HE1e=1] ENERGY STAR rated copier(s)		<input type="checkbox"/>
f. [SHOW IF HE1f=1] ENERGY STAR rated computer monitor(s)		<input type="checkbox"/>
g. [SHOW IF HE1g=1] [INSERT RESPONSE TO HE1g] [OPEN END]		<input type="checkbox"/>



**[ASK IF ANY HE1 = 1 THROUGH 00]**

HE2. Did you receive any rebates or incentives for the consumer electronics you installed?

1. Yes
2. No
98. Not sure **[SKIP TO NEXT SECTION]**

**[ASK IF HE2=1]**

HE2a. For which consumer electronic equipment did you receive rebates or incentives? Please select all that apply. **[MULTIPLE RESPONSE]**

1. **[SHOW IF HE1=1]** Advanced power strips
2. **[SHOW IF HE1=2]** Computer power management software
3. **[SHOW IF HE1=3]** Purchased energy saving desktop or laptop computers
4. **[SHOW IF HE1=4]** ENERGY STAR rated printer(s)
5. **[SHOW IF HE1=5]** ENERGY STAR rated copier(s)
6. **[SHOW IF HE1=6]** ENERGY STAR rated computer monitor(s)
00. **[SHOW IF HE1=00]** **[INSERT RESPONSE TO HE1\_00]** **[OPEN END]**
7. I received no rebates for the above listed equipment

**[ASK IF HE2a=1 THROUGH 00]**

HE2b. Please identify the organization(s) from which you received rebates or incentives? Please select all that apply. **[MULTIPLE RESPONSE]**

1. Marin Clean Energy
2. Pacific Gas & Electric Company
3. Bay Area Regional Energy Network
0. Something else, please specify **[OPEN END]**
8. Not sure

**[ASK IF HE2=2]**

HE2c. Please identify the main reason why you did not receive rebates or incentives?

1. Equipment did not qualify
2. Was in a hurry to purchase new equipment
3. Too much of a hassle to apply for the rebate
4. Did not know if one existed
0. Something else, please specify **[OPEN END]**

**[ASK IF EE1 = 3]**

**APPLIANCES**

AP1. Which of the following **appliances** have you installed or recycled at your property? Please select all that apply. **[MULTIPLE RESPONSE]** **[RANDOMIZE 1 THROUGH 11]**

1. **[ASK IF SF\_FL=1]** ENERGY STAR Air Purifier
2. ENERGY STAR Clothes Washer
3. ENERGY STAR Dehumidifier
4. **[ASK IF SF\_FL=1 OR MF\_FL=1]** ENERGY STAR Dishwasher
5. ENERGY STAR Freezer
6. ENERGY STAR Refrigerator
7. **[ASK IF SF\_FL=1 OR MF\_FL=1]** ENERGY STAR Room Air Conditioner
8. ENERGY STAR Clothes Dryer

9. [ASK IF SF\_FL=1] Recycled old secondary refrigerator
10. [ASK IF SF\_FL=1] Recycled old secondary freezer
11. [ASK IF SF\_FL=1] Recycled old room air conditioner
00. Something else, please specify [OPEN END] [ANCHOR]
98. Not sure [SKIP TO NEXT SECTION] [ANCHOR]

[ASK IF AP1 = 1 THROUGH 00]

AP1a. How many of each appliance did you install at your property? [NUMERIC OPEN END 0-99, CHECKBOX FOR NOT SURE]

Appliance Type	Quantity	Not Sure
a. [SHOW IF AP1=1] ENERGY STAR Air Purifier		<input type="checkbox"/>
b. [SHOW IF AP1=2] ENERGY STAR Clothes Washer		<input type="checkbox"/>
c. [SHOW IF AP1=3] ENERGY STAR Dehumidifier		<input type="checkbox"/>
d. [SHOW IF AP1=4] ENERGY STAR Dishwasher		<input type="checkbox"/>
e. [SHOW IF AP1=5] ENERGY STAR Freezer		<input type="checkbox"/>
f. [SHOW IF AP1=6] ENERGY STAR Refrigerator		<input type="checkbox"/>
g. [SHOW IF AP1=7] ENERGY STAR Room Air Conditioner		<input type="checkbox"/>
h. [SHOW IF AP1=8] ENERGY STAR Clothes Dryer		<input type="checkbox"/>
i. [SHOW IF AP1=9] Recycled old secondary refrigerator		<input type="checkbox"/>
j. [SHOW IF AP1=10] Recycled old secondary freezer		<input type="checkbox"/>
k. [SHOW IF AP1=11] Recycled old room air conditioner		<input type="checkbox"/>
l. [SHOW IF AP1=00] [INSERT RESPONSE TO AP1_00]		<input type="checkbox"/>

[ASK IF AP1=8]

AP3. Is the ENERGY STAR Clothes Dryer you installed gas or electric?

1. Gas
2. Electric
8. Not sure

[ASK IF AP1 = 1 THROUGH 00]

AP4. Did you receive any rebates or incentives for installing appliances?

1. Yes
2. No
3. Not sure [SKIP TO NEXT SECTION]

[ASK IF AP4=1]

AP4a. For which appliance(s) did you receive rebates or incentives? Please select all that apply. [MULTIPLE RESPONSE]

1. [SHOW IF AP1=1] ENERGY STAR Air Purifier
2. [SHOW IF AP1=2] ENERGY STAR Clothes Washer
3. [SHOW IF AP1=3] ENERGY STAR Dehumidifier
4. [SHOW IF AP1=4] ENERGY STAR Dishwasher
5. [SHOW IF AP1=5] ENERGY STAR Freezer
6. [SHOW IF AP1=6] ENERGY STAR Refrigerator

7. [SHOW IF AP1=7] ENERGY STAR Room Air Conditioner
8. [SHOW IF AP1=8] ENERGY STAR Clothes Dryer
9. [SHOW IF AP1=9] Recycled old secondary refrigerator
10. [SHOW IF AP1=10] Recycled old secondary freezer
11. [SHOW IF AP1=11] Recycled old room air conditioner
00. [SHOW IF AP1=00] [INSERT RESPONSE TO AP1\_00]
12. I received no rebates for the above listed equipment

[ASK IF AP4a = 1 THROUGH 00]

AP4b. Please identify the organization(s) from which you received rebates or incentives? Please select all that apply. [MULTIPLE RESPONSE]

1. Marin Clean Energy
2. Pacific Gas & Electric Company
3. Bay Area Regional Energy Network
0. Something else, please specify [OPEN END]
8. Not sure

[ASK IF AP4=2]

AP4c. Please identify the main reason why you did not receive rebates or incentives?

1. Equipment did not qualify
2. Was in a hurry to purchase new equipment
3. Too much of a hassle to apply for the rebate
4. Did not know if one existed
0. Something else, please specify [OPEN END]

[ASK IF EE1 = 4]

**BUILDING ENVELOPE**

BE1. Which of the following improvements have you made to your property's **insulation or air sealing**? Please select all that apply. [MULTIPLE RESPONSE] [RANDOMIZE 1 THROUGH 7]

1. Added insulation
2. Caulked, weather-stripped or sealed windows, doors, and/or outlet gaskets
3. [ASK IF SF\_FL=1 OR MF\_FL = 1] Caulked, weather-stripped or spray-foamed air leaks in attic or crawlspace
4. [ASK IF SF\_FL=1] Weather-stripped or insulated attic hatch or door
5. Installed ENERGY STAR double or triple pane windows
6. Installed window film to existing windows
7. Installed cool roof
00. Something else, please specify [OPEN END] [ANCHOR]
98. Not sure [SKIP TO NEXT SECTION] [ANCHOR]

[ASK IF BE1=1]

BE2. Where did you install insulation within your property? Please select all that apply. [MULTIPLE RESPONSE]

1. Attic
2. Walls
3. Floor
4. Crawlspace
5. Basement
6. Rim Joist

00. Somewhere else, please specify **[OPEN END]**

**[ASK IF BE2 = 1 through 00 ]**

BE3. What is the approximate square footage of installed insulation? Your best estimate is fine. **[NUMERIC OPEN END, CHECKBOX FOR NOT SURE FOR EACH ROW]**

Area	Approximate Square Footage	Not Sure
a. <b>[SHOW IF BE2=1]</b> Attic		<input type="checkbox"/>
b. <b>[SHOW IF BE2=2]</b> Walls		<input type="checkbox"/>
c. <b>[SHOW IF BE2=3]</b> Floor		<input type="checkbox"/>
d. <b>[SHOW IF BE2=4]</b> Crawlspace		<input type="checkbox"/>
e. <b>[SHOW IF BE2=5]</b> Basement		<input type="checkbox"/>
f. <b>[SHOW IF BE2=6]</b> Rim Joist		<input type="checkbox"/>
g. <b>[SHOW IF BE2=00]</b> <b>[INSERT RESPONSE FROM BE2_00]</b>		<input type="checkbox"/>

**[ASK IF BE1=2]**

BE4. How many windows/doors did you caulk, weather-strip or seal? **[NUMERIC OPEN END 1-999, CHECKBOX FOR NOT SURE]**

**[ASK IF BE1=5]**

BE5. How many ENERGY STAR double or triple pane windows did you install? **[NUMERIC OPEN END 1-999, CHECKBOX FOR NOT SURE]**

**[ASK IF BE1=6]**

BE6. How many windows did you install window film or tint? **[NUMERIC OPEN END 1-999, CHECKBOX FOR NOT SURE]**

**[ASK IF BE1 = 1 THROUGH 00]**

BE7. Did you receive any rebates or incentives for installing building envelope measures such as insulation or air sealing?

1. Yes
2. No
8. Not sure **[SKIP TO NEXT SECTION]**

**[ASK IF BE7=1]**

BE7a. For which building envelope measures did you receive rebates or incentives? Please select all that apply. **[MULTIPLE RESPONSE]**

1. **[SHOW IF BE1=1]** Added insulation
2. **[SHOW IF BE1=2]** Caulked, weather-stripped or sealed windows, doors, and/or outlet gaskets
3. **[SHOW IF BE1=3]** Caulked, weather-stripped or spray-foamed air leaks in attic or crawlspace
4. **[SHOW IF BE1=4]** Weather-stripped or insulated attic hatch or door
5. **[SHOW IF BE1=5]** Installed ENERGY STAR double or triple pane windows
6. **[SHOW IF BE1=6]** Installed window film to existing windows
7. **[SHOW IF BE1=7]** Installed cool roof
00. **[SHOW IF BE1=00]** **[INSERT RESPONSE FROM BE1\_00]**
8. I received no rebates for the above listed equipment **[SKIP TO NEXT SECTION]**

**[ASK IF BE7a = 1 THROUGH 00]**

BE7b. Please identify the organization(s) from which you received rebates or incentives? Please select all that apply. **[MULTIPLE RESPONSE]**

1. Marin Clean Energy
2. Pacific Gas & Electric Company
3. Bay Area Regional Energy Network
0. Something else, please specify **[OPEN END]**
8. Not sure

**[ASK IF BE7=2]**

BE7c. Please identify the main reason why you did not receive rebates or incentives?

1. Equipment did not qualify
2. Was in a hurry to purchase new equipment
3. Too much of a hassle to apply for the rebate
4. Did not know if one existed
0. Something else, please specify **[OPEN END]**

**[ASK IF EE1 = 5]****WATER HEATING**

WH1. Which of the following energy related upgrades have you made to reduce your property's **domestic hot water** energy use? Please select all that. **[MULTIPLE RESPONSE] [RANDOMIZE 1 THROUGH 10]**

1. Installed low-flow showerhead(s)
2. Installed low-flow faucet aerator(s)
3. **[ASK IF MF\_FL=1 OR COM\_FL=1]** Installed pre-rinse spray valve(s)
4. Installed thermostatic restrictor valve in the shower
5. Installed new ENERGY STAR rated water heater(s)
6. **[ASK IF MF\_FL=1 OR COM\_FL=1]** Installed demand control recirculation pump(s)
7. **[ASK IF MF\_FL=1 OR COM\_FL=1]** Performed boiler tune-up(s)
8. Set water heater temperature to 120F degrees
9. Insulated hot water pipes with pipe insulation
10. Installed insulating blanket around water heater tank(s)
00. Something else, specify **[OPEN END] [ANCHOR]**
98. Not sure **[SKIP TO NEXT SECTION] [ANCHOR]**

**[ASK IF WH1 = 1 - 00]**

WH1a. For each domestic hot water upgrade you've made to your property, please specify how many of each equipment you installed. **[NUMERIC OPEN END 0-99, CHECKBOX FOR NOT SURE FOR EACH ROW]**

Equipment Type	Quantity	Not Sure
a. <b>[SHOW IF WH1=1]</b> Low-flow showerhead(s)		<input type="checkbox"/>
b. <b>[SHOW IF WH1=2]</b> Low-flow faucet aerator(s)		<input type="checkbox"/>
c. <b>[SHOW IF WH1=3]</b> Pre-rinse spray valve(s)		<input type="checkbox"/>
d. <b>[SHOW IF WH1=4]</b> Thermostatic restrictor valve in the shower		<input type="checkbox"/>
e. <b>[SHOW IF WH1=5]</b> ENERGY STAR rated water heater(s)		<input type="checkbox"/>
f. <b>[SHOW IF WH1=6]</b> Demand control recirculation pump(s)		<input type="checkbox"/>
g. <b>[SHOW IF WH1=10]</b> Insulating blanket around water heater tank(s)		<input type="checkbox"/>

Equipment Type	Quantity	Not Sure
h. [SHOW IF WH1=00] [INSERT RESPONSE TO WH1_00]		<input type="checkbox"/>

**[ASK IF WH1=9]**

WH2. Approximately how many linear feet of pipe insulation did you install? **[NUMERIC OPEN END, CHECKBOX FOR NOT SURE]**

**[ASK IF WH1=5]**

WH3. What type of energy saving water heater was installed? **[MULTIPLE RESPONSE]**

1. Storage tank water heater
2. Tankless water heater (also referred to as instantaneous or on-demand)
3. Heat pump water heater
4. Solar water heating
00. Something else, please specify **[OPEN END]**

**[ASK IF ANY WH1 = 1 THROUGH 00]**

WH4. Did you receive rebates or incentives for any of the domestic hot water equipment you installed or upgraded?

1. Yes
2. No
8. Not sure **[SKIP TO NEXT SECTION]**

**[ASK IF WH4=1]**

WH4a. For which domestic hot water equipment or equipment modifications did you receive rebates or incentives? Please select all that apply. **[MULTIPLE RESPONSE]**

1. [SHOW IF WH1=1] Low-flow showerhead(s)
2. [SHOW IF WH1=2] Low-flow faucet aerator(s)
3. [SHOW IF WH1=3] Pre-rinse spray valve(s)
4. [SHOW IF WH1=4] Thermostatic restrictor valve in the shower
5. [SHOW IF WH1=5] ENERGY STAR rated water heater(s)
6. [SHOW IF WH1=6] Demand control recirculation pump(s)
7. [SHOW IF WH1=7] Performed boiler tune-up(s)
8. [SHOW IF WH1=8] Set water heater temperature to 120F degrees
9. [SHOW IF WH1=9] Insulated hot water pipes with pipe insulation
10. [SHOW IF WH1=10] Installed insulating blanket around water heater tank
00. [SHOW IF WH1=00] [INSERT RESPONSE TO WH1\_00]
11. I received no rebates for the above listed equipment

**[ASK IF WH4a = 1 THROUGH 00]**

WH4b. Please identify the organization(s) from which you received rebates or incentives? Please select all that apply. **[MULTIPLE RESPONSE]**

1. Marin Clean Energy
2. Pacific Gas & Electric Company
3. Bay Area Regional Energy Network
0. Something else, please specify **[OPEN END]**
8. Not sure

**[ASK IF WH4=2]**

WH4c. Please identify the main reason why you did not receive rebates or incentives?

1. Equipment did not qualify
2. Was in a hurry to purchase new equipment
3. Too much of a hassle to apply for the rebate
4. Did not know if one existed
0. Something else, please specify [OPEN END]

[ASK IF EE1 = 7 AND COM\_FL=1 OR MF\_FL=1]

#### FOOD SERVICE EQUIPMENT

FS1. Which of the following **food service equipment** have you installed to save energy in your property? Please select all that apply. [MULTIPLE RESPONSE] [RANDOMIZE 1 THROUGH 12]

1. High-efficiency oven(s)
2. ENERGY STAR reach-in cooler(s)
3. ENERGY STAR reach-in freezer(s)
4. ENERGY STAR steam cooker
5. ENERGY STAR dishwasher
6. ENERGY STAR fryer
7. ENERGY STAR griddle
8. ENERGY STAR hot food holding cabinets
9. ENERGY STAR ice machine
10. Infrared kitchen equipment
11. Pre-rinse spray valves
12. Kitchen demand ventilation controls
00. Something else, please specify [OPEN END] [ANCHOR]
98. Not sure [SKIP TO NEXT SECTION] [ANCHOR]

[ASK IF ANY FS1 = 1 THROUGH 00]

FS1a. For each type of foodservice equipment you installed, please specify the quantity of equipment that was installed in your facility. [NUMERIC OPEN END, CHECKBOX FOR NOT SURE FOR EACH ROW]

Food Service Equipment	Quantity	Not Sure
a. [SHOW IF FS1=1] High-efficiency oven(s)		<input type="checkbox"/>
b. [SHOW IF FS1=2] ENERGY STAR reach-in cooler(s)		<input type="checkbox"/>
c. [SHOW IF FS1=3] ENERGY STAR reach-in freezer(s)		<input type="checkbox"/>
d. [SHOW IF FS1=4] ENERGY STAR steam cooker		<input type="checkbox"/>
e. [SHOW IF FS1=5] ENERGY STAR dishwasher		<input type="checkbox"/>
f. [SHOW IF FS1=6] ENERGY STAR fryer		<input type="checkbox"/>
g. [SHOW IF FS1=7] ENERGY STAR griddle		<input type="checkbox"/>
h. [SHOW IF FS1=8] ENERGY STAR hot food holding cabinets		<input type="checkbox"/>
i. [SHOW IF FS1=9] ENERGY STAR ice machine		<input type="checkbox"/>
j. [SHOW IF FS1=10] Infrared kitchen equipment		<input type="checkbox"/>
k. [SHOW IF FS1=11] Pre-rinse spray valves		<input type="checkbox"/>
l. [SHOW IF FS1=12] Kitchen demand ventilation controls		<input type="checkbox"/>



Food Service Equipment	Quantity	Not Sure
m. [SHOW IF FS1=00] [INSERT RESPONSE TO FS1_00]		<input type="checkbox"/>

## [ASK IF ANY FS1 = 1 THROUGH 00]

FS2. What type of food service do you provide?

1. Fast food
2. Full service
3. Cafeteria
4. Pizza
00. Something else, specify [OPEN END]
98. Not sure

## [ASK IF FS1=1]

FS3. Please identify the type(s) of energy saving oven(s) you installed at your property. [MULTIPLE RESPONSE]

**a. Combination Oven**

1. Electric
2. Gas
3. Not installed

**b. Conveyor Oven**

1. Electric
2. Gas
3. Not installed

**c. Convection Oven**

1. Electric
2. Gas
3. Not installed

**d. Rack Oven**

1. Electric
2. Gas
3. Not installed

**e. Something else, please specify [OPEN END]**

1. Electric
2. Gas
3. Not installed

## [ASK IF FS1=10]

FS6. Please identify the type(s) of installed energy saving infrared kitchen equipment at your property.

**[MULTIPLE RESPONSE]**

1. Charbroiler

- 2. Rotisserie oven
- 3. Salamander broiler
- 4. Upright broiler
- 00. Something else, please specify [OPEN END]
- 98. Not sure

**[ASK IF ANY FS6 = 1 THROUGH 00]**

FS6a. How many of each type of energy saving infrared kitchen equipment did you install? Please provide your best estimate for all that apply. **[NUMERIC OPEN END, CHECKBOX FOR NOT SURE FOR EACH ROW]**

Oven Type	Quantity	Not Sure
a. <b>[SHOW IF FS6=1]</b> Charbroiler		<input type="checkbox"/>
b. <b>[SHOW IF FS6=2]</b> Rotisserie oven		<input type="checkbox"/>
c. <b>[SHOW IF FS6=3]</b> Salamander broiler		<input type="checkbox"/>
d. <b>[SHOW IF FS6=4]</b> Upright broiler		<input type="checkbox"/>
e. <b>[SHOW IF FS6=00]</b> [INSERT RESPONSE TO FS6_00]		<input type="checkbox"/>

**[ASK IF ANY FS6 = 1 THROUGH 0]**

FS6b. Please identify what type(s) of fuel your energy saving infrared kitchen equipment uses.

- a. **[SHOW IF FS6=1]** Charbroiler
  - 1. Electric
  - 2. Gas
  - 8. Not sure
- b. **[SHOW IF FS6=2]** Rotisserie oven
  - 1. Electric
  - 2. Gas
  - 8. Not sure
- c. **[SHOW IF FS6=3]** Salamander broiler
  - 1. Electric
  - 2. Gas
  - 8. Not sure
- d. **[SHOW IF FS6=4]** Upright broiler
  - 1. Electric
  - 2. Gas
  - 8. Not sure
- e. **[ONLY SHOW IF FS6 = 00] [LIST RESPONSE FROM FS6 = 00]**
  - 1. Electric
  - 2. Gas
  - 8. Not sure

**[ASK IF ANY FS1a = 1THROUGH 00]**

FS7. Did you receive rebates or incentives for any of the food service equipment you installed?

1. Yes
2. No
8. Not Sure **[SKIP TO NEXT SECTION]**

**[ASK IF FS7=1]**

FS7a. For which food service equipment did you receive rebates or incentives? Please select all that apply.

**[MULTIPLE RESPONSE]**

1. **[SHOW IF FS1=1]** High-efficiency oven(s)
2. **[SHOW IF FS1=2]** ENERGY STAR reach-in cooler(s)
3. **[SHOW IF FS1=3]** ENERGY STAR reach-in freezer(s)
4. **[SHOW IF FS1=4]** ENERGY STAR steam cooker
5. **[SHOW IF FS1=5]** ENERGY STAR dishwasher
6. **[SHOW IF FS1=6]** ENERGY STAR fryer
7. **[SHOW IF FS1=7]** ENERGY STAR griddle
8. **[SHOW IF FS1=8]** ENERGY STAR hot food holding cabinets
9. **[SHOW IF FS1=9]** ENERGY STAR ice machine
10. **[SHOW IF FS1=10]** Infrared kitchen equipment
11. **[SHOW IF FS1=11]** Pre-rinse spray valves
12. **[SHOW IF FS1=12]** Kitchen demand ventilation controls
00. **[SHOW IF FS1=00]** **[INSERT RESPONSE TO FS1\_00]**
13. I received no rebates for the above listed equipment

**[ASK IF FS7a = 1 THROUGH 00]**

FS7b. Please identify the organization(s) from which you received rebates or incentives? Please select all that apply. **[MULTIPLE RESPONSE]**

1. Marin Clean Energy
2. Pacific Gas & Electric Company
3. Bay Area Regional Energy Network
0. Something else, please specify **[OPEN END]**
8. Not sure

**[ASK IF FS7=2]**

FS7c. Please identify the main reason why you did not receive rebates or incentives?

1. Equipment did not qualify
2. Was in a hurry to purchase new equipment
3. Too much of a hassle to apply for the rebate
4. Did not know if one existed
0. Something else, please specify **[OPEN END]**

**[ASK IF EE1 = 8 AND COM\_FL=1]**

**REFRIGERATION**

R1. Which of the following **refrigeration** equipment have you installed to save on your property's energy usage?

Please select all that apply. **[MULTIPLE RESPONSE]**

1. Controls for coolers and/or freezers
2. Refrigerated beverage or snack machine controls
3. ENERGY STAR refrigerated vending machine

4. ECM for walk-in and reach-in coolers and/or freezers
5. Strip curtain for walk-in coolers and/or freezers
6. Refrigeration economizers
7. Night covers for open refrigeration cases
00. Something else, please specify **[OPEN END]**
8. Not sure **[SKIP TO NEXT SECTION]**

**[ASK IF ANY R1 = 1 THROUGH 00]**

R2. Please identify the property type that most closely resembles your property.

1. Supermarket
2. Convenience Store
3. Restaurant
4. Refrigerated Warehouse
00. Something else, please specify **[OPEN END]**

**[ASK IF R1=1]**

R3. What type(s) of refrigeration controls did you install? Please select all that apply. **[MULTIPLE RESPONSE]**

1. Automatic door closers
2. Door heater controls
3. Electrically Commutated Motor (ECM) controls
00. Something else, please specify **[OPEN END]**
98. Not sure

**[ASK IF ANY R3 = 1 THROUGH 00]**

R3a. How many of each type of refrigeration control did you install? **[NUMERIC OPEN END, CHECKBOX FOR NOT SURE]**

Refrigeration Control	Quantity	Not Sure
a. <b>[SHOW IF R3=1]</b> Automatic door closers		<input type="checkbox"/>
b. <b>[SHOW IF R3=2]</b> Door heater controls		<input type="checkbox"/>
c. <b>[SHOW IF R3=3]</b> Electrically Commutated Motor (ECM) controls		<input type="checkbox"/>
d. <b>[SHOW IF R3=00]</b> <b>[INSERT RESPONSE FROM R3_00]</b>		<input type="checkbox"/>

**[ASK IF R1=1]**

R3b. For which equipment type did you install refrigeration controls?

- a. **[SHOW IF R3=1]** Automatic door closers
  1. Cooler
  2. Freezer
  8. Not sure
- b. **[SHOW IF R3=2]** Door heater controls
  1. Cooler
  2. Freezer
  8. Not sure

c. **[SHOW IF R3=3]** Electrically Commutated Motor (ECM) controls

1. Cooler
2. Freezer
8. Not sure

d. **[SHOW IF R3=00]** **[INSERT RESPONSE FROM R3\_00]**

1. Cooler
2. Freezer
8. Not sure

**[ASK IF R1 = 2 THROUGH 00]**

R4. Please identify the number of refrigeration equipment installed at your property. Your best estimate is fine.  
**[NUMERIC OPEN END, CHECKBOX FOR NOT SURE FOR EACH ROW]**

Refrigeration Control	Quantity	Not Sure
a. <b>[SHOW IF R1=2]</b> Refrigerated beverage or snack machine controls		<input type="checkbox"/>
b. <b>[SHOW IF R1=3]</b> ENERGY STAR refrigerated vending machine		<input type="checkbox"/>
c. <b>[SHOW IF R1=4]</b> ECM for walk-in and reach-in coolers and/or freezers		<input type="checkbox"/>
d. <b>[SHOW IF R1=5]</b> Strip curtain for walk-in coolers and/or freezers		<input type="checkbox"/>
e. <b>[SHOW IF R1=6]</b> Refrigeration economizers		<input type="checkbox"/>
f. <b>[SHOW IF R1=7]</b> Night covers for open refrigeration cases		<input type="checkbox"/>
g. <b>[SHOW IF R1=00]</b> <b>[INSERT RESPONSE FROM R1_00]</b>		<input type="checkbox"/>

**[ASK IF R1=7]**

R5. For how many linear feet of refrigerated cases did you install night covers? **[NUMERIC OPEN END, CHECKBOX FOR NOT SURE]**

**[ASK IF ANY R1 = 1 THROUGH 00]**

R6. Did you receive a rebate from any of the refrigeration equipment you installed?

1. Yes
2. No
8. Not sure **[SKIP TO NEXT SECTION]**

**[ASK IF R6=1]**

R6a. For which refrigeration equipment did you receive rebates or incentives? Please select all that apply.  
**[MULTIPLE RESPONSE]**

1. **[SHOW IF R1=1]** Controls for coolers and/or freezers
2. **[SHOW IF R1=2]** Refrigerated beverage or snack machine controls
3. **[SHOW IF R1=3]** ENERGY STAR refrigerated vending machine
4. **[SHOW IF R1=4]** ECM for walk-in and reach-in coolers and/or freezers
5. **[SHOW IF R1=5]** Strip curtain for walk-in coolers and/or freezers
6. **[SHOW IF R1=6]** Refrigeration economizers
7. **[SHOW IF R1=7]** Night covers for open refrigeration cases
00. **[SHOW IF R1=00]** **[INSERT RESPONSE TO R1\_00]**
8. I received no rebates for the above listed equipment

**[ASK IF R6a = 1 THROUGH 00]**

R6b. Please identify the organization(s) from which you received rebates or incentives? Please select all that apply. **[MULTIPLE RESPONSE]**

1. Marin Clean Energy
2. Pacific Gas & Electric Company
3. Bay Area Regional Energy Network
4. Something else, please specify **[OPEN END]**
8. Not sure

**[ASK IF R6=2]**

R6c. Please identify the main reason why you did not receive rebates or incentives?

1. Equipment did not qualify
2. Was in a hurry to purchase new equipment
3. Too much of a hassle to apply for the rebate
4. Did not know if one existed
0. Something else, please specify **[OPEN END]**

**[ASK IF EE1 = 9 AND COM\_FL=1]****COMPRESSED AIR**

CA1. Which of the following equipment have you installed or upgraded to reduce your property's **compressed air** energy usage? Please select all that apply. **[MULTIPLE RESPONSE]**

1. Air compressor with a variable frequency drive
2. High-efficiency air dryer
3. Low-pressure drop filters
4. No-loss condensate drains
5. High-efficiency air nozzles
00. Something else, please specify **[OPEN END]**
98. Not sure **[SKIP TO NEXT SECTION]**

**[ASK IF ANY CA1 = 1 THROUGH 00]**

CA1a. How many of each type of compressed air equipment did you install or upgrade? **[NUMERIC OPEN END 0-99, CHECKBOX FOR NOT SURE FOR EACH ROW]**

Compressed Air Equipment	Quantity	Not Sure
a. <b>[SHOW IF CA1=1]</b> Air compressor with a variable frequency drive		<input type="checkbox"/>
b. <b>[SHOW IF CA1=2]</b> High-efficiency air dryer		<input type="checkbox"/>
c. <b>[SHOW IF CA1=3]</b> Low-pressure drop filters		<input type="checkbox"/>
d. <b>[SHOW IF CA1=4]</b> No-loss condensate drains		<input type="checkbox"/>
e. <b>[SHOW IF CA1=5]</b> High-efficiency air nozzles		<input type="checkbox"/>
f. <b>[SHOW IF CA1=00]</b> <b>[INSERT RESPONSE TO CA1_00]</b>		<input type="checkbox"/>

**[ASK IF CA1 = 1 THROUGH 00 AND COM\_FL=1]**

CA2. How often does your property use compressed air? Your best estimate is fine.

1. Less than 8 hours per day; 5 days a week
2. 8 hours per day; 5 days a week
3. 16 hours per day; 5 days a week
4. 24 hours per day; 5 days a week
5. 24 hours per day; 7 days a week

- 00. Something else, specify [OPEN END]
- 98. Not sure

**[ASK IF CA1 = 1 THROUGH 00 AND COM\_FL=1]**

- CA3. Please identify the air compressor type at your property.
- 1. Reciprocating
  - 2. Screw
  - 00. Something else, specify [OPEN END]
  - 98. Not sure

**[ASK IF CA1 = 1 THROUGH 00]**

- CA4. Did you receive rebates or incentives for upgrading your compressed air equipment?
- 1. Yes
  - 2. No
  - 98. Not sure [SKIP TO NEXT SECTION]

**[ASK IF CA4 = 1]**

CA4a. For which compressed air equipment upgrades or installations did you receive rebates or incentives? Please select all that apply. [MULTIPLE RESPONSE]

- 1. [SHOW IF CA1=1] Air compressor with a variable frequency drive
- 2. [SHOW IF CA1=2] High-efficiency air dryer
- 3. [SHOW IF CA1=3] Low-pressure drop filters
- 4. [SHOW IF CA1=4] No-loss condensate drains
- 5. [SHOW IF CA1=5] High-efficiency air nozzles
- 00. [SHOW IF CA1=00] [INSERT RESPONSE TO CA1\_00]
- 6. I received no rebates for the above listed equipment

**[ASK IF CA4a THROUGH 00=1]**

- CA4b. Please identify the organization(s) from which you received rebates or incentives? Please select all that apply. [MULTIPLE RESPONSE]
- 1. Marin Clean Energy
  - 2. Pacific Gas & Electric Company
  - 3. Bay Area Regional Energy Network
  - 4. Something else, please specify [OPEN END]
  - 8. Not sure

**[ASK IF CA4=2]**

- CA4c. Please identify the main reason why you did not receive rebates or incentives?
- 1. Equipment did not qualify
  - 2. Was in a hurry to purchase new equipment
  - 3. Too much of a hassle to apply for the rebate
  - 4. Did not know if one existed
  - 0. Something else, please specify [OPEN END]

**[ASK IF EE1 = 10]**

**POOL EQUIPMENT**

P1. Which of the following equipment upgrades or installations have you made to reduce your **pool's** energy usage? Please select all that apply. **[MULTIPLE RESPONSE]**

1. ENERGY STAR pool pump
2. Pool pump timer
3. Pool cover
00. Something else, please specify **[OPEN END]**
98. Not sure **[SKIP TO NEXT SECTION]**

**[ASK IF P1 = 1 THROUGH 00]**

P2. Did you receive rebates or incentives for reducing your pool's energy use?

1. Yes
2. No
98. Not sure **[SKIP TO NEXT SECTION]**

**[ASK IF P2=1]**

P2a. For which energy saving pool equipment did you receive rebates or incentives? Please select all that apply. **[MULTIPLE RESPONSE]**

1. **[SHOW IF P1=1]** Installed ENERGY STAR pool pump
2. **[SHOW IF P1=2]** Pool pump timer
3. **[SHOW IF P1=3]** Pool cover
00. **[SHOW IF P1=00]** **[INSERT RESPONSE TO P1\_00]**
4. I received no rebates for the above listed equipment

**[ASK IF P2a THROUGH 00=1]**

P2b. Please identify the organization(s) from which you received rebates or incentives? Please select all that apply. **[MULTIPLE RESPONSE]**

1. Marin Clean Energy
2. Pacific Gas & Electric Company
3. Bay Area Regional Energy Network
00. Something else, please specify **[OPEN END]**
8. Not sure

**[ASK IF P2=2]**

P2c. Please identify the main reason why you did not receive rebates or incentives?

1. Equipment did not qualify
2. Was in a hurry to purchase new equipment
3. Too much of a hassle to apply for the rebate
4. Did not know if one existed
0. Something else, please specify **[OPEN END]**

**[ASK IF EE1 = 11]**

**SOLAR**

SOL1. How many solar panels did you install? **[NUMERIC OPEN END, CHECKBOX FOR NOT SURE]**

**[ASK IF SOL1 > 0]**

SOL2. Did you receive a rebate or incentive for solar panels you installed in your property?

4. Yes



- 5. No
- 8. Not sure **[SKIP TO NEXT SECTION]**

**[ASK IF SOL2=1]**

SOL2a. Please identify the organization(s) from which you received rebates or incentives? Please select all that apply. **[MULTIPLE RESPONSE]**

- 1. Marin Clean Energy
- 2. Pacific Gas & Electric Company
- 3. Bay Area Regional Energy Network
- 00. Something else, please specify **[OPEN END]**
- 8. Not sure

**[ASK IF SOL2 =2]**

SOL2b. Please identify the main reason why you did not receive rebates.

- 1. Equipment did not qualify
- 2. Was in a hurry to purchase new equipment
- 3. Too much of a hassle to apply for the rebate
- 4. Did not know if one existed
- 00. Something else, please specify **[OPEN END]**

**[ASK IF EE1 = 00]**

OTHER

OT1. Please specify any other changes you made to reduce your property's energy usage. **[OPEN END]**

- 8. Not sure **[CHECKBOX; SKIP TO NEXT SECTION]**
- 9. None **[CHECKBOX; SKIP TO NEXT SECTION]**

**[ASK IF OT1 ≠ 8 OR 9 OR EE1\_0 = 1]**

OT2. How many of each **[SHOW OT1. RESPONSE OR EE1\_0 RESPONSE]** did you install? **[NUMERIC OPEN, CHECKBOX FOR NOT SURE]**

**[ASK IF OT1 ≠ 8 OR 9 OR EE1\_0 = 1]**

OT3. Did you receive a rebate or incentive for these other changes you made to reduce energy use?

- 1. Yes
- 2. No
- 8. Not sure **[SKIP TO NEXT SECTION]**

**[ASK IF OT3=1]**

OT3a. Please identify the organization(s) from which you received rebates or incentives? Please select all that apply. **[MULTIPLE RESPONSE]**

- 1. Marin Clean Energy
- 2. Pacific Gas & Electric Company
- 3. Bay Area Regional Energy Network
- 00. Something else, please specify **[OPEN END]**
- 8. Not sure

**[ASK IF OT3=2]**

OT3b. Please identify the main reason why you did not receive rebates or incentives?

- 1. Equipment did not qualify
- 2. Was in a hurry to purchase new equipment
- 3. Too much of a hassle to apply for the rebate

8. Did not know if one existed
0. Something else, please specify [OPEN END]

## BEHAVIORAL ACTIONS

[ASK B1 IF SF\_FL = 1]

- B1. What actions, if any, have you started to take or do more often to cut down your energy usage [READ “at <ADDRESS>” IF ADDRESS <> NULL; LEAVE BLANK IF ADDRESS = BLANK] since you first interacted with MCE? Please select all that apply. [MULTIPLE RESPONSE]
1. Close curtains and shades at night to protect against drafts during cooler months
  2. Open curtains and shades during the day to let in warming sunlight during cooler months
  3. Turn lights off when rooms are not in use
  4. Make sure the dishwasher is full before it is run
  5. Defrost freezers and refrigerators
  6. Use a toaster oven instead of a full-size oven
  7. Wash clothes in cold water
  8. Clean the lint screen in the dryer
  9. Check dryer vent to be sure it is not blocked
  10. Turn off electronics, such as a laptop, when they are not in use
  11. Clean or change filters of heating/cooling equipment
  00. Something else, please specify [OPEN END]
  98. Not sure [SKIP TO NEXT SECTION]
  99. None [SKIP TO NEXT SECTION]

[GENERATE REB\_FL=1 IF ANY L6=1, H20=1, HE2=1, AP4=1, BE7=1, WH4=1, FS7=1, R6=1, CA4=1, P2=1, SOL2=1, OT3=1, ELSE REB\_FL=0]

[ASK IF ANY EE1 = 1 THROUGH 11 OR 00]

## Level of Influence of Non-Resource Activity on Installation of EE Equipment

The following questions are about the level of influence of MCE and its energy savings programs on your decision to install or upgrade your equipment.

- IN1. On a scale of 0 to 10, where 0 is “Not at All Influential” and 10 is “Extremely Influential,” how influential was the [SHOW “Energy Audit” if VAUDIT\_FL=1, ELSE SHOW “MCE eNewsletter” if VeNews\_FL=1, ELSE SHOW “CoolCalifornia Challenge” if vCoolCA\_FL=1, ELSE SHOW Multifamily Program Technical Assessment and Program Communication” if VMFC\_FL=1] in your decision to [SHOW “install energy saving equipment” if EE1≠98 OR 99]?

MCE Activity	Not at All Influential 0	1	2	3	4	5	6	7	8	9	Extremely Influential 10	Not Sure
a. [ASK IF VAUDIT_FL=1] Energy Audit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. [ASK IF VeNews_FL=1] MCE’s Electronic Newsletter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. [ASK IF vCoolCA_FL=1] CoolCalifornia Challenge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

MCE Activity	Not at All Influential 0	1	2	3	4	5	6	7	8	9	Extremely Influential 10	Not Sure
d. [ASK IF VMFC_FL] Multifamily Program Technical Assistance / Program Communication	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**[ASK IF ANY EE1 = 1 THROUGH 11 OR 00]**

IN2. Now we would like to ask you about the importance of MCE's [SHOW "Energy Audit" if VAUDIT\_FL = 1 ELSE SHOW "eNewsletter" if VeNEWS\_FL = 1, ELSE SHOW "CoolCalifornia Challenge" if VCoolCA\_FL = 1, ELSE SHOW "Multifamily Technical Assistance and Program Communication" if "VMFC\_FL = 1] in your decision to install energy saving equipment compared to other factors that may have influenced your decision.

If you were given a TOTAL of 10 points to rate the importance of MCE's energy saving program in your decision to [SHOW "install energy saving equipment" if EE1≠ 98 OR 99] , and you had to divide those 10 points between (1) MCE's [SHOW "Energy Audit" if VAUDIT\_FL = 1 ELSE SHOW "eNewsletter" if VeNEWS\_FL = 1, ELSE SHOW "CoolCalifornia Challenge" if VCoolCA\_FL = 1, ELSE SHOW "Multifamily Technical Assistance and Program Communication" if "VMFC\_FL = 1] and (2) any OTHER factors, how many points would you give to the importance of your interaction with MCE? Your best estimate is fine. [NUMERIC 0-10] [NOTE TO PROGRAMMER: PLEASE ADD A CHECK FOR THE TOTAL OF A AND B/INFLUENCE SCORES BELOW. RESPONSES TO A AND B BELOW SHOULD SUM UP TO 10. IF THE TOTAL IS MORE OR LESS THAN 10, SHOW "YOUR SCORES FOR THE TWO OPTIONS BELOW SHOULD BE EQUAL TO 10. PLEASE REVIEW YOUR RESPONSES."]

Influencing Factors	Influence Score
a. MCE's [SHOW "Energy Audit" if VAUDIT_FL = 1 ELSE SHOW "eNewsletter" if VeNEWS_FL = 1, ELSE SHOW "CoolCalifornia Challenge" if VCoolCA_FL = 1, ELSE SHOW "Multifamily Technical Assistance and Program Communication" if "VMFC_FL = 1]	
b. Other Influencing Factors	

**[ASK IF IN2b > 2]**

IN20. Please list up to three other factors that influenced your decision to install energy saving equipment. [OPEN END – ALLOW FOR UP TO THREE RESPONSES]

**[ASK IF ANY EE1 = 1 THROUGH 11 OR 00]**

IN3. Now please think about the action you would have taken with regard to installing energy saving equipment that helps save energy if you hadn't interacted with MCE.

Using a scale from 0 to 10, where 0 is "Not at all likely" and 10 is "Extremely likely," if you had not interacted with MCE through its [SHOW "Energy Audit" if VAUDIT\_FL = 1 ELSE SHOW "eNewsletter" if VeNEWS\_FL = 1, ELSE SHOW "CoolCalifornia Challenge" if VCoolCA\_FL = 1, ELSE SHOW "Multifamily Technical Assistance and Program Communication" if "VMFC\_FL = 1], what is the likelihood that you would have installed EXACTLY the same ENERGY SAVING equipment either at the same time or later?

Not at All Likely 0	1	2	3	4	5	6	7	8	9	Extremely Likely 10	Not applicable	Not sure
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**[ASK IF IN3>0]**

IN4. Using the same scale from 0 to 10, if you had NOT interacted with MCE through its [SHOW "Energy Audit" if VAUDIT\_FL = 1 ELSE SHOW "eNewsletter" if VeNEWS\_FL = 1, ELSE SHOW "CoolCalifornia Challenge" if VCoolCA\_FL = 1, ELSE SHOW "Multifamily Technical Assistance and Program Communication" if "VMFC\_FL = 1], what is the likelihood that you would have installed exactly the same energy saving equipment within 12 months of when you did it?

Not at All Likely 0	1	2	3	4	5	6	7	8	9	Extremely Likely 10	Not applicable	Not sure
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**[ASK IF IN4>0]**

IN5. When do you think you would have installed the energy saving equipment had you not interacted with MCE through its [SHOW "Energy Audit" if VAUDIT\_FL = 1 ELSE SHOW "eNewsletter" if VeNEWS\_FL = 1, ELSE SHOW "CoolCalifornia Challenge" if VCoolCA\_FL = 1, ELSE SHOW "Multifamily Technical Assistance and Program Communication" if "VMFC\_FL = 1]? Please answer relative to the date that you actually installed the energy saving equipment:

0. At the same time
1. Within 6 months
2. More than 6 months up to 1 year later
3. More than 1 year up to 2 years later
4. More than 2 years up to 3 years later
5. More than 3 years up to 4 years later
6. More than 4 years later
8. Not sure

**[ASK IF IN5=6]**

IN6. Why do you think it would have been over 4 years later? [OPEN END]

[IF IN1 > 8 AND IN3 > 8, THEN ASK IN7]

IN7. Some of your answers suggest that the [SHOW "Energy Audit" if VAUDIT\_FL=1, ELSE SHOW "MCE eNewsletter" if VeNews\_FL=1, ELSE SHOW "CoolCalifornia Challenge" if vCoolCA\_FL=1, ELSE SHOW Multifamily Program Technical Assessment and Program Communication" if VMFC\_FL=1] was very

important in your decision to purchase energy efficient equipment while others suggest that it was not. When asked how influential MCE's program was in your decision to install energy efficient equipment, you indicated it was very influential. However, when asked how likely you would have been to install the energy efficient equipment without your interaction with MCE, you said you would have been very likely to.

Can you clarify? On a scale of 0 to 10, where 0 is "Not at All Influential" and 10 is "Extremely Influential," how influential was the [SHOW "Energy Audit" if VAUDIT\_FL=1, ELSE SHOW "MCE eNewsletter" if VeNews\_FL=1, ELSE SHOW "CoolCalifornia Challenge" if vCoolCA\_FL=1, ELSE SHOW Multifamily Program Technical Assessment and Program Communication" if VMFC\_FL=1] in your decision to install energy saving equipment?

MCE Activity	Not at All Influential 0	1	2	3	4	5	6	7	8	9	Extremely Influential 10	Not Sure
a. [ASK IF VAUDIT_FL=1] Energy Audit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. [ASK IF VeNews_FL=1] MCE's Electronic Newsletter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. [ASK IF vCoolCA_FL=1] CoolCalifornia Challenge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. [ASK IF VMFC_FL] Multifamily Program Technical Assistance / Program Communication	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

[IF IN1 > 8 AND IN3 > 8, THEN ASK IN8]

IN8. Again, using a scale from 0 to 10, where 0 is "Not at all likely" and 10 is "Extremely likely," if you hadn't interacted with MCE through its [SHOW "Energy Audit" if VAUDIT\_FL = 1 ELSE SHOW "eNewsletter" if VeNEWS\_FL = 1, ELSE SHOW "CoolCalifornia Challenge" if vCoolCA\_FL = 1, ELSE SHOW "Multifamily Technical Assistance and Program Communication" if "VMFC\_FL = 1], what is the likelihood that you would have installed EXACTLY the same ENERGY SAVING equipment either at the same time or later?

Not at All Likely 0	1	2	3	4	5	6	7	8	9	Extremely Likely 10	Not applicable	Not sure
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

[IF IN1 < 3 AND IN3 < 3, THEN ASK IN9 AND IN10]

IN9. Some of your answers suggest that the [SHOW "Energy Audit" if VAUDIT\_FL=1, ELSE SHOW "MCE eNewsletter" if VeNews\_FL=1, ELSE SHOW "CoolCalifornia Challenge" if vCoolCA\_FL=1, ELSE SHOW Multifamily Program Technical Assessment and Program Communication" if VMFC\_FL=1] was very important in your decision to purchase energy efficient equipment while others suggest that it was not. When asked how influential MCE's program was in your decision to install energy efficient equipment, you indicated it was NOT very influential. However, when asked how likely you would have been to install the energy efficient equipment without your interaction with MCE, you said you would NOT have been very likely to.

Can you clarify? On a scale of 0 to 10, where 0 is “Not at All Influential” and 10 is “Extremely Influential,” how influential was the [SHOW “Energy Audit” if VAUDIT\_FL=1, ELSE SHOW “MCE eNewsletter” if VeNews\_FL=1, ELSE SHOW “CoolCalifornia Challenge” if vCoolCA\_FL=1, ELSE SHOW Multifamily Program Technical Assessment and Program Communication” if VMFC\_FL=1] in your decision to install energy saving equipment?

MCE Activity	Not at All Influential 0	1	2	3	4	5	6	7	8	9	Extremely Influential 10	Not Sure
a. [ASK IF VAUDIT_FL=1] Energy Audit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. [ASK IF VeNews_FL=1] MCE’s Electronic Newsletter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. [ASK IF VCoolCA_FL=1] CoolCalifornia Challenge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. [ASK IF VMFC_FL] Multifamily Program Technical Assistance / Program Communication	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

IN10. Again, using a scale from 0 to 10, where 0 is “Not at all likely” and 10 is “Extremely likely,” if you hadn’t interacted with MCE through its [SHOW “Energy Audit” if VAUDIT\_FL = 1 ELSE SHOW “eNewsletter” if VeNEWS\_FL = 1, ELSE SHOW “CoolCalifornia Challenge” if VCoolCA\_FL = 1, ELSE SHOW “Multifamily Technical Assistance and Program Communication” if “VMFC\_FL = 1], what is the likelihood that you would have installed EXACTLY the same ENERGY SAVING equipment either at the same time or later?

Not at All Likely 0	1	2	3	4	5	6	7	8	9	Extremely Likely 10	Not applicable	Not sure
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

[ASK IF ANY B1 ≠ 98 OR 99]

Level of Influence of Non-Resource Activity on EE Actions

[DISPLAY SENTENCE BELOW ON SAME PAGE AS IN1a]

The following questions are about the level of influence of MCE and its energy savings programs on your decision to change your behavior to reduce your energy use.

[ASK IN1a – IN6a IF SF\_FL = 1]

IN1a. On a scale of 0 to 10, where 0 is “Not at All Influential” and 10 is “Extremely Influential,” how influential was the [SHOW “Energy Audit” if VAUDIT\_FL=1, ELSE SHOW “MCE eNewsletter” if VeNews\_FL=1, ELSE SHOW “CoolCalifornia Challenge” if vCoolCA\_FL=1, ELSE SHOW Multifamily Program Technical Assessment and Program Communication” if VMFC\_FL=1] in your decision to [SHOW “carry out energy savings actions” if B1≠98 OR 99]?

MCE Activity	Not at All Influential 0	1	2	3	4	5	6	7	8	9	Extremely Influential 10	Not sure
a. [ASK IF VAUDIT_FL=1] Energy Audit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. [ASK IF VeNews_FL=1] MCE's Electronic Newsletter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. [ASK IF VCoolCA_FL=1] CoolCalifornia Challenge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. [ASK IF VMFC_FL] Multifamily Program Technical Assistance / Program Communication	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**[ASK IF ANY B1 = 1 THROUGH 11 OR 00]**

IN2a. Now we would like to ask you about the importance of MCE's [SHOW "Energy Audit" if VAUDIT\_FL = 1 ELSE SHOW "eNewsletter" if VeNEWS\_FL = 1, ELSE SHOW "CoolCalifornia Challenge" if VCoolCA\_FL = 1, ELSE SHOW "Multifamily Technical Assistance and Program Communication" if "VMFC\_FL = 1] in your decision to carry out energy saving actions compared to other factors that may have influenced your decision.

If you were given a TOTAL of 10 points to reflect the importance of MCE's energy saving related activity in your decision to [SHOW "carry out energy saving actions" if B1≠ 98 OR 99], and you had to divide those 10 points between (1) MCE's [SHOW "Energy Audit" if VAUDIT\_FL = 1 ELSE SHOW "eNewsletter" if VeNEWS\_FL = 1, ELSE SHOW "CoolCalifornia Challenge" if VCoolCA\_FL = 1, ELSE SHOW "Multifamily Technical Assistance and Program Communication" if "VMFC\_FL = 1] and (2) any OTHER factors, how many points would you give to the importance of your interaction with MCE? Your best estimate is fine. [NUMERIC 0-10] [NOTE TO PROGRAMMER: PLEASE ADD A CHECK FOR THE TOTAL OF A AND B/INFLUENCE SCORES BELOW. RESPONSES TO A AND B BELOW SHOULD SUM UP TO 10. IF THE TOTAL IS MORE OR LESS THAN 10, SHOW "YOUR SCORES FOR THE TWO OPTIONS BELOW SHOULD BE EQUAL TO 10. PLEASE REVIEW YOUR RESPONSES."]

Influencing Factors	Influence Score
a. MCE's [SHOW "Energy Audit" if VAUDIT_FL = 1 ELSE SHOW "eNewsletter" if VeNEWS_FL = 1, ELSE SHOW "CoolCalifornia Challenge" if VCoolCA_FL = 1, ELSE SHOW "Multifamily Technical Assistance and Program Communication" if "VMFC_FL = 1]	
b. Other Influencing Factors	

**[ASK IF IN2ab > 2]**

IN20a. Please list up to three other influencing factors on your decision to take energy saving actions. [OPEN END – ALLOW FOR UP TO THREE RESPONSES]



**[ASK IF ANY B1 = 1 THROUGH 11 OR 00]**

IN3a. Now please think about the energy saving action(s) you would have taken if you had not interacted with MCE.

Using a scale from 0 to 10, where 0 is “Not at all likely” and 10 is “Extremely likely,” if you had not interacted with MCE through its [SHOW “Energy Audit” if VAUDIT\_FL = 1 ELSE SHOW “eNewsletter” if VeNEWS\_FL = 1, ELSE SHOW “CoolCalifornia Challenge” if VCoolCA\_FL = 1, ELSE SHOW “Multifamily Technical Assistance and Program Communication” if “VMFC\_FL = 1], what is the likelihood that you would have taken the exact same energy saving action(s) either at the same time or later?

Not at All Likely 0	1	2	3	4	5	6	7	8	9	Extremely Likely 10	Not applicable	Not sure
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**[ASK IF IN3a>0]**

IN4a. Using the same scale from 0 to 10, if you had NOT interacted with MCE through its [SHOW “Energy Audit” if VAUDIT\_FL = 1 ELSE SHOW “eNewsletter” if VeNEWS\_FL = 1, ELSE SHOW “CoolCalifornia Challenge” if VCoolCA\_FL = 1, ELSE SHOW “Multifamily Technical Assistance and Program Communication” if “VMFC\_FL = 1], what is the likelihood that you would have taken the same energy saving action(s) **within 12 months of when you did it?**

Not at All Likely 0	1	2	3	4	5	6	7	8	9	Extremely Likely 10	Not applicable	Not sure
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**[ASK IF IN4a>0]**

IN5a. When do you think you would have taken the energy saving action(s) had you not interacted with MCE through its [SHOW “Energy Audit” if VAUDIT\_FL = 1 ELSE SHOW “eNewsletter” if VeNEWS\_FL = 1, ELSE SHOW “CoolCalifornia Challenge” if VCoolCA\_FL = 1, ELSE SHOW “Multifamily Technical Assistance and Program Communication” if “VMFC\_FL = 1]? Please answer relative to the date that you **started taking the energy saving action(s):**

0. At the same time
1. Within 6 months
2. More than 6 months up to 1 year later
3. More than 1 year up to 2 years later
4. More than 2 years up to 3 years later
5. More than 3 years up to 4 years later
6. More than 4 years later
8. Not sure

**[ASK IF IN5a=6]**

IN6a. Why do you think it would have been over 4 years later? **[OPEN END]**

**Awareness of EE PA Resource Programs****[ASK IF REB\_FL=0]**

AW1a. Prior to this study, were you aware of any energy saving program(s) offered by California energy service providers (like Pacific Gas & Electric Company and Bay Area Regional Energy Network) that



offer rebates or incentives for installation of equipment such as energy saving lighting, heating or cooling equipment, water saving equipment, or insulation and air sealing?

1. Yes
2. No

**[ASK IF REB\_FL=1]**

AW1b. You mentioned that you received rebates and/or incentives from California energy service providers or utilities for some of the energy equipment you had installed.

Are you aware of any other energy saving program(s) offered by California energy service providers or utilities that offer rebates or incentives for installation of energy efficient equipment?

1. Yes
2. No

**[ASK IF AW1a OR AW1b=1]**

AW2. What energy saving program(s) have you heard of? **[OPEN END] [ADD CHECKBOX FOR PREFER NOT TO ANSWER]**

☐ Prefer not to answer

**[ASK IF AW1a OR AW1b=1]**

AW2a. Where did you first hear about the energy saving program(s)?

1. MCE eNewsletter
2. Energy Bill
3. Word-of-Mouth (i.e., Friend, Family, Colleague)
4. Contractor
5. Social Media (e.g., Facebook, Twitter, Instagram)
6. Energy Provider or Utility Website
0. Something else, please specify **[OPEN END]**
8. Not sure

**[ASK IF REB\_FL=1]**

AW3. Thinking about the energy saving upgrades you completed, how did you learn about the rebates or incentives offered for upgrading or installing equipment? **[OPEN END] [ADD CHECKBOX FOR PREFER NOT TO ANSWER]**

☐ Prefer not to answer

**Drivers and Barriers to Participation in PA EE Resource Programs**

**[DISPLAY SENTENCE BELOW ON SAME PAGE AS BD1]**

Next, we'd like to learn about your motivations for installing energy saving equipment or any challenges you may have encountered in doing so.

[ASK IF REB\_FL=0]

BD3. What would encourage you to install or upgrade energy saving equipment through your utility or energy service provider? [OPEN END, CHECKBOX FOR NOT SURE]

[ASK IF ANY VAUDIT\_FL, VeNews\_FL, VCoolCA\_FL, VMFC\_FL = 1]

## MCE Program Satisfaction and Improvement

PS1. On a scale from 0 to 10, where 0 is “Not at all Satisfied” and 10 is “Highly Satisfied,” how satisfied are you with the energy saving information you received through the following MCE energy saving related activities?

MCE Activity	Not at All Satisfied 0	1	2	3	4	5	6	7	8	9	Highly Satisfied 10
a. [ASK IF VAUDIT_FL=1] Energy Audit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. [ASK IF VeNews_FL=1] MCE's Electronic Newsletter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. [ASK IF VCoolCA_FL=1] CoolCalifornia Challenge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. [ASK IF VMFC_FL] Multifamily Program	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

[ASK IF PS1 = 0 THROUGH 10]

PS1a. What is the reason for this rating? [OPEN END]

☐ Prefer not to answer

PS2. On the same 10-point scale, how satisfied are you with the following MCE energy saving related activities overall?

MCE Activity	Not at All Satisfied 0	1	2	3	4	5	6	7	8	9	Highly Satisfied 10
a. [ASK IF VAUDIT_FL=1] Energy Audit that is part of the Small Commercial Program	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. [ASK IF VeNews_FL=1] MCE's Electronic Newsletter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. [ASK IF VCoolCA_FL=1] CoolCalifornia Challenge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. [ASK IF VMFC_FL] Multifamily Program	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

[ASK IF PS2 = 0 THROUGH 10]

PS2a. What is the reason for this rating? [OPEN END]

☐ Prefer not to answer

PS3. Do you have any suggestions to improve MCE's energy efficiency program activities? [OPEN END]

7. No

8. Not sure [CHECKBOX]

9. Prefer not to answer [CHECKBOX]

[ASK IF MF\_FL=1 OR SF\_FL=1]

Demographics

[ASK IF MF\_FL=1]

D1a. How many housing units are in your building?

1. 1
2. 2-3
3. 4-9
4. 10 to 50
5. 51 – 100
6. 101 or more
8. Not sure

[ASK D2, D3, AND D3a IF SF\_FL = 1]

D2. How long have you lived in this residence?

1. Less than 1 year
2. 1-3 years
3. 4-10 years
4. 11-20 years
5. More than 20 years

D3. Including yourself, how many people currently live in your residence year-round? [NUMERIC OPEN END 0-10]

[ASK IF D3>1]

D3a. How many people under the age of 18 live in your residence? [NUMERIC OPEN END 0-D3 QUANTITY]

D4. Approximately when was your [READ “residence” IF SF\_FL = 1] ELSE READ “building” first built?

1. Before 1950
2. 1950-1959
3. 1960-1969
4. 1970-1979
5. 1980-1989
6. 1990-1999
7. 2000-2005
8. 2006-2009
98. 2010 or later
99. Not sure

D11. Which of the following best describes your ethnicity? [MULTIPLE RESPONSE; RESPONSE NOT REQUIRED]

1. White or Caucasian
14. Hispanic, Latino, or Spanish
2. Black or African American
3. American Indian or Alaskan Native
4. Chinese
5. Korean

6. Vietnamese
7. Japanese
8. Filipino
9. Native Hawaiian
10. Guamanian or Chamorro
11. Samoan
12. Other Asian
13. Other Pacific islander
00. Something else, please specify [OPEN END]
99. Prefer not to answer

**[ASK D12 AND D12a IF SF\_FL = 1]**

D12. What was your annual household income from all sources in 2016, before taxes?

1. Less than \$20,000 per year
2. \$20,000 to \$29,999
3. \$30,000 to \$39,999
4. \$40,000 to \$49,999
5. \$50,000 to \$59,999
6. \$60,000 to \$74,999
7. \$75,000 to \$99,999
8. \$100,000 to \$149,999
9. \$150,000 to \$199,999
10. \$200,000 or more
99. Prefer not to answer

**[ASK IF D12=1]**

D12a. Is it... [RESPONSE NOT REQUIRED]

1. Less than \$10,000, or
2. \$10,000 to \$15,000, or
3. \$15,000 to \$20,000
99. Prefer not to answer

**[ASK ALL]**

D13. Which utilities or energy efficiency service providers currently provide your property's electric and/or natural gas services? [MULTIPLE RESPONSE]

1. PG&E
2. MCE
0. Something else, please specify [OPEN END]
8. Not sure

**[ASK IF COM\_FL=1 or MF\_FL = 1]**

**Firmographics**

**[DISPLAY SENTENCE BELOW ON SAME PAGE AS F1]**

The survey is almost done. There are just a few general questions about your company.

F1. Which of the following best describes the ownership of this property?

1. My company owns and occupies this property
2. My company owns this property, but it is rented to someone else
3. My company rents this property
8. Not sure
9. Prefer not to answer

F2. What is the primary heating fuel type for the property?

1. Gas
2. Electric
0. Something else, please specify **[OPEN END]**
8. Not sure
9. Prefer not to answer

F3. What is the primary water heating fuel type for the property?

1. Gas
2. Electric
0. Something else, please specify **[OPEN END]**
8. Not sure
9. Prefer not to answer

**[ASK F4 IF COM\_FL = 1]**

F4. How many years old is this property? **[NUMERIC OPEN END, 0 TO 150]**

8. Not sure **[CHECKBOX]**
9. Prefer not to answer **[CHECKBOX]**

**[ASK IF F4=8]**

F4a. Do you know the approximate age? Would you say it is...?

1. Less than 2 years
2. 2-4 years
3. 5-9 years
4. 10-19 years
5. 20-29 years
6. 30 years or more
8. Not sure
9. Prefer not to answer

F5. How many employees, full plus part-time, are employed at this property? **[NUMERIC OPEN END, 0 TO 2000]**

8. Not sure **[CHECKBOX]**
9. Prefer not to answer **[CHECKBOX]**

**[ASK IF F5=8]**

F5a. Do you know the approximate number of employees? Would you say it is...?

1. Less than 10
2. 10-49
3. 50-99
4. 100-249
5. 250-499
6. 500 or more

- 8. Not sure
- 9. Prefer not to answer

### Closing

- C1. Should we have any questions or need clarification regarding any of your responses in this survey, would it be okay to contact you again in the future?
- 1. Yes
  - 2. No

[ASK IF C1=1, ELSE THANK AND CONCLUDE SURVEY]

Thank you!

- C2. Would you be the best person to contact?
- 1. Yes
  - 2. No, please specify the full name of the person to contact and their contact information. [OPEN  
END]

[ASK IF C2 = 1]

- C3. What is the best phone number and email address to contact you, please specify in the text box below.

Phone Number:	
Email:	

*Those are all of our questions. We appreciate your time and participation. On behalf of the California Public Utilities Commission, Thank you!*

## Appendix D. Topline of Survey Results

### Screener and Participation Verification

S1. Our records indicate that sometime since 2016, you participated in or received information about saving energy from the following energy efficiency program or activity offered by Marin Clean Energy. Is this correct?

Response	Total
Total Respondents	336
	100%
eNewsletter	290
	86%
Small Commercial Program	22
	7%
CoolCA Challenge	20
	6%
Multifamily Program	4
	1%

NE0a. To the best of your recollection, what year did you sign up to start receiving eNewsletters from Marin Clean Energy?

Response	Total
Total Respondents	290
	100%
Before 2016	90
	31%
2016	62
	21%
2017	34
	12%
2018	30
	10%
Not sure	74
	26%

NE0b. To the best of your recollection, what year did you sign up to participate in the CoolCA Challenge through Marin Clean Energy's "My Energy Tool" online portal? [NOTE TO RESPONDENT: "(MCE's My Energy Tool was a web-based energy assessment tool that MCE used to help homeowners save money, reduce greenhouse gas emissions and increase home comfort.)"]

Response	Total
Total Respondents	20
	100%
2016	7
	35%

Response	Total
2015	2
	10%
Not sure	11
	55%

### Energy Savings Actions

Next, we would like to learn about any actions you may have taken toward saving energy, either on your own or by participating in energy saving programs.

EE0. Since your interaction with MCE [READ: “through your energy audit” IF VAUDIT\_FL = 1; READ: “through its newsletter” IF VeNews\_FL = 1; READ “through the CoolCA Challenge” IF VCoolCA\_FL =1; READ: “through the multifamily technical assistance and program communication” IF VMCF\_FL = 1], have you completed any equipment upgrades to your property [READ: “at <ADDRESS>” if ADDRESS <> NULL; LEAVE BLANK IF ADDRESS = NULL] to help save energy?

Response	Total
<b>Total Respondents</b>	<b>336</b>
	<b>100%</b>
Yes	167
	50%
No	145
	43%
Not sure	24
	7%

EE2. [READ: “With regard to your property located at <ADDRESS>,” if ADDRESS <> NULL; ELSE READ: “With regard to your property,” IF ADDRESS = NULL], how would you describe the building type? Is it a... (Please select one response option below that best describes your property).

Response	Total
<b>Total Respondents</b>	<b>336</b>
	<b>100%</b>
Detached single-family home	232
	69%
Multifamily apartment/condo (with 4 units or more in building)	37
	11%
Commercial facility	32
	10%
Multifamily apartment/condo (with 1-3 units in building)	19
	6%
Attached single-family home (row house)	13
	4%
Mobile/manufactured home	3



Response	Total
	1%

EE2a. Which of the following best describes your property type?

Response	Total
<b>Total Respondents</b>	<b>32</b>
	<b>100%</b>
Office	10
	31%
Manufacturing	4
	13%
Retail Strip Mall	3
	9%
Convenience Store	2
	6%
Religious	2
	6%
Restaurant	2
	6%
Retail Department Store	2
	6%
Warehouse/Distribution	2
	6%
Healthcare Clinic	1
	3%
Lodging (e.g., hotel, motel)	1
	3%
Assisted Living	0
	0%
Daycare or Pre-School	0
	0%
Elementary School	0
	0%
High School	0
	0%
College	0
	0%
Garage (A parking garage that is open for part of the day such as during business hours)	0
	0%
All day parking garage (A parking garage that is open 24 hours a day everyday)	0
	0%

Response	Total
Grocery	0
	0%
Hospital	0
	0%
Movie Theater	0
	0%
Service (e.g., hair salon/barber shop, spa)	0
	0%
Other	3
	9%

EE1. What types of energy saving equipment did you upgrade or install to reduce your property's **energy** usage since 2016? [MULTIPLE RESPONSE, ROTATE RESPONSE OPTIONS 1 THROUGH 11]

Response	Total
<b>Total Respondents</b>	<b>167</b>
	<b>100%</b>
Lighting Equipment or Lighting Controls	117
	70%
ENERGY STAR appliances	100
	60%
Energy saving consumer electronics and office equipment	70
	42%
Heating, cooling and ventilation equipment or controls	65
	39%
Installed solar panels	51
	31%
Building shell equipment including insulation (e.g., new insulation for attic, crawl space, basement, etc.) and air sealing	42
	25%
Domestic water heating equipment and controls	40
	24%
Pool equipment (e.g., efficient pool pump, pool pump timer, pool cover)	14
	8%
Electric Vehicle/EV Equipment	10
	6%
Windows and Doors	8
	5%
Solar Battery Storage/Equipment	5
	3%
ENERGY STAR kitchen and food service equipment	2
	1%

Response	Total
Refrigeration equipment and controls	0
	0%
Compressed air equipment	0
	0%
Other	7
	4%
None	2
	1%
Not sure	1
	1%

## LIGHTING

Next, we would like to learn more about the energy saving upgrades you have completed at your property.

L1. Which of the following type(s) of **lighting** equipment have you installed or upgraded at your property? Please select all that apply. **[MULTIPLE RESPONSE] [RANDOMIZE RESPONSE OPTIONS 2-4]**

Response	Total
<b>Total Respondents</b>	<b>65</b>
	<b>100%</b>
Lighting controls (such as occupancy sensors, timers, photocells, bi-level controls)	24
	37%
CFL bulbs or fixtures	12
	18%
LED lighting or fixtures	62
	95%
Linear fluorescent lighting and fixtures	5
	8%

L1a. For the CFLs that you installed, which type(s) did you install? Please select all that apply. **[MULTIPLE RESPONSE]**

Response	Total
<b>Total Respondents</b>	<b>12</b>
	<b>100%</b>
Standard screw-based CFLs	10
	83%
Pin-based CFL fixtures	0
	0%
Other	1
	8%
Not Sure	1
	8%

L1b. For the LEDs that you installed, which type(s) did you install? Please select all that apply. **[MULTIPLE RESPONSE]**

Response	Total
<b>Total Respondents</b>	<b>62</b>
	<b>100%</b>
Standard screw-based LEDs	47
	76%
LED fixtures (canned lighting, track lighting)	29
	47%
Linear or tube LEDs	23
	37%
LED flood lights	17
	27%
Specialty LEDs (globe, candelabra, reflector)	15
	24%
Exterior LEDs (wall-pack, flood, canopy, pole mounted, bollards)	3
	5%
High bay LED fixtures	1
	2%
LED Exit Signs	0
	0%
LED Open Signs	0
	0%
Other	2
	3%
Not Sure	3
	5%

L1c. For the linear fluorescents that you installed, which type(s) did you install? Please select all that apply. **[MULTIPLE RESPONSE]**

Response	Total
<b>Total Respondents</b>	<b>5</b>
	<b>100%</b>
Linear fluorescent T8 (1" diameter) lamps	3
	60%
Linear fluorescent T5 (5/8" diameter) lamps	2
	40%
Removed linear fluorescent lamps from existing fixtures (Delamping)	0
	0%
Other	0

Response	Total
	0%
Not sure	1
	20%

L2. How many of each lighting type did you install? Your best estimate is fine. [NUMERIC OPEN END 0-999, CHECKBOX FOR NOT SURE]

Response	Average Quantity
<b>Total Respondents</b>	<b>50</b>
High Bay LED Fixtures	20
LED Pole Mounted	18
Linear Fluorescent T5 lamps	15
Standard CFLs	15
LED Canned Light Fixtures	14
Standard LEDs	13
LED Track Light Fixtures	10
LED Candelabra	9
LED Globe	9
LED Reflector	9
LED Flood Lights	8
Linear or tube LED lamps	7
LED Wall Pack	6
Linear Fluorescent T8 lamps	4
Pin-Based CFLs	0
LED Canopy	0
LED Bollards	0
LED Exit Signs	0
LED Open Signs	0
Removed linear fluorescent lamps	0
Other	0

L2a. In which areas at your property did you install the lighting equipment? Please select all that apply. [SPLIT L2aa – L2au ONTO 2 PAGES IF TOO LONG, EACH L2aa - L2ua IS MULTIPLE RESPONSE]

u. Standard CFLs

Response	Total
<b>Total Respondents</b>	<b>10</b>
	<b>100%</b>
Interior	8
	80%
Interior – Common Area	0

Response	Total
	0%
Interior – Apartment Unit	1
	10%
Exterior	4
	40%
Not Sure	1
	10%

v. Pin-Based CFLs

\*There were no respondents for this question

w. Standard LEDs

Response	Total
<b>Total Respondents</b>	<b>47</b>
	<b>100%</b>
Interior	42
	89%
Interior – Common Area	1
	2%
Interior – Apartment Unit	4
	9%
Exterior	23
	49%
Not Sure	0
	0%

x. LED Globe

Response	Total
<b>Total Respondents</b>	<b>15</b>
	<b>100%</b>
Interior	8
	53%
Interior – Common Area	1
	7%
Interior – Apartment Unit	2
	13%
Exterior	0
	0%
Not Sure	4
	27%

y. LED Candelabra

Response	Total
<b>Total Respondents</b>	<b>15</b>
	<b>100%</b>
Interior	10
	67%
Exterior	3
	20%
Interior – Apartment Unit	1
	7%
Interior – Common Area	0
	0%
Not Sure	3
	20%

z. LED Reflector

Response	Total
<b>Total Respondents</b>	<b>15</b>
	<b>100%</b>
Interior	4
	27%
Exterior	1
	7%
Interior – Apartment Unit	1
	7%
Interior – Common Area	0
	0%
Not Sure	9
	60%

aa.LED Flood Lights

Response	Total
<b>Total Respondents</b>	<b>20</b>
	<b>100%</b>
Interior	5
	25%
Interior – Common Area	0
	0%
Interior – Apartment Unit	0
	0%

Response	Total
Exterior	13
	65%
Not Sure	3
	15%

bb.LED Canned Light Fixtures

Response	Total
<b>Total Respondents</b>	<b>29</b>
	<b>100%</b>
Interior	23
	79%
Interior – Common Area	1
	3%
Interior – Apartment Unit	0
	0%
Exterior	3
	10%
Not Sure	5
	17%

cc.LED Track Light Fixtures

Response	Total
<b>Total Respondents</b>	<b>29</b>
	<b>100%</b>
Interior	21
	72%
Interior – Common Area	1
	3%
Interior – Apartment Unit	0
	0%
Exterior	1
	3%
Not Sure	7
	24%

dd.LED Wall Pack

Response	Total
<b>Total Respondents</b>	<b>3</b>
	<b>100%</b>



Response	Total
Interior	0
	0%
Interior – Common Area	0
	0%
Interior – Apartment Unit	0
	0%
Exterior	1
	33%
Not Sure	2
	67%

ee.LED Canopy

Response	Total
<b>Total Respondents</b>	<b>3</b>
	<b>100%</b>
Interior	0
	0%
Interior – Common Area	0
	0%
Interior – Apartment Unit	0
	0%
Exterior	0
	0%
Not Sure	3
	100%

ff. LED Pole Mounted

Response	Total
<b>Total Respondents</b>	<b>3</b>
	<b>100%</b>
Interior	0
	0%
Interior – Common Area	0
	0%
Interior – Apartment Unit	0
	0%
Exterior	3
	100%
Not Sure	0

Response	Total
	0%

gg. LED Bollards

Response	Total
<b>Total Respondents</b>	<b>3</b>
	<b>100%</b>
Interior	0
	0%
Interior – Common Area	0
	0%
Interior – Apartment Unit	0
	0%
Exterior	0
	0%
Not Sure	3
	100%

hh. LED Exit Signs

\*There were no respondents for this question

ii. LED Open Signs

\*There were no respondents for this question

jj. High Bay LED Fixtures

Response	Total
<b>Total Respondents</b>	<b>1</b>
	<b>100%</b>
Interior	1
	100%
Interior – Common Area	0
	0%
Interior – Apartment Unit	0
	0%
Exterior	0
	0%
Not Sure	0
	0%

kk. Linear or tube LED lamps

Response	Total
<b>Total Respondents</b>	<b>23</b>
	<b>100%</b>
Interior	19
	83%
Interior – Common Area	2
	9%
Interior – Apartment Unit	1
	4%
Exterior	0
	0%
Not Sure	1
	4%

## II. Linear Fluorescent T8 lamps

Response	Total
<b>Total Respondents</b>	<b>3</b>
	<b>100%</b>
Interior	3
	100%
Interior – Common Area	0
	0%
Interior – Apartment Unit	0
	0%
Exterior	0
	0%
Not Sure	0
	0%

## mm. Linear Fluorescent T5 lamps

Response	Total
<b>Total Respondents</b>	<b>2</b>
	<b>100%</b>
Interior	2
	100%
Interior – Common Area	0
	0%
Interior – Apartment Unit	0
	0%
Exterior	0

Response	Total
	0%
Not Sure	0
	0%

nn. Removed linear fluorescent lamps

*\*There were no respondents for this question*

u. [SHOW IF ANY L1, L1a, L1b, or L1c=00] [INSERT RESPONSES FROM L1=0, L1a=0, L1b=0, and/or L1c=0] (If more than one type, please provide quantity for each type of lighting equipment installed)

*\*There were no respondents for this question*

L3. What were the main types of lighting that you **removed** and replaced with new lighting? Please select up to three. [MULTIPLE RESPONSE UP TO THREE]

Response	Total
<b>Total Respondents</b>	<b>65</b>
	<b>100%</b>
Incandescent bulbs	48
	74%
CFLs bulbs	28
	43%
Halogen bulbs	24
	37%
Linear fluorescent T8 fixtures	13
	20%
Linear fluorescent T12 fixtures	8
	12%
Standard LED bulbs	3
	5%
Specialty LED bulbs	2
	3%
High-bay metal halide fixtures	1
	2%
LED tubes/linear LEDs	0
	0%
Not sure	2
	3%

L4. What type of Linear Fluorescent T8 lamps did you install? [MULTIPLE RESPONSE]

Response	Total
<b>Total Respondents</b>	<b>3</b>
	<b>100%</b>
Standard	1

Response	Total
	33%
High Performance	1
	33%
Reduced Wattage	0
	0%
Other	0
	0%
Not sure	1
	33%

L5. Please identify the lighting control type installed for each lighting upgrade within your property. **[MULTIPLE RESPONSE, SPLIT L5a – L5t ONTO 2 PAGES IF TOO LONG]**

u. Standard CFLs

Response	Total
<b>Total Respondents</b>	<b>2</b>
	<b>100%</b>
Occupancy	1
	50%
Photocell	0
	0%
Timer	0
	0%
Bi-Level Switching	0
	0%
None	1
	50%
Other	0
	0%

v. Pin-Based CFLs

*\*There were no respondents for this question*

w. Standard LEDs

Response	Total
<b>Total Respondents</b>	<b>20</b>
	<b>100%</b>
Occupancy	9
	45%
Photocell	0
	0%
Timer	9

Response	Total
	45%
Bi-Level Switching	0
	0%
None	2
	10%
Other	6
	30%

x. LED Globe

Response	Total
<b>Total Respondents</b>	<b>9</b>
	<b>100%</b>
Occupancy	0
	0%
Photocell	1
	11%
Timer	0
	0%
Bi-Level Switching	0
	0%
None	7
	78%
Other	1
	11%

y. LED Candelabra

Response	Total
<b>Total Respondents</b>	<b>9</b>
	<b>100%</b>
Occupancy	0
	0%
Photocell	0
	0%
Timer	1
	11%
Bi-Level Switching	0
	0%
None	8
	89%
Other	0

Response	Total
	0%

**z. LED Reflector**

Response	Total
<b>Total Respondents</b>	<b>9</b>
	<b>100%</b>
Occupancy	0
	0%
Photocell	0
	0%
Timer	0
	0%
Bi-Level Switching	0
	0%
None	8
	89%
Other	1
	11%

**aa. Flood Lights**

Response	Total
<b>Total Respondents</b>	<b>10</b>
	<b>100%</b>
Occupancy	3
	30%
Photocell	3
	30%
Timer	2
	20%
Bi-Level Switching	0
	0%
None	4
	40%
Other	2
	20%

**bb. LED Canned Light Fixtures**

Response	Total
<b>Total Respondents</b>	<b>11</b>

Response	Total
	<b>100%</b>
Occupancy	3
	27%
Photocell	0
	0%
Timer	0
	0%
Bi-Level Switching	0
	0%
None	7
	64%
Other	2
	18%

cc. LED Track Light Fixtures

Response	Total
<b>Total Respondents</b>	<b>11</b>
	<b>100%</b>
Occupancy	2
	18%
Photocell	0
	0%
Timer	0
	0%
Bi-Level Switching	0
	0%
None	8
	73%
Other	1
	9%

dd. LED Wall Pack

Response	Total
<b>Total Respondents</b>	<b>2</b>
	<b>100%</b>
Occupancy	0
	0%
Photocell	0
	0%
Timer	0
	0



Response	Total
	0%
Bi-Level Switching	0
	0%
None	2
	100%
Other	0
	0%

ee. LED Canopy

Response	Total
<b>Total Respondents</b>	<b>2</b>
	<b>100%</b>
Occupancy	0
	0%
Photocell	0
	0%
Timer	0
	0%
Bi-Level Switching	0
	0%
None	2
	100%
Other	0
	0%

ff. LED Pole Mounted

Response	Total
<b>Total Respondents</b>	<b>2</b>
	<b>100%</b>
Occupancy	0
	0%
Photocell	2
	100%
Timer	0
	0%
Bi-Level Switching	0
	0%
None	0
	0%
Other	0

Response	Total
	0%

gg. LED Bollards

Response	Total
<b>Total Respondents</b>	<b>2</b>
	<b>100%</b>
Occupancy	0
	0%
Photocell	0
	0%
Timer	0
	0%
Bi-Level Switching	0
	0%
None	2
	100%
Other	0
	0%

hh. LED Exit Signs

\*There were no respondents for this question

ii. LED Open Signs

\*There were no respondents for this question

jj. High Bay LED Fixtures

Response	Total
<b>Total Respondents</b>	<b>1</b>
	<b>100%</b>
Occupancy	0
	0%
Photocell	0
	0%
Timer	0
	0%
Bi-Level Switching	0
	0%
None	1
	100%
Other	0
	0%

**kk.** Linear or tube LED lamps

Response	Total
<b>Total Respondents</b>	<b>13</b>
	<b>100%</b>
Occupancy	6
	46%
Photocell	1
	8%
Timer	1
	8%
Bi-Level Switching	0
	0%
None	6
	46%
Other	2
	15%

**ll.** Linear Fluorescent T8 lamps

Response	Total
<b>Total Respondents</b>	<b>2</b>
	<b>100%</b>
Occupancy	0
	0%
Photocell	1
	50%
Timer	0
	0%
Bi-Level Switching	0
	0%
None	1
	50%
Other	0
	0%

**mm.** Linear Fluorescent T5 lamps

\*There were no respondents for this question

**nn.** [INSERT RESPONSES FROM L1, L1a, L1b, and/or L1c] (If more than one type, please provide quantity for each type of lighting equipment installed) **[OPEN END]**

\*There were no respondents for this question

L6. Did you receive any rebates or incentives for installing any of your energy saving lighting equipment?

Response	Total
Total Respondents	65
	100%
Yes	14
	22%
No	47
	72%
Not sure	4
	6%

L6a. For which energy saving lighting equipment did you receive rebates or incentives? Please select all that apply. [MULTIPLE RESPONSE]

Response	Total
Total Respondents	14
	100%
Linear or tube LED lamps	5
	36%
Standard LEDs	4
	29%
LED Canned Light Fixtures	2
	14%
LED Track Light Fixtures	2
	14%
Other Linear Fluorescents from L1c	2
	14%
LED Wall Pack	1
	7%
LED Pole Mounted	1
	7%
Linear Fluorescent T8 lamps	1
	7%
Linear Fluorescent T5 lamps	1
	7%
Standard CFLs	0
	0%
Pin-Based CFLs	0
	0%
LED Globe	0

Response	Total
	0%
LED Candelabra	0
	0%
LED Reflector	0
	0%
LED Flood Lights	0
	0%
LED Canopy	0
	0%
LED Bollards	0
	0%
LED Exit Signs	0
	0%
LED Open Signs	0
	0%
High Bay LED Fixtures	0
	0%
Lighting controls	0
	0%
Other Lighting from L1	0
	0%
Other CFLs from L1a	0
	0%
Other LEDs from L1b	0
	0%
I received no rebates for the above listed equipment	2
	14%

L6b. Please identify the organization(s) from which you received rebates or incentives? Please select all that apply.  
[MULTIPLE RESPONSE]

Response	Total
<b>Total Respondents</b>	<b>12</b>
	<b>100%</b>
Pacific Gas & Electric Company	6
	50%
Other	3

Response	Total
	25%
Marin Clean Energy	2
	17%
Not sure	2
	17%
Bay Area Regional Energy Network	0
	0%

L6c. Please identify the main reason why you did not receive rebates.

Response	Total
<b>Total Respondents</b>	<b>47</b>
	<b>100%</b>
Did not know if one existed	33
	70%
Too much of a hassle to apply for the rebate	7
	15%
Equipment did not qualify	6
	13%
Other	1
	2%
Was in a hurry to purchase new equipment	0
	0%

#### HEATING, COOLING AND VENTILATION (HVAC)

H1. Which of the following **heating, cooling, and/or ventilation systems** have you upgraded or installed in your property?  
Please select all that apply. [MULTIPLE RESPONSE] [RANDOMIZE 1 THROUGH 15]

Response	Total
<b>Total Respondents</b>	<b>51</b>
	<b>100%</b>
New energy saving heating and cooling equipment	30
	59%
Heating and/or cooling system tune-ups	16
	31%
Programmable or smart thermostat	33
	65%
Sealed leaks or tears in existing duct work	13
	25%

Response	Total
Insulated existing duct work	13
	25%
Replace dirty air filters regularly (at least every 3-6 months)	31
	61%
ENERGY STAR ceiling fan(s)	11
	22%
ENERGY STAR ventilation or exhaust bathroom fan(s)	12
	24%
Attic fan	7
	14%
Whole house fan	3
	6%
Made changes to chillers or chilled water system(s)	0
	0%
Made changes to boilers or steam water system(s)	1
	2%
Made changes air distribution equipment and ventilation controls	0
	0%
Made changes to HVAC operating schedules	2
	4%
Variable speed fan or blower motors Other	13
	25%
Other	4
	8%
Not sure	0
	0%
None	0
	0%

H2. What type of energy saving **heating and/or cooling equipment** did you install or upgrade? [MULTIPLE RESPONSE]

Response	Total
<b>Total Respondents</b>	<b>32</b>
	<b>100%</b>
Central Air Conditioner	16
	50%
Air Source Heat Pump	6
	19%

Response	Total
Mini-Split (Ductless) Heat Pump	3
	9%
ENERGY STAR Window Air Conditioner	3
	9%
ENERGY STAR Room Air Conditioners	0
	0%
Ground Source Heat Pump	1
	3%
Boiler	0
	0%
Furnace	13
	41%
Electric heater/Portable heater	0
	0%
Baseboard heating	1
	3%
Infrared Heater	0
	0%
Gas-Fired Condensing Unit Heater	1
	3%
Packaged Terminal Air Conditioner (PTAC)	0
	0%
Packaged Terminal Heat Pump (PTHP)	0
	0%
Chiller	0
	0%
Cooling Tower	0
	0%
Variable Air Volume (VAV) box	0
	0%
Other	3
	9%
Not sure	0
	0%

H2a. How many of each type of **heating and/or cooling equipment** did you install or upgrade? [MULTIPLE RESPONSE]  
[NUMERIC OPEN END 0 – 99, CHECKBOX FOR NOT SURE FOR EACH ROW]



Response	Average Quantity
<b>Total Respondents</b>	<b>30</b>
Baseboard heating	2
Central Air Conditioner	2
Gas-Fired Condensing Unit Heater	2
Ground Source Heat Pump	2
Mini-Split (Ductless) Heat Pump	2
Air Source Heat Pump	1
ENERGY STAR Window Air Conditioner	1
Furnace	1
ENERGY STAR Room Air Conditioners	0
Boiler	0
Electric heater/Portable heater	0
Infrared Heater	0
Packaged Terminal Air Conditioner (PTAC)	0
Packaged Terminal Heat Pump (PTHP)	0
Chiller	0
Cooling Tower	0
Variable Air Volume (VAV) box	0
Other	1

H3. Please identify all equipment that received tune-ups. [MULTIPLE RESPONSE]

Response	Total
<b>Total Respondents</b>	<b>16</b>
	<b>100%</b>
Central Air Conditioner	11
	69%
Furnace	10
	63%
Boiler	4
	25%
Air Source Heat Pump	2
	13%
Cooling tower	1
	6%
Mini-Split (Ductless) Heat Pump	0
	0%

Response	Total
Space Heating Boiler	0
	0%
Process Boiler	0
	0%
Chiller	0
	0%
Other	2
	13%

H3a. How many of these heating or cooling equipment received tune-ups? **[MULTIPLE RESPONSE] [NUMERIC OPEN END 0-99, CHECKBOX FOR NOT SURE FOR EACH ROW]**

Response	Average Quantity
<b>Total Respondents</b>	<b>15</b>
Central Air Conditioner	2
Air Source Heat Pump	1
Mini-Split (Ductless) Heat Pump	0
Boiler	2
Furnace	2
Space Heating Boiler	0
Process Boiler	0
Other	1

H4. How many programmable thermostats did you install at your property?

Response	Average Quantity
<b>Total Respondents</b>	<b>4</b>
Average number of programmable thermostats installed	1

H5. How many ENERGY STAR ceiling fans did you install? **[NUMERIC OPEN END 1-99, CHECKBOX FOR NOT SURE]**

Response	Average Quantity
<b>Total Respondents</b>	<b>11</b>
Average number of ENERGY STAR ceiling fans installed	3

H6. How many ENERGY STAR ventilation or bathroom exhaust fans did you install? **[NUMERIC OPEN END 1-99, CHECKBOX FOR NOT SURE]**

Response	Average Quantity
<b>Total Respondents</b>	<b>12</b>
Average number of ENERGY STAR ventilation or bathroom exhaust fans installed	2

H7. Please identify all changes you made to your property's **chiller and/or chilled water system**. [MULTIPLE RESPONSE]

\*There were no respondents for this question

H8. What type(s) of chiller(s) did you install? Please select all that apply. [MULTIPLE RESPONSE]

\*There were no respondents for this question

H8a. How many of each type of chiller did you install? [NUMERIC OPEN END 0-99, CHECKBOX FOR NOT SURE]

\*There were no respondents for this question

H9. What type of chiller does your property have? If your property has multiple types, please select the majority type.

\*There were no respondents for this question

H10. Please identify all changes you made to your property's **boiler and/or steam water system**. [MULTIPLE RESPONSE]

Response	Total
<b>Total Respondents</b>	<b>1</b>
	<b>100%</b>
Installed hot water pump VFDs	1
	100%
Repaired or replaced boiler steam trap(s)	1
	100%
Installed high-efficiency boiler(s)	0
	0%
Reset hot water supply temperature	0
	0%
Reset boiler lockout controls	0
	0%
Increased boiler burner turndown ratio	0
	0%
Installed shut off damper on exhaust flue or combustion air intake	0
	0%
Other	0
	0%
Not sure	0
	0%

Response	Total
None	0
	0%

H11. How many of each **boiler and/or steam water system equipment** did you install? [NUMERIC OPEN END s0-99, CHECKBOX FOR NOT SURE FOR EACH ROW]

Response	Average Quantity
<b>Total Respondents</b>	<b>1</b>
High-efficiency boilers	1
Hot water pump VFDs	0
Steam traps	0

H12. How many boilers are currently operating at your property? [NUMERIC OPEN END, CHECKBOX FOR NOT SURE]

Response	Average Quantity
<b>Total Respondents</b>	<b>1</b>
Average number of boilers currently operating	1

H13. Please identify all upgrades you made to your property's **air distribution equipment and changes to ventilation controls**. [MULTIPLE RESPONSE] [RANDOMIZE 1 THROUGH 10]

\*There were no respondents for this question

H14. Please identify all changes you made to your property's ventilation control settings. [MULTIPLE RESPONSE]

\*There were no respondents for this question

H15. Please identify all improvements you made to your property's duct system. [MULTIPLE RESPONSE]

\*There were no respondents for this question

H16. Please identify all changes you made to your property's **HVAC system operating scheduling settings**. [MULTIPLE RESPONSE] [RANDOMIZE 1 THROUGH 7]

Response	Total
<b>Total Respondents</b>	<b>2</b>
	<b>100%</b>
Installed programmable or advanced thermostats	1
	50%
Adjusted schedules to space occupancy	1
	50%
Adjusted schedules for optimization	2
	100%

Response	Total
Reduced simultaneous heating and cooling	2
	100%
Reset supply air temperature	1
	50%
Scheduled optimum starts	0
	0%
Installed Guest Room Energy Management (GREM) systems	0
	0%
Other	0
	0%
Not sure	0
	0%

H17. How many programmable or advanced thermostats did you install at your property? [NUMERIC OPEN END 0-99, CHECKBOX FOR NOT SURE]

Response	Average Quantity
<b>Total Respondents</b>	1
Average Number of programmable or advanced thermostats installed	2

H18. Please specify type of equipment impacted by updating operating schedules. [MULTIPLE RESPONSE]

Response	Total
<b>Total Respondents</b>	2
	100%
Air Handling Units (AHU)	2
	100%
Boilers	1
	50%
Pumps	1
	50%
Return and exhaust fans	0
	0%
Fan powered VAV boxes	0
	0%
Heaters	0
	0%
Other	0

Response	Total
	0%

H18a. Please specify number of equipment impacted by updating operating schedules. **[MULTIPLE RESPONSE]**  
**[NUMERIC OPEN END 0-99, CHECKBOX FOR NOT SURE FOR EACH ROW]**

Response	Average Quantity
<b>Total Respondents</b>	<b>2</b>
	<b>100%</b>
Air Handling Units (AHU)	2
Pumps	2
Boilers	1
Return and exhaust fans	0
Fan powered VAV boxes	0
Heaters	0
Other	0

H19. Please select equipment that received VFD installations or upgrades from the list below. Please select all that apply.  
**[MULTIPLE RESPONSE]**

Response	Total
<b>Total Respondents</b>	<b>3</b>
	<b>100%</b>
Hot Water Pump	0
	0%
Chilled Water Pump	0
	0%
Cooling Tower Fan	0
	0%
HVAC Supply/Return Fans	0
	0%
Other	1
	33%
Not sure	2
	67%

H19a. How many of the following equipment received installations or VFD upgrades. **[NUMERIC OPEN END 0-99, CHECKBOX FOR NOT SURE FOR EACH ROW]**

\*There were no respondents for this question

H20. Did you receive any rebates or incentives for installing or upgrading any of your **heating, cooling, and/or ventilation** equipment?

Response	Total
Total Respondents	51
	100%
Yes	9
	18%
No	36
	71%
Not Sure	6
	12%

H20a. For which energy saving **heating, cooling, and/or ventilation** equipment did you receive rebates or incentives?  
Please select all that apply. [MULTIPLE RESPONSE]

Response	Total
Total Respondents	9
	100%
New energy saving heating and cooling equipment	5
	56%
Programmable or smart thermostat	3
	33%
Insulated existing duct work	3
	33%
Sealed leaks or tears in existing duct work	2
	22%
Heating and/or cooling system tune-ups	1
	11%
Variable speed fan or blower motors	1
	11%
Other HVAC Equipment from H1	1
	11%
I received no rebates for the above listed equipment	1
	11%
Replace dirty air filters regularly (at least every 3-6 months)	0
	0%
ENERGY STAR ceiling fan(s)	0
	0%
ENERGY STAR ventilation or exhaust bathroom fan(s)	0
	0%

Response	Total
Attic fan	0
	0%
Whole house fan	0
	0%
Made changes to chillers or chilled water system(s)	0
	0%
Made changes to boilers or steam water system(s)	0
	0%
Made changes air distribution equipment and ventilation controls	0
	0%
Made changes to HVAC operating schedules	0
	0%

H20b. Please identify the organization(s) from which you received rebates or incentives? Please select all that apply.  
[MULTIPLE RESPONSE]

Response	Total
<b>Total Respondents</b>	<b>8</b>
	<b>100%</b>
PG&E	3
	38%
MCE	1
	13%
BayREN	1
	13%
Marin County	1
	13%
SMUD	1
	13%
Not sure	3
	38%

H20c. Please identify the main reason why you did not receive rebates or incentives?

Response	Total
<b>Total Respondents</b>	<b>36</b>
	<b>100%</b>
Did not know if one existed	24



Response	Total
	67%
Equipment did not qualify	7
	19%
Too much of a hassle to apply for the rebate	2
	6%
Was in a hurry to purchase new equipment	1
	3%
COOP owned	1
	3%
Incidental Expense	1
	3%
Other	3
	8%

#### CONSUMER ELECTRONICS

HE1. Which of the following **consumer electronic equipment** have you installed to reduce your property's energy use? Remember, we are interested in the consumer electronics you purchased to replace old equipment since you interacted with Marin Clean Energy. **[MULTIPLE RESPONSE, UP TO THREE]**

Response	Total
<b>Total Respondents</b>	<b>52</b>
	<b>100%</b>
ENERGY STAR rated printer(s)	31
	60%
Energy saving desktop or laptop computers	28
	54%
Advanced power strips	23
	44%
ENERGY STAR rated computer monitor(s)	18
	35%
Computer power management software	6
	12%
ENERGY STAR rated copier(s)	2
	4%
Other	7
	13%
Not sure	3
	6%

HE1a. How many of each type of consumer electronic equipment did you install? [NUMERIC OPEN END, 0-99, CHECKBOX FOR NOT SURE FOR EACH ROW]

Response	Average Quantity
Total Respondents	48
	100%
Advanced power strips	4
Computer power management software	3
ENERGY STAR rated computer monitor(s)	3
Energy saving desktop or laptop computers	2
ENERGY STAR rated printer(s)	2
ENERGY STAR rated copier(s)	1
Other	2

HE2. Did you receive any rebates or incentives for the consumer electronics you installed?

Response	Total
Total Respondents	49
	100%
Yes	5
	10%
No	42
	86%
Not sure	2
	4%

HE2a. For which consumer electronic equipment did you receive rebates or incentives? Please select all that apply. [MULTIPLE RESPONSE]

Response	Total
Total Respondents	5
	100%
Other from HE1	2
	40%
I received no rebates for the above listed equipment	2
	40%
Advanced power strips	1
	20%
Computer power management software	0
	0%

Response	Total
Purchased energy saving desktop or laptop computers	0 0%
ENERGY STAR rated printer(s)	0 0%
ENERGY STAR rated copier(s)	0 0%
ENERGY STAR rated computer monitor(s)	0 0%

HE2b. Please identify the organization(s) from which you received rebates or incentives? Please select all that apply. **[MULTIPLE RESPONSE]**

Response	Total
<b>Total Respondents</b>	<b>3</b> <b>100%</b>
PG&E	3 100%
MCE	1 33%
BayREN	0 0%
Other	0 0%
Not sure	0 0%

HE2c. Please identify the main reason why you did not receive rebates or incentives?

Response	Total
<b>Total Respondents</b>	<b>42</b> <b>100%</b>
Did not know if one existed	32 76%
Too much of a hassle to apply for the rebate	6 14%
Equipment did not qualify	2 5%
	1

Response	Total
Was in a hurry to purchase new equipment	2%
Given to me at no charge.	1
	2%
Other	2
	5%

## APPLIANCES

AP1. Which of the following **appliances** have you installed or recycled at your property? Please select all that apply.  
**[MULTIPLE RESPONSE] [RANDOMIZE 1 THROUGH 11]**

Response	Total
<b>Total Respondents</b>	<b>64</b>
	<b>100%</b>
ENERGY STAR Dishwasher	38
	59%
ENERGY STAR Refrigerator	35
	55%
ENERGY STAR Clothes Washer	32
	50%
ENERGY STAR Clothes Dryer	30
	47%
ENERGY STAR Freezer	9
	14%
ENERGY STAR Air Purifier	6
	9%
Recycled old secondary refrigerator	5
	8%
ENERGY STAR Dehumidifier	3
	5%
ENERGY STAR Room Air Conditioner	2
	3%
Recycled old secondary freezer	1
	2%
Recycled old room air conditioner	0
	0%
Other	1

Response	Total
	2%
Not sure	2
	3%

AP1a. How many of each appliance did you install at your property? [NUMERIC OPEN END 0-99, CHECKBOX FOR NOT SURE]

Response	Average Quantity
<b>Total Respondents</b>	<b>61</b>
	<b>100%</b>
ENERGY STAR Air Purifier	2
ENERGY STAR Refrigerator	2
ENERGY STAR Room Air Conditioner	2
ENERGY STAR Clothes Washer	1
ENERGY STAR Dehumidifier	1
ENERGY STAR Dishwasher	1
ENERGY STAR Freezer	1
ENERGY STAR Clothes Dryer	1
Recycled old secondary refrigerator	1
Recycled old secondary freezer	1
Recycled old room air conditioner	0
Other appliance(s)	1

AP3. Is the ENERGY STAR Clothes Dryer you installed gas or electric?

Response	Total
<b>Total Respondents</b>	<b>30</b>
	<b>100%</b>
Gas	15
	50%
Electric	14
	47%
Not sure	1
	3%

AP4. Did you receive any rebates or incentives for installing appliances?

Response	Total
<b>Total Respondents</b>	<b>62</b>
	<b>100%</b>

Response	Total
Yes	11
	18%
No	46
	74%
Not sure	5
	8%

AP4a. For which appliance(s) did you receive rebates or incentives? Please select all that apply. **[MULTIPLE RESPONSE]**

Response	Total
<b>Total Respondents</b>	<b>11</b>
	<b>100%</b>
ENERGY STAR Clothes Washer	7
	64%
ENERGY STAR Clothes Dryer	6
	55%
ENERGY STAR Refrigerator	4
	36%
ENERGY STAR Dishwasher	2
	18%
Recycled old secondary refrigerator	1
	9%
ENERGY STAR Air Purifier	0
	0%
ENERGY STAR Dehumidifier	0
	0%
ENERGY STAR Freezer	0
	0%
ENERGY STAR Room Air Conditioner	0
	0%
Recycled old secondary freezer	0
	0%
Recycled old room air conditioner	0
	0%
Other from AP1_00	0
	0%
I received no rebates for the above listed equipment	0
	0%

AP4b. Please identify the organization(s) from which you received rebates or incentives? Please select all that apply.  
[MULTIPLE RESPONSE]

Response	Total
Total Respondents	11
	100%
PG&E	9
	82%
MCE	1
	9%
BayRENs	1
	9%
Other	0
	0%
Not sure	2
	18%

AP4c. Please identify the main reason why you did not receive rebates or incentives?

Response	Total
Total Respondents	46
	100%
Did not know if one existed	31
	67%
Equipment did not qualify	8
	17%
Was in a hurry to purchase new equipment	2
	4%
Too much of a hassle to apply for the rebate	2
	4%
COOP owned	1
	2%
House owner received rebate	1
	2%
Unknown	0
	0%
Other	3
	7%

## BUILDING ENVELOPE

BE1. Which of the following improvements have you made to your property's **insulation or air sealing**? Please select all that apply. **[MULTIPLE RESPONSE] [RANDOMIZE 1 THROUGH 7]**

Response	Total
<b>Total Respondents</b>	<b>38</b>
	<b>100%</b>
Added insulation	29
	76%
Installed ENERGY STAR double or triple pane windows	21
	55%
Caulked, weather-stripped or sealed windows, doors, and/or outlet gaskets	20
	53%
Caulked, weather-stripped or spray-foamed air leaks in attic or crawlspace	16
	42%
Weather-stripped or insulated attic hatch or door	11
	29%
Installed cool roof	9
	24%
Installed window film to existing windows	0
	0%
Other	7
	18%
Not sure	0
	0%

BE2. Where did you install insulation within your property? Please select all that apply. **[MULTIPLE RESPONSE]**

Response	Total
<b>Total Respondents</b>	<b>29</b>
	<b>100%</b>
Attic	25
	86%
Walls	15
	52%
Crawlspace	13
	45%
Floor	10
	34%



Response	Total
Rim Joist	3
	10%
Basement	2
	7%
Other	0
	0%

BE3. What is the approximate square footage of installed insulation? Your best estimate is fine. [NUMERIC OPEN END, CHECKBOX FOR NOT SURE FOR EACH ROW]

Response	Total
<b>Total Respondents</b>	<b>22</b>
	<b>100%</b>
Attic	1,721
Walls	1,317
Floor	943
Crawlspace	874
Basement	600
Rim Joist	0
Other insulation	0

BE4. How many windows/doors did you caulk, weather-strip or seal? [NUMERIC OPEN END 1-999, CHECKBOX FOR NOT SURE]

Response	Average Quantity
<b>Total Respondents</b>	<b>20</b>
	<b>100%</b>
Number of Windows/Doors Caulked	16
Not sure	1
	5%

BE5. How many ENERGY STAR double or triple pane windows did you install? [NUMERIC OPEN END 1-999, CHECKBOX FOR NOT SURE]

Response	Average Quantity
<b>Total Respondents</b>	<b>21</b>
	<b>100%</b>
Average number of ENERGY STAR double or triple pane windows installed	15
Not sure	1

Response	Average Quantity
	5%

BE6. How many windows did you install window film or tint? [NUMERIC OPEN END 1-999, CHECKBOX FOR NOT SURE]

\*There were no respondents to this question.

BE7. Did you receive any rebates or incentives for installing building envelope measures such as insulation or air sealing?

Response	Total
<b>Total Respondents</b>	<b>38</b>
	<b>100%</b>
Yes	6
	16%
No	30
	79%
Not sure	2
	5%

BE7a. For which building envelope measures did you receive rebates or incentives? Please select all that apply.

[MULTIPLE RESPONSE]

Response	Total
<b>Total Respondents</b>	<b>6</b>
	<b>100%</b>
Added insulation	5
	83%
Caulked, weather-stripped or sealed windows, doors, and/or outlet gaskets	3
	50%
Caulked, weather-stripped or spray-foamed air leaks in attic or crawlspace	3
	50%
Weather-stripped or insulated attic hatch or door	2
	33%
Installed cool roof	1
	17%
Installed ENERGY STAR double or triple pane windows	0
	0%
Installed window film to existing windows	0
	0%
Other from BE1_00	0
	0%

Response	Total
I received no rebates for the above listed equipment	0
	0%

BE7b. Please identify the organization(s) from which you received rebates or incentives? Please select all that apply.  
[MULTIPLE RESPONSE]

Response	Total
<b>Total Respondents</b>	<b>6</b>
	<b>100%</b>
BayREN	3
	50%
MCE	1
	17%
SMUD	1
	17%
PG&E	0
	0%
Not sure	1
	17%

BE7c. Please identify the main reason why you did not receive rebates or incentives?

Response	Total
<b>Total Respondents</b>	<b>30</b>
	<b>100%</b>
Did not know if one existed	24
	80%
Equipment did not qualify	2
	7%
Too much of a hassle to apply for the rebate	2
	7%
did not qualify re income levels	1
	3%
PG&E did it at no cost	1
	3%
Was in a hurry to purchase new equipment	0
	0%
Other	3

Response	Total
	10%

## WATER HEATING

WH1. Which of the following energy related upgrades have you made to reduce your property's **domestic hot water** energy use? Please select all that. **[MULTIPLE RESPONSE] [RANDOMIZE 1 THROUGH 10]**

Response	Total
<b>Total Respondents</b>	<b>37</b>
	<b>100%</b>
Installed new ENERGY STAR rated water heater(s)	23
	62%
Installed low-flow showerhead(s)	18
	49%
Set water heater temperature to 120F degrees	15
	41%
Installed low-flow faucet aerator(s)	12
	32%
Insulated hot water pipes with pipe insulation	10
	27%
Installed insulating blanket around water heater tank(s)	4
	11%
Installed thermostatic restrictor valve in the shower	3
	8%
Performed boiler tune-up(s)	2
	5%
Installed demand control recirculation pump(s)	1
	3%
Installed pre-rinse spray valve(s)	0
	0%
Other	8
	22%
Not sure	1
	3%

WH1a. For each domestic hot water upgrade you've made to your property, please specify how many of each equipment you installed. **[NUMERIC OPEN END 0-99, CHECKBOX FOR NOT SURE FOR EACH ROW]**

Response	Average Quantity
<b>Total Respondents</b>	<b>33</b>
	<b>100%</b>
Low-flow faucet aerator(s)	10
Low-flow showerhead(s)	7
Thermostatic restrictor valve in the shower	3
ENERGY STAR rated water heater(s)	2
Insulating blanket around water heater tank(s)	2
Demand control recirculation pump(s)	1
Pre-rinse spray valve(s)	0
Other equipment	2

WH2. Approximately how many linear feet of pipe insulation did you install? [NUMERIC OPEN END, CHECKBOX FOR NOT SURE]

Response	Total
<b>Total Respondents</b>	<b>10</b>
	<b>100%</b>
Average linear feet of pipe insulation installed	4
	40%
Not sure	6
	60%

WH3. What type of energy saving water heater was installed? [MULTIPLE RESPONSE]

Response	Total
<b>Total Respondents</b>	<b>23</b>
	<b>100%</b>
Storage tank water heater	11
	48%
Heat pump water heater	7
	30%
Tankless water heater (also referred to as instantaneous or on-demand)	6
	26%
Solar water heating	1
	4%
Other	0
	0%

WH4. Did you receive rebates or incentives for any of the domestic hot water equipment you installed or upgraded?

Response	Total
Total Respondents	36
	100%
Yes	8
	22%
No	24
	67%
Not sure	4
	11%

WH4a. For which domestic hot water equipment or equipment modifications did you receive rebates or incentives? Please select all that apply. [MULTIPLE RESPONSE]

Response	Total
Total Respondents	8
	100%
ENERGY STAR rated water heater(s)	6
	75%
Other from WH1_00	2
	25%
Low-flow showerhead(s)	0
	0%
Low-flow faucet aerator(s)	0
	0%
Pre-rinse spray valve(s)	0
	0%
Thermostatic restrictor valve in the shower	0
	0%
Demand control recirculation pump(s)	0
	0%
Performed boiler tune-up(s)	0
	0%
Set water heater temperature to 120F degrees	0
	0%
Insulated hot water pipes with pipe insulation	0
	0%
Installed insulating blanket around water heater tank	0
	0%

Response	Total
I received no rebates for the above listed equipment	0
	0%

WH4b. Please identify the organization(s) from which you received rebates or incentives? Please select all that apply.  
[MULTIPLE RESPONSE]

Response	Total
<b>Total Respondents</b>	<b>8</b>
	<b>100%</b>
PG&E	5
	63%
MCE	3
	38%
SDG&E	1
	13%
BayREN	0
	0%
Not sure	0
	0%

WH4c. Please identify the main reason why you did not receive rebates or incentives?

Response	Total
<b>Total Respondents</b>	<b>24</b>
	<b>100%</b>
Did not know if one existed	12
	50%
Equipment did not qualify	4
	17%
Too much of a hassle to apply for the rebate	4
	17%
Was in a hurry to purchase new equipment	1
	4%
Other	3
	13%

FOOD SERVICE EQUIPMENT

FS1. Which of the following **food service equipment** have you installed to save energy in your property? Please select all that apply. **[MULTIPLE RESPONSE] [RANDOMIZE 1 THROUGH 12]**

Response	Total
<b>Total Respondents</b>	<b>2</b>
	<b>100%</b>
ENERGY STAR dishwasher	1
	50%
High-efficiency oven(s)	0
	0%
ENERGY STAR reach-in cooler(s)	0
	0%
ENERGY STAR reach-in freezer(s)	0
	0%
ENERGY STAR steam cooker	0
	0%
ENERGY STAR fryer	0
	0%
ENERGY STAR griddle	0
	0%
ENERGY STAR hot food holding cabinets	0
	0%
ENERGY STAR ice machine	0
	0%
Infrared kitchen equipment	0
	0%
Pre-rinse spray valves	0
	0%
Kitchen demand ventilation controls	0
	0%
Other	0
	0%
Not sure	1
	50%

FS1a. For each type of food service equipment you installed, please specify the quantity of equipment that was installed in your facility. **[NUMERIC OPEN END, CHECKBOX FOR NOT SURE FOR EACH ROW]**

Response	Total
<b>Total Respondents</b>	<b>1</b>



Response	Total
	100%
ENERGY STAR dishwasher	1.00

FS2. What type of food service do you provide?

Response	Total
Total Respondents	1
	100%
Office kitchen	1
	100%
Fast food	0
	0%
Full service	0
	0%
Cafeteria	0
	0%
Pizza	0
	0%
Not sure	0
	0%

FS3. Please identify the type(s) of energy saving oven(s) you installed at your property. [MULTIPLE RESPONSE]

\*There were no respondents for this question

FS6. Please identify the type(s) of installed energy saving infrared kitchen equipment at your property. [MULTIPLE RESPONSE]

\*There were no respondents for this question

FS6a. How many of each type of energy saving infrared kitchen equipment did you install? Please provide your best estimate for all that apply. [NUMERIC OPEN END, CHECKBOX FOR NOT SURE FOR EACH ROW]

\*There were no respondents for this question

FS6b. Please identify what type(s) of fuel your energy saving infrared kitchen equipment uses.

\*There were no respondents for this question

FS7. Did you receive rebates or incentives for any of the foodservice equipment you installed?

Response	Total
Total Respondents	1
	100%
Yes	0
	0%

Response	Total
No	1
	100%
Not Sure	0
	0%

FS7a. For which foodservice equipment did you receive rebates or incentives? Please select all that apply. **[MULTIPLE RESPONSE]**

\*There were no respondents for this question

FS7b. Please identify the organization(s) from which you received rebates or incentives? Please select all that apply. **[MULTIPLE RESPONSE]**

\*There were no respondents for this question

FS7c. Please identify the main reason why you did not receive rebates or incentives?

Response	Total
<b>Total Respondents</b>	<b>336</b>
	<b>100%</b>
Did not know if one existed	1
	<1%
Equipment did not qualify	0
	0%
Was in a hurry to purchase new equipment	0
	0%
Too much of a hassle to apply for the rebate	0
	0%
Other	0
	0%

## REFRIGERATION

Note, none of the respondents installed refrigeration equipment listed below.

R1. Which of the following **refrigeration** equipment have you installed to save on your property's energy usage? Please select all that apply. **[MULTIPLE RESPONSE]**

1. Controls for coolers and/or freezers
2. Refrigerated beverage or snack machine controls
3. ENERGY STAR refrigerated vending machine
4. ECM for walk-in and reach-in coolers and/or freezers
5. Strip curtain for walk-in coolers and/or freezers
6. Refrigeration economizers
7. Night covers for open refrigeration cases
00. Something else, please specify **[OPEN END]**

8. Not sure [SKIP TO NEXT SECTION]

## COMPRESSED AIR

Note, none of the respondents installed compressed air equipment listed below.

CA1. Which of the following equipment have you installed or upgraded to reduce your property's **compressed air** energy usage? Please select all that apply. [MULTIPLE RESPONSE]

1. Air compressor with a variable frequency drive
2. High-efficiency air dryer
3. Low-pressure drop filters
4. No-loss condensate drains
5. High-efficiency air nozzles
00. Something else, please specify [OPEN END]
98. Not sure [SKIP TO NEXT SECTION]

## POOL EQUIPMENT

P1. Which of the following equipment upgrades or installations have you made to reduce your **pool's** energy usage? Please select all that apply. [MULTIPLE RESPONSE]

Response	Total
Total Respondents	14
	100%
ENERGY STAR pool pump	6
	43%
Pool pump timer	5
	36%
Pool cover	5
	36%
Other	5
	36%
Not sure	1
	7%

P2. Did you receive rebates or incentives for reducing your pool's energy use?

Response	Total
Total Respondents	13
	100%
Yes	3
	23%
No	9
	69%
Not sure	1

Response	Total
	8%

- P2a. For which energy saving pool equipment did you receive rebates or incentives? Please select all that apply. **[MULTIPLE RESPONSE]**

Response	Total
<b>Total Respondents</b>	<b>3</b>
	<b>100%</b>
Installed ENERGY STAR pool pump	3
	100%
Pool pump timer	0
	0%
Pool cover	0
	0%
Other equipment	0
	0%
I received no rebates for the above listed equipment	0
	0%

- P2b. Please identify the organization(s) from which you received rebates or incentives? Please select all that apply. **[MULTIPLE RESPONSE]**

Response	Total
<b>Total Respondents</b>	<b>3</b>
	<b>100%</b>
MCE	1
	33%
PG&E	1
	33%
BayREN	0
	0%
Other	0
	0%
Not sure	1
	33%

- P2c. Please identify the main reason why you did not receive rebates or incentives?

Response	Total
<b>Total Respondents</b>	<b>9</b>
	<b>100%</b>

Response	Total
Did not know if one existed	7
	78%
Equipment did not qualify	2
	22%
Was in a hurry to purchase new equipment	0
	0%
Too much of a hassle to apply for the rebate	0
	0%
Other	0
	0%

## SOLAR

SOL1. How many solar panels did you install? [NUMERIC OPEN END, CHECKBOX FOR NOT SURE]

Response	Average Quantity
<b>Total Respondents</b>	<b>49</b>
	<b>100%</b>
Number of solar panels installed	20
Not sure	8
	16%

SOL2. Did you receive a rebate or incentive for solar panels you installed in your property?

Response	Total
<b>Total Respondents</b>	<b>41</b>
	<b>100%</b>
Yes	30
	73%
No	10
	24%
Not sure	1
	2%

SOL2a. Please identify the organization(s) from which you received rebates or incentives? Please select all that apply. [MULTIPLE RESPONSE]

Response	Total
<b>Total Respondents</b>	<b>30</b>
	<b>100%</b>

Response	Total
Government (tax credit)	19
	63%
PG&E	4
	13%
MCE	2
	7%
BayREN	1
	3%
Not sure	7
	23%

SOL2b. Please identify the main reason why you did not receive rebates.

Response	Total
<b>Total Respondents</b>	<b>10</b>
	<b>100%</b>
Did not know if one existed	4
	40%
Equipment did not qualify	3
	30%
Equipment Free/Leased from Solar Panel Vendor	3
	30%
Was in a hurry to purchase new equipment	0
	0%
Too much of a hassle to apply for the rebate	0
	0%

OTHER

OT1. Please specify any other changes you made to reduce your property's energy usage. [OPEN END]

Response	Total
<b>Total Respondents</b>	<b>34</b>
	<b>100%</b>
Other/Miscellaneous	24
	71%
Not sure	2
	6%

Response	Total
None	8
	24%

OT2. How many of each [SHOW OT1. RESPONSE OR EE1\_0 RESPONSE] did you install? [NUMERIC OPEN, CHECKBOX FOR NOT SURE]

Response	Average Quantity
<b>Total Respondents</b>	<b>33</b>
	<b>100%</b>
Average number of other equipment installed	4
Not sure	9
	27%
Not applicable	1
	3%

OT3. Did you receive a rebate or incentive for these other changes you made to reduce energy use?

Response	Total
<b>Total Respondents</b>	<b>33</b>
	<b>100%</b>
Yes	9
	27%
No	20
	61%
Not sure	4
	12%

OT3a. Please identify the organization(s) from which you received rebates or incentives? Please select all that apply. [MULTIPLE RESPONSE]

Response	Total
<b>Total Respondents</b>	<b>9</b>
	<b>100%</b>
MCE	3
	33%
PG&E	3
	33%
Government (Tax Credit)	3
	33%

Response	Total
OhmConnect	2
	22%
Other Program Administrators	2
	22%
BayREN	0
	0%
Not sure	0
	0%

OT3b. Please identify the main reason why you did not receive rebates or incentives?

Response	Total
<b>Total Respondents</b>	<b>20</b>
	<b>100%</b>
Did not know if one existed	13
	65%
Equipment did not qualify	2
	10%
Too much of a hassle to apply for the rebate	2
	10%
Was in a hurry to purchase new equipment	0
	0%
Other	3
	15%

#### BEHAVIORAL ACTIONS

B1. What actions, if any, have you started to take or do more often to cut down your energy usage [READ “at <ADDRESS>” IF ADDRESS <> NULL; LEAVE BLANK IF ADDRESS = BLANK] since you first interacted with MCE? Please select all that apply. [MULTIPLE RESPONSE]

Response	Total
<b>Total Respondents</b>	<b>245</b>
	<b>100%</b>
Turn lights off when rooms are not in use	184
	75%
Clean the lint screen in the dryer	174
	71%
Make sure the dishwasher is full before it is run	159
	65%



Response	Total
Check dryer vent to be sure it is not blocked	140
	57%
Clean or change filters of heating/cooling equipment	131
	53%
Wash clothes in cold water	128
	52%
Open curtains and shades during the day to let in warming sunlight during cooler months	126
	51%
Close curtains and shades at night to protect against drafts during cooler months	123
	50%
Turn off electronics, such as a laptop, when they are not in use	122
	50%
Use a toaster oven instead of a full-size oven	88
	36%
Defrost freezers and refrigerators	36
	15%
Limit use of equipment/appliances	15
	6%
Adjusted timing of equipment/appliance use	4
	2%
Close curtains during the day to keep out heat in summer months	4
	2%
Switched to Electric Vehicle	3
	1%
None	38
	16%
Other	1
	<1%
Not sure	5
	2%

#### Level of Influence of Non-Resource Activity on Installation of EE Equipment

The following questions are about the level of influence of MCE and its energy savings programs on your decision to install or upgrade your equipment.

IN1. On a scale of 0 to 10, where 0 is “Not at All Influential” and 10 is “Extremely Influential”, how influential was the [SHOW “Energy Audit” if VAUDIT\_FL=1, ELSE SHOW “MCE eNewsletter” if VeNews\_FL=1, ELSE SHOW “CoolCalifornia Challenge” if vCoolCA\_FL=1, ELSE SHOW Multifamily Program Technical Assessment and Program Communication” if VMFC\_FL=1] in your decision to [SHOW “install energy saving equipment” if EE1≠98 OR 99]?

MCE Non-Resource Activity	Not At All Influential (0-2)	Somewhat Uninfluential (3-4)	Neutral (5)	Somewhat Influential (6-7)	Extremely Influential (8-10)	Mean	Standard Deviation
MCE's Electronic Newsletter (N=129)	41 32%	9 7%	22 17%	28 22%	29 22%	4.6	3.2
CoolCalifornia Challenge (N=14)	3 21%	1 7%	2 14%	5 36%	3 21%	5.1	2.9
Small Commercial Energy Audit (N=12)	0 0%	1 8%	0 0%	0 0%	11 92%	8.8	1.8
Multifamily Program Technical Assistance / Program Communication (N=4)	3 75%	1 25%	0 0%	0 0%	0 0%	8.0	2.7

- IN2. Now we would like to ask you about the importance of MCE's [SHOW "Energy Audit" if VAUDIT\_FL = 1 ELSE SHOW "eNewsletter" if VeNEWS\_FL = 1, ELSE SHOW "CoolCalifornia Challenge" if VCoolCA\_FL = 1, ELSE SHOW "Multifamily Technical Assistance and Program Communication" if "VMFC\_FL = 1] in your decision to install energy saving equipment compared to other factors that may have influenced your decision. If you were given a TOTAL of 10 points to rate the importance of MCE's energy saving program in your decision to [SHOW "install energy saving equipment" if EE1≠ 98 OR 99], and you had to divide those 10 points between (1) MCE's [SHOW "Energy Audit" if VAUDIT\_FL = 1 ELSE SHOW "eNewsletter" if VeNEWS\_FL = 1, ELSE SHOW "CoolCalifornia Challenge" if VCoolCA\_FL = 1, ELSE SHOW "Multifamily Technical Assistance and Program Communication" if "VMFC\_FL = 1] and (2) any OTHER factors, how many points would you give to the importance of your interaction with MCE? Your best estimate is fine. [NUMERIC 0-10] [NOTE TO PROGRAMMER: PLEASE ADD A CHECK FOR THE TOTAL OF A AND B/INFLUENCE SCORES BELOW. RESPONSES TO A AND B BELOW SHOULD SUM UP TO 10. IF THE TOTAL IS MORE OR LESS THAN 10, SHOW "YOUR SCORES FOR THE TWO OPTIONS BELOW SHOULD BE EQUAL TO 10. PLEASE REVIEW YOUR RESPONSES."]

Response	Mean
Total Respondents	164
Other Influencing Factors	Mean = 6
	Standard deviation = 3
MCE's Energy Audit, eNewsletter, CoolCA Challenge, or Multifamily Technical Assistance and Program Communication	Mean = 4
	Standard deviation = 3

- IN20. Please list up to three other factors that influenced your decision to install energy saving equipment. [OPEN END – ALLOW FOR UP TO THREE RESPONSES]

Response	Total
Total Respondents	142
	100%
Awareness and/or Concern for Environment/Climate Change	70
	49%
Cost savings	69
	49%
EE Program Participation/Incentive/Rebate	19
	13%

Response	Total
Sense of responsibility	17
	12%
Desire to be more energy efficient/save energy	16
	11%
Better/more efficient equipment	12
	8%
Influenced by Utility, Energy Service Provider, or EE Organizations	12
	8%
General knowledge	11
	8%
Professional knowledge/advice (e.g., architect, contractor, etc.)	11
	8%
Desire to lower carbon footprint	11
	8%
Necessity for new equipment	10
	7%
Public opinion/word-of-mouth	9
	6%
Switching to renewable energy sources	7
	5%
Lifestyle/personal choice (prefer to be EE)	6
	4%
Literature/Media/News	5
	4%
Increase Comfort	4
	3%
Value Add to Property	4
	3%
New Construction/Remodeling/building code	4
	3%
Tax Credit	4
	3%
Interest in technology	4
	3%
Equipment Compatibility (e.g., smart home)	3
	2%
Dissatisfaction with energy service provider	2
	1%
Other	13
	9%

- IN3. Now please think about the action you would have taken with regard to installing energy saving equipment that helps save energy if you hadn't interacted with MCE.  
Using a scale from 0 to 10, where 0 is "Not at all likely" and 10 is "Extremely likely", if you had not interacted with MCE through its [SHOW "Energy Audit" if VAUDIT\_FL = 1 ELSE SHOW "eNewsletter" if VeNEWS\_FL = 1, ELSE SHOW "CoolCalifornia Challenge" if VCoolCA\_FL = 1, ELSE SHOW "Multifamily Technical Assistance and Program Communication" if "VMFC\_FL = 1], what is the likelihood that you would have installed EXACTLY the same ENERGY SAVING equipment either at the same time or later?

Response	Total
Total Respondents	148
	100%
Extremely Likely (8-10)	93
	62%
Somewhat Likely (6-7)	25
	17%
Neutral (5)	11
	7%
Somewhat Unlikely (3-4)	15
	10%
Not at All Likely (0-2)	5
	3%
Mean	7.8
Standard Deviation	2.5

- IN4. Using the same scale from 0 to 10, if you had NOT interacted with MCE through its [SHOW "Energy Audit" if VAUDIT\_FL = 1 ELSE SHOW "eNewsletter" if VeNEWS\_FL = 1, ELSE SHOW "CoolCalifornia Challenge" if VCoolCA\_FL = 1, ELSE SHOW "Multifamily Technical Assistance and Program Communication" if "VMFC\_FL = 1], what is the likelihood that you would have installed exactly the same energy saving equipment **within 12 months of when you did it?**

Response	Total
Total Respondents	141
	100%
Extremely Likely (8-10)	84
	60%
Somewhat Likely (6-7)	24
	17%
Neutral (5)	15
	11%
Somewhat Unlikely (3-4)	14
	10%
Not at All Likely (0-2)	4
	3%

Response	Total
Mean	7.7
Standard Deviation	2.5

- IN5. When do you think you would have installed the energy saving equipment had you not interacted with MCE through its [SHOW “Energy Audit” if VAUDIT\_FL = 1 ELSE SHOW “eNewsletter” if VeNEWS\_FL = 1, ELSE SHOW “CoolCalifornia Challenge” if VCoolCA\_FL = 1, ELSE SHOW “Multifamily Technical Assistance and Program Communication” if VMFC\_FL = 1]? Please answer relative to the date that you **actually** installed the energy saving equipment:

Response	Total
<b>Total Respondents</b>	<b>161</b>
	<b>100%</b>
At the same time	65
	40%
Within 6 months	12
	7%
More than 6 months up to 1 year later	19
	12%
More than 1 year up to 2 years later	17
	11%
More than 2 years up to 3 years later	4
	2%
More than 3 years up to 4 years later	1
	1%
More than 4 years later	1
	1%
Not sure	42
	26%

- IN6. Why do you think it would have been over 4 years later? [OPEN END]

Response	Total
<b>Total Respondents</b>	<b>1</b>
	<b>100%</b>
I would have waited until the old equipment became unusable, however long that took	1
	100%

#### Level of Influence of Non-Resource Activity on EE Actions

The following questions are about the level of influence of MCE and its energy savings programs on your decision to change your behavior to reduce your energy use.

- IN1a. On a scale of 0 to 10, where 0 is “Not at All Influential” and 10 is “Extremely Influential”, how influential was the [SHOW “Energy Audit” if VAUDIT\_FL=1, ELSE SHOW “MCE eNewsletter” if VeNews\_FL=1, ELSE SHOW “CoolCalifornia Challenge” if vCoolCA\_FL=1, ELSE SHOW Multifamily Program Technical Assessment and

**Program Communication” if VMFC\_FL=1] in your decision to [SHOW “carry out energy savings actions” if B1≠98 OR 99]?**

MCE Non-Resource Activity	Not At All Influential (0-2)	Somewhat Uninfluential (3-4)	Neutral (5)	Somewhat Influential (6-7)	Extremely Influential (8-10)	Mean	Standard Deviation
MCE's Electronic Newsletter (N=178)	58 33%	22 12%	27 15%	37 21%	34 19%	4.5	3.1
CoolCalifornia Challenge (N=17)	4 24%	3 18%	2 12%	7 41%	1 6%	4.5	2.6

IN2a. Now we would like to ask you about the importance of MCE's [SHOW “Energy Audit” if VAUDIT\_FL = 1 ELSE SHOW “eNewsletter” if VeNEWS\_FL = 1, ELSE SHOW “CoolCalifornia Challenge” if VCoolCA\_FL = 1, ELSE SHOW “Multifamily Technical Assistance and Program Communication” if “VMFC\_FL = 1] in your decision to carry out energy saving actions compared to other factors that may have influenced your decision.

If you were given a TOTAL of 10 points to reflect the importance of MCE's energy saving related activity in your decision to [SHOW “carry out energy saving actions” if B1≠ 98 OR 99], and you had to divide those 10 points between (1) MCE's [SHOW “Energy Audit” if VAUDIT\_FL = 1 ELSE SHOW “eNewsletter” if VeNEWS\_FL = 1, ELSE SHOW “CoolCalifornia Challenge” if VCoolCA\_FL = 1, ELSE SHOW “Multifamily Technical Assistance and Program Communication” if “VMFC\_FL = 1] and (2) any OTHER factors, how many points would you give to the importance of your interaction with MCE? Your best estimate is fine. [NUMERIC 0-10] [NOTE TO PROGRAMMER: PLEASE ADD A CHECK FOR THE TOTAL OF A AND B/INFLUENCE SCORES BELOW. RESPONSES TO A AND B BELOW SHOULD SUM UP TO 10. IF THE TOTAL IS MORE OR LESS THAN 10, SHOW “YOUR SCORES FOR THE TWO OPTIONS BELOW SHOULD BE EQUAL TO 10. PLEASE REVIEW YOUR RESPONSES.”]

Response	Mean
<b>Total Respondents</b>	<b>209</b>
Other Influencing Factors	Mean= 7
	Standard deviation= 2
MCE's Energy Audit, eNewsletter, CoolCA Challenge, or Multifamily Technical Assistance and Program Communication	Mean= 3
	Standard deviation= 2

IN20a. Please list up to three other influencing factors on your decision to take energy saving actions. [OPEN END – ALLOW FOR UP TO THREE RESPONSES]

Response	Total
<b>Total Respondents</b>	<b>158</b>
	<b>100%</b>
Awareness and/or Concern for Environment/Climate Change	74
	47%
Cost savings	57
	36%
General knowledge	24
	15%
Public opinion/word-of-mouth	22
	14%

Response	Total
Literature/Media/News	22
	14%
Influenced by Utility, Energy Service Provider, or EE Organizations	19
	12%
EE Program Participation/Incentive/Rebate	14
	9%
Switching to renewable energy source	13
	8%
Sense of responsibility	13
	8%
Lifestyle/personal choice (prefer to be EE)	11
	7%
Desire to be more energy efficient/save energy	10
	6%
Professional knowledge/advice (e.g., architect, contractor, etc.)	9
	6%
Desire to lower carbon footprint	9
	6%
Increase Comfort	5
	3%
Better/more efficient equipment	5
	3%
Interest in technology	4
	3%
New Construction/Remodeling/building code	3
	2%
Value Add to Property	2
	1%
Tax Credit	2
	1%
Disatisfaction with energy service provider	2
	1%
Property is already EE	2
	1%
Equipment Compatibility (e.g., smart home)	1
	1%
Necessity for new equipment	0

Response	Total
	0%
Other/Miscellaneous	13
	8%
Not sure	0
	0%
Not Applicable	6
	4%

IN3a. Now please think about the energy saving action(s) you would have taken if you had not interacted with MCE.

Using a scale from 0 to 10, where 0 is “Not at all likely” and 10 is “Extremely likely”, if you had not interacted with MCE through its [SHOW “Energy Audit” if VAUDIT\_FL = 1 ELSE SHOW “eNewsletter” if VeNEWS\_FL = 1, ELSE SHOW “CoolCalifornia Challenge” if VCoolCA\_FL = 1, ELSE SHOW “Multifamily Technical Assistance and Program Communication” if “VMFC\_FL = 1], what is the likelihood that you would have taken the exact same energy saving action(s) either at the same time or later?

Response	Total
<b>Total Respondents</b>	<b>189</b>
	<b>100%</b>
Extremely Likely (8-10)	131
	69%
Somewhat Likely (6-7)	25
	13%
Neutral (5)	17
	9%
Somewhat Unlikely (3-4)	12
	6%
Not at All Likely (0-2)	4
	2%
Mean	8.2
Standard Deviation	2.3

IN4a. Using the same scale from 0 to 10, if you had NOT interacted with MCE through its [SHOW “Energy Audit” if VAUDIT\_FL = 1 ELSE SHOW “eNewsletter” if VeNEWS\_FL = 1, ELSE SHOW “CoolCalifornia Challenge” if VCoolCA\_FL = 1, ELSE SHOW “Multifamily Technical Assistance and Program Communication” if “VMFC\_FL = 1], what is the likelihood that you would have taken the same energy saving action(s) **within 12 months of when you did it?**

Response	Total
<b>Total Respondents</b>	<b>177</b>
	<b>100%</b>
Extremely Likely (8-10)	125
	71%
Somewhat Likely (6-7)	20



Response	Total
	11%
Neutral (5)	20
	11%
Somewhat Unlikely (3-4)	11
	6%
Not at All Likely (0-2)	1
	1%
Mean	8.3
Standard Deviation	2.2

IN5a. When do you think you would have taken the energy saving action(s) had you not interacted with MCE through its [SHOW “Energy Audit” if VAUDIT\_FL = 1 ELSE SHOW “eNewsletter” if VeNEWS\_FL = 1, ELSE SHOW “CoolCalifornia Challenge” if VCoolCA\_FL = 1, ELSE SHOW “Multifamily Technical Assistance and Program Communication” if VMFC\_FL = 1]? Please answer relative to the date that you **started taking the energy saving action(s)**:

Response	Total
<b>Total Respondents</b>	<b>206</b>
	<b>100%</b>
At the same time	103
	50%
Within 6 months	26
	13%
More than 6 months up to 1 year later	18
	9%
More than 1 year up to 2 years later	11
	5%
More than 2 years up to 3 years later	3
	1%
More than 3 years up to 4 years later	2
	1%
More than 4 years later	1
	<1%
Not sure	42
	20%

IN6a. Why do you think it would have been over 4 years later? [OPEN END]

#### Awareness of EE PA Resource Programs

AW1a. Prior to this study, were you aware of any energy saving program(s) offered by California energy service providers (like Pacific Gas & Electric Company and Bay Area Regional Energy Network) that offer rebates or incentives for installation of equipment such as energy saving lighting, heating or cooling equipment, water saving equipment, or insulation and air sealing?

Response	Total
Total Respondents	260
	100%
Yes	200
	77%
No	60
	23%

AW1b. You mentioned that you received rebates and/or incentives from California energy service providers or utilities for some of the energy equipment you had installed.

Are you aware of any other energy saving program(s) offered by California energy service providers or utilities that offer rebates or incentives for installation of energy efficient equipment?

Response	Total
Total Respondents	76
	100%
Yes	29
	38%
No	47
	62%

AW2. What energy saving program(s) have you heard of? [OPEN END] [ADD CHECKBOX FOR PREFER NOT TO ANSWER]

Response	Total
Total Respondents	229
	100%
Energy Provider or Utility Website	55
	24%
Energy Bill	30
	13%
Word-of-Mouth (i.e., Friend, Family, Colleague)	27
	12%
MCE eNewsletter	19
	8%
Contractor	7
	3%
Social Media (e.g., Facebook, Twitter, Instagram)	6
	3%
Other	48
	21%
Not sure	37
	16%

AW2a. Where did you first hear about the energy saving program(s)?

Response	Total
Total Respondents	47
	100%
Workplace	12
	26%
General News Media	8
	17%
Energy Provider/Energy Groups	7
	15%
General Web Search	7
	15%
Local Government	5
	11%
Workshop/Classes	3
	6%
Other	5
	11%

AW3. Thinking about the energy saving upgrades you completed, how did you learn about the rebates or incentives offered for upgrading or installing equipment? [OPEN END] [ADD CHECKBOX FOR PREFER NOT TO ANSWER]

#### Drivers and Barriers to Participation in PA EE Resource Programs

Next, we'd like to learn about your motivations for installing energy saving equipment or any challenges you may have encountered in doing so.

BD3. What would encourage you to install or upgrade energy saving equipment through your utility or energy service provider? [OPEN END, CHECKBOX FOR NOT SURE]

Response	Total
Total Respondents	214
	100%
Bigger Cashback/Rebates/Incentives	76
	36%
Cost savings/rate reduction	30
	14%
Low to no out-of-pocket costs	21
	10%
Program for renters or home ownership	18
	8%
Incentives for other upgrades such as solar, EV, electrification, etc.	17
	8%
Improved ME&O	16

Response	Total
	7%
Information on cost effectiveness and efficiency equipment upgrades	13
	6%
Financing Options	10
	5%
Streamlined EE Program Application Process	7
	3%
Detailed program information about incentivized equipment	7
	3%
Ease of participation	5
	2%
Proof of environmental impact	5
	2%
Accredited trustworthy contractors	4
	2%
Tax Credit	4
	2%
Dedicated Energy Advisors/Consultants	3
	1%
Quality equipment	3
	1%
Government Policy/Regulation of EE/Renewable Equipment Vendors that protects consumers	3
	1%
Necessity/Need for equipment replacement	3
	1%
Quick return on investment	3
	1%
Program eligibility	2
	1%
Financial capacity	2
	1%
Energy savings	2
	1%
Personalized EE recommendations	1
	<1%
Other	5
	2%
Nothing - property already EE	10
	5%
Nothing	6

Response	Total
	3%
Not Applicable	5
	2%

#### MCE Program Satisfaction and Improvement

PS1. On a scale from 0 to 10, where 0 is “Not at all Satisfied” and 10 is “Highly Satisfied,” how satisfied are you with the energy saving information you received through the following MCE energy saving related activities?

MCE Non-Resource Activity	Not At All Satisfied (0-2)	Somewhat Dissatisfied (3-4)	Neutral (5)	Somewhat Satisfied (6-7)	Extremely Satisfied (8-10)	Mean	Standard Deviation
MCE’s Electronic Newsletter (N=290)	16 7%	8 3%	31 13%	42 18%	141 59%	7.4	2.5
Small Commercial Energy Audit (N=22)	0 0%	1 6%	2 12%	1 6%	13 76%	8.4	2.9
CoolCalifornia Challenge (N=20)	0 0%	0 0%	1 6%	6 35%	10 59%	7.8	1.6
Multifamily Program Technical Assistance/ Program Communication (N=4)	0 0%	0 0%	0 0%	0 0%	4 100%	9.5	0.6

PS1a. What is the reason for this rating? [OPEN END]

Response	Total
<b>Total Respondents</b>	<b>198</b>
	<b>100%</b>
Provides good and actionable information	76
	38%
Not very useful/relevant	27
	14%
No new information provided	17
	9%
Lack of interest in information material or topics covered	12
	6%
Perceives MCE as Trustworthy/Serving the Environment	10
	5%
Satisfied with MCE overall	10
	5%
Need more relevant information regarding energy efficient equipment or saving energy	9
	5%
Increased awareness regarding energy efficiency, energy and cost savings	8
	4%
Did not receive any information	7
	4%

Response	Total
Satisfied with non-resource activity	5
	3%
Convenient/Ease of receiving information	4
	2%
Received relevant information in a timely manner	4
	2%
There's always room for improvement	3
	2%
Good outreach program	3
	2%
Dissatisfied with MCE	2
	1%
Satisfied with resource program	2
	1%
Does not offer any new information	2
	1%
Lacks information on customer concerns (e.g., energy storage)	1
	1%
Dissatisfied with PG&E	1
	1%
Other	7
	4%
Nothing	1
	1%
Refused	78
	28%
Not Applicable	3
	2%

PS2. On the same 10-point scale, how satisfied are you with the following MCE energy saving related activities overall?

MCE Non-Resource Activity	Not At All Satisfied (0-2)	Somewhat Dissatisfied (3-4)	Neutral (5)	Somewhat Satisfied (6-7)	Extremely Satisfied (8-10)	Mean	Standard Deviation
MCE's Electronic Newsletter (N=234)	1 6%	2 12%	1 6%	1 6%	12 71%	7.5	2.6
Small Commercial Energy Audit (N=17)	14 6%	9 4%	22 9%	47 20%	142 61%	7.5	3.0
CoolCalifornia Challenge (N=15)	0 0%	1 7%	1 7%	4 27%	9 60%	7.7	2.0
Multifamily Program Technical Assistance / Program Communication (N=4)	0 0%	0 0%	0 0%	1 25%	3 75%	8.8	1.9

PS2a. What is the reason for this rating? [OPEN END]

Response	Total
<b>Total Respondents</b>	<b>154</b>
	<b>100%</b>
Provides good and actionable information	29
	19%
Satisfied with non-resource activity	20
	13%
Satisfied with MCE's Deep Green Renewable Energy Service	19
	12%
Satisfied with MCE Overall	15
	10%
Good start but need to do more	10
	6%
Perceives MCE as Trustworthy/Serving the Environment	10
	6%
Not very useful/relevant	9
	6%
Need more information regarding energy efficient equipment	8
	5%
Nothing (don't read materials)/Don't remember	5
	3%
Increased awareness regarding energy efficiency, energy and cost savings	4
	3%
Dissatisfied with Utility Company	4
	3%
Dissatisfied with MCE	4
	3%
Satisfied with Resource Program	3
	2%
Dissatisfied with involuntary opt-in	2
	1%
Presents information very well	2
	1%
Cost savings while helping the environment	1
	1%
There's always room for improvement	1
	1%
Other	14
	9%
Nothing	2

Response	Total
	1%
Prefer to not answer	115
	43%
Not applicable	1
	1%

PS3. Do you have any suggestions to improve MCE's energy efficiency program activities? [OPEN END]

Response	Total
<b>Total Respondents</b>	<b>121</b>
	<b>100%</b>
Add more outreach channels such as local/community newspapers for ME&O activities, energy bill inserts	17
	14%
Increase customer engagement	15
	12%
Provide rebates/financing options	15
	12%
Provide more practical/relevant information regarding saving energy and/or energy efficient equipment	10
	8%
Provide information on cost savings from energy saved regularly	9
	7%
Increase frequency of ME&O activities	8
	7%
Offer incentives or assistance for installation of solar equipment	8
	7%
Expand service territory	7
	6%
Keep up the good work!	7
	6%
Expand programs to include EV	5
	4%
Provide program application assistance/support	4
	3%
Increase ME&O regarding Deep Green Program	3
	2%
Provide energy saving options/programs for renters	3
	2%
Provide information on other EE programs	3
	2%
Expand Commercial EE Program	2
	2%



Response	Total
Increase renewable energy sources	1
	1%
Transparency in billing	1
	1%
Provide customers with a list of rebated measures	1
	1%
Provide information on electrification	1
	1%
Target high energy users for programs	1
	1%
Provide detail information regarding installation of solar panels	1
	1%
Other	12
	10%
None/Nothing	147
	71%
Not sure	61
	28%
Prefer not to answer	14
	7%
Not applicable	3
	2%

## Demographics

D1a. How many housing units are in your building?

Response	Total
<b>Total Respondents</b>	<b>56</b>
	<b>100%</b>
101 or more	3
	5%
51 to 100	0
	0%
10 to 50	14
	25%
4-9	22
	39%
2-3	15
	27%
1	2

Response	Total
	4%
Not sure	0
	0%

D2. How long have you lived in this residence?

Response	Total
<b>Total Respondents</b>	<b>248</b>
	<b>100%</b>
More than 20 years	102
	41%
11-20 years	64
	26%
4-10 years	58
	23%
1-3 years	21
	8%
Less than 1 year	3
	1%

D3. Including yourself, how many people currently live in your residence year-round? [NUMERIC OPEN END 0-10]

Response	Total
<b>Total Respondents</b>	<b>248</b>
	<b>100%</b>
1	32
	13%
2	126
	51%
3	50
	20%
4	30
	12%
5	7
	3%
6	2
	1%
7	1
	<1%
Mean	2.5
Standard Deviation	1.1

D3a. How many people under the age of 18 live in your residence? [NUMERIC OPEN END 0-D3 QUANTITY]

Response	Total
Total Respondents	216
	100%
0	157
	73%
1	27
	13%
2	26
	12%
3	6
	3%
Mean	0.5
Standard Deviation	0.8

D4. Approximately when was your [READ “residence” IF SF\_FL = 1] ELSE READ “building”] first built?

Response	Total
Total Respondents	304
	100%
Before 1950	70
	23%
1950-1959	54
	18%
1960-1969	48
	16%
1970-1979	42
	14%
1980-1989	36
	12%
1990-1999	19
	6%
2000-2005	11
	4%
2006-2009	7
	2%
2010 or later	7
	2%
Not sure	10
	3%

D11. Which of the following best describes your ethnicity? [MULTIPLE RESPONSE; RESPONSE NOT REQUIRED]

Response	Total
<b>Total Respondents</b>	<b>303</b>
	<b>100%</b>
White or Caucasian	241
	80%
Hispanic, Latino, or Spanish	9
	3%
African American	5
	2%
Chinese	4
	1%
Korean	2
	1%
Other Asian	2
	1%
American Indian or Alaskan Native	1
	<1%
Other Pacific Islander	1
	<1%
Vietnamese	0
	0%
Japanese	0
	0%
Filipino	0
	0%
Native Hawaiian	0
	0%
Samoan	0
	0%
Other	5
	2%
Prefer not to answer	43
	14%

D12. What was your annual household income from all sources in 2016, before taxes?

Response	Total
<b>Total Respondents</b>	<b>248</b>
	<b>100%</b>
\$200,000 or more	43
	17%

Response	Total
\$150,000 to \$199,999	29
	12%
\$100,000 to \$149,999	34
	14%
\$75,000 to \$99,999	28
	11%
\$60,000 to \$74,999	19
	8%
\$50,000 to \$59,999	9
	4%
\$40,000 to \$49,999	4
	2%
\$30,000 to \$39,999	3
	1%
\$20,000 to \$29,999	5
	2%
Less than \$20,000	0
	0%
Prefer not to answer	74
	30%

D12a. Is it... [RESPONSE NOT REQUIRED]

D13. Which utilities or energy efficiency service providers currently provide your property's electric and/or natural gas services? [MULTIPLE RESPONSE]

Response	Total
<b>Total Respondents</b>	<b>336</b>
	<b>100%</b>
PG&E	266
	79%
MCE	247
	74%
Solar Panels	8
	28%
East Bay Community Energy	3
	10%
SMUD	2
	7%
Sonoma Clean Power	2
	7%
Alameda Municipal Power	1

Response	Total
	3%
Arcadia	1
	3%
Dominion	1
	3%
McPhail Fuel Company Propane Services	1
	3%
Monterey Bay Community Power	1
	3%
Peninsula Clean Energy and PG&E	1
	3%
Propane service for Gas	1
	3%
PV system	1
	3%
SCE	1
	3%
Not Sure	6
	2%
Not Applicable/Moved	5
	17%

## Firmographics

F1. Which of the following best describes the ownership of this property?

Response	Total
<b>Total Respondents</b>	<b>88</b>
	<b>100%</b>
My company rents this property	28
	32%
My company owns and occupies this property	27
	31%
My company owns this property, but it is rented to someone else	1
	1%
Not sure	15
	17%
Prefer not to answer	17
	19%

F2. What is the primary heating fuel type for the property?

Response	Total
Total Respondents	88
	100%
Gas	43
	49%
Electric	39
	44%
Propane	2
	2%
Something else	0
	0%
Not sure	2
	2%
Prefer to not answer	0
	0%
Not Applicable	2
	2%

F3. What is the primary water heating fuel type for the property?

Response	Total
Total Respondents	88
	100%
Gas	53
	60%
Electric	22
	25%
Not sure	8
	9%
Not Applicable	3
	3%
Propane	2
	2%
Other	0
	0%
Prefer to not answer	0
	0%

F4. How many years old is this property? [NUMERIC OPEN END, 0 TO 150]

Response	Total
Total Respondents	32
	100%

Response	Total
How many years old is this property? (Average Age of Property)	Mean = 53
	Standard deviation = 24
Not Sure	11
	34%
Prefer to not answer	0
	0%

F4a. Do you know the approximate age? Would you say it is...?

Response	Total
<b>Total Respondents</b>	<b>11</b>
	<b>100%</b>
30 years or more	8
	73%
20-29 years	1
	9%
10-19 years	0
	0%
5-9 years	0
	0%
2-4 years	0
	0
Less than 2 years	0
	0%
Not sure	2
	18%
Prefer not to answer	0
	0%

F5. How many employees, full plus part-time, are employed at this property? [NUMERIC OPEN END, 0 TO 2000]

Response	Total
<b>Total Respondents</b>	<b>29</b>
	<b>100%</b>
Number of employees, full plus part-time, employed at this property	Mean= 80
	Standard deviation= 310
Not sure	11
	38%
Prefer not to answer	18



Response	Total
	62%

F5a. Do you know the approximate number of employees? Would you say it is...?

Response	Total
<b>Total Respondents</b>	<b>11</b>
	<b>100%</b>
Less than 10	1
	9%
10-49	0
	0%
50-99	1
	9%
100-249	0
	0%
250-499	0
	0%
500 or more	0
	0%
Not sure	7
	64%
Prefer not to answer	2
	18%

## Appendix E. Survey Response Rate Methodology

The survey response rate is the number of completed interviews divided by the total number of potentially eligible respondents. We calculated RR3 using the standards and formulas set forth by the AAPOR.<sup>42</sup> The formulas used to calculate RR3 are presented below. The definitions of the letters used in the formulas are displayed in the Survey Disposition tables (Table 6 and Table 7). The RR for this survey was 8%.

Equation 2. Response Rate Formula

$$RR3 = \frac{I}{(I + N + e1(U1 + e2 * U2))}$$

Where:

$$e1 = \frac{(I + N)}{(I + N + X1)}$$

$$e2 = \frac{(I + N + X1 + U1)}{(I + N + X1 + U1 + X2)}$$

<sup>42</sup> Standard Definitions: Final Dispositions of Case Codes and Outcome Rates for Surveys, AAPOR, 2011.

[http://www.aapor.org/AM/Template.cfm?Section=Standard\\_Definitions2&Template=/CM/ContentDisplay.cfm&ContentID=3156](http://www.aapor.org/AM/Template.cfm?Section=Standard_Definitions2&Template=/CM/ContentDisplay.cfm&ContentID=3156).

## Appendix F. Attributable Savings by End Use and Non-Resource Activity

Table 31 and Table 34 present the energy savings that are attributable to each of the evaluated non-resource activities disaggregated by end use.

Table 31. Attributable Savings from Rebated and Non-Rebated Measures for MCE Small Commercial Audits by End Use

Measures	Attributable Gross kWh	Attributable Net kWh	Attributable Gross Therms	Attributable Net Therms
<b>Rebated Measures</b>				
Appliances	-	-	-	-
Building Shell	-	-	-	-
Compressed Air	-	-	-	-
Food Service	-	-	-	-
HVAC	21	12	(8)	(5)
Lighting	592,969	539,601	(1,126)	(1,025)
Office Equipment	-	-	-	-
Other	-	-	-	-
Pool	-	-	-	-
Refrigeration	-	-	-	-
Solar	-	-	-	-
Water Heating	-	-	-	-
<b>Total</b>	<b>592,989</b>	<b>539,614</b>	<b>(1,134)</b>	<b>(1,030)</b>
<b>Non-Rebated Measures</b>				
Appliances	126	39	(5)	(3)
Building Shell	-	-	-	-
Compressed Air	-	-	-	-
Food Service	21	6	2	1
HVAC	10	7	(1)	(1)
Lighting	-	-	-	-
Office Equipment	2,715	1,629	(0)	-
Other	-	-	-	-
Pool	-	-	-	-
Refrigeration	-	-	-	-
Solar	-	-	-	-
Water Heating	-	-	-	-
<b>Total</b>	<b>2,871</b>	<b>1,681</b>	<b>(4)</b>	<b>(3)</b>

Table 32. Attributable Savings from Rebated and Non-Rebated Measures for MCE eNewsletters by End Use

Measures	Attributable Gross kWh	Attributable Net kWh	Attributable Gross Therms	Attributable Net Therms
<b>Rebated Measures</b>				
Appliances	174	54	4	2
Building Shell	351	98	110	31
Compressed Air	-	-	-	-
Food Service	-	-	-	-
HVAC	1,749	1,287	(35)	(21)
Lighting	6,583	5,990	(28)	(26)
Office Equipment	776	465	-	-
Other	-	-	-	-
Pool	-	-	-	-
Refrigeration	-	-	-	-
Solar	2,264	1,245	-	-
Water Heating	111	72	6	4
<b>Total</b>	<b>12,007</b>	<b>9,212</b>	<b>56</b>	<b>(10)</b>
<b>Non-Rebated Measures</b>				
Appliances	-	-	-	-
Building Shell	1,386	388	105	29
Compressed Air	-	-	-	-
Food Service	-	-	-	1
HVAC	14,103	10,292	(42)	(11)
Lighting	-	-	-	-
Office Equipment	2,153	1,292	-	-
Other	2,908	1,600	6	3
Pool	518	285	-	-
Refrigeration	-	-	-	-
Solar	1,125	619	-	-
Water Heating	896	582	163	106
<b>Total</b>	<b>23,090</b>	<b>15,057</b>	<b>232</b>	<b>129</b>

Table 33. Attributable Savings from Rebated and Non-Rebated Measures for MCE CoolCA Challenge by End Use

Measures	Attributable Gross kWh	Attributable Net kWh	Attributable Gross Therms	Attributable Net Therms
<b>Rebated Measures</b>				
Appliances	174	54	4	2
Building Shell	351	98	110	31
Compressed Air	-	-	-	-
Food Service	-	-	-	-
HVAC	1,749	1,287	(35)	(21)
Lighting	6,583	5,990	(28)	(26)
Office Equipment	776	465	-	-
Other	-	-	-	-
Pool	-	-	-	-
Refrigeration	-	-	-	-
Solar	2,264	1,245	-	-
Water Heating	111	72	6	4
<b>Total</b>	<b>12,007</b>	<b>9,212</b>	<b>56</b>	<b>(10)</b>
<b>Non-Rebated Measures</b>				
Appliances	-	-	-	-
Building Shell	1,386	388	105	29
Compressed Air	-	-	-	-
Food Service	-	-	-	1
HVAC	14,103	10,292	(42)	(11)
Lighting	-	-	-	-
Office Equipment	2,153	1,292	-	-
Other	2,908	1,600	6	3
Pool	518	285	-	-
Refrigeration	-	-	-	-
Solar	1,125	619	-	-
Water Heating	896	582	163	106
<b>Total</b>	<b>23,090</b>	<b>15,057</b>	<b>232</b>	<b>129</b>

**Table 34. Attributable Savings from Rebated and Non-Rebated Measures for MCE Multifamily Technical Assistance by End Use**

Measures	Attributable Gross kWh	Attributable Net kWh	Attributable Gross Therms	Attributable Net Therms
<b>Rebated Measures</b>				
Appliances	-	-	-	-
Building Shell	5,025	1,407	(2)	(0)
Compressed Air	-	-	-	-
Food Service	-	-	-	-
HVAC	-	-	-	-
Lighting	112,000	101,920	(1,476)	(1,343)
Office Equipment	-	-	-	-
Other	-	-	-	-
Pool	462	254	-	-
Refrigeration	-	-	-	-
Solar	-	-	-	-
Water Heating	39	25	18	11
<b>Total</b>	<b>117,525</b>	<b>103,606</b>	<b>(1,461)</b>	<b>(1,333)</b>
<b>Non-Rebated Measures</b>				
Appliances	-	-	-	-
Building Shell	84	23	(98)	27
Compressed Air	-	-	-	-
Food Service	-	-	-	-
HVAC	-	-	-	-
Lighting	-	-	-	-
Office Equipment	-	-	-	-
Other	-	-	-	-
Pool	-	-	-	-
Refrigeration	-	-	-	-
Solar	875	481	-	-
Water Heating	650	423	(474)	308
<b>Total</b>	<b>1,609</b>	<b>927</b>	<b>(572)</b>	<b>335</b>

## Appendix G. Response to Public Comments

Table 35 presents the public comments received on the Year 1 Assessment of CCAs draft report and the evaluation team's responses.

Table 35. Public Comments on Year 1 CCA Report and Responses

Comment #	Commenter	Page in Report	Comment/Feedback	Response
1	MCE	87	MCE requests that Table 30 is expanded to show the attribution of savings from MCE's non-resource activity participants by resource program ID.	The attribution by savings by resource program ID is unavailable because survey respondents did not necessarily know from what program they received rebates. The evaluation team does have partial information based on the results of the channeling analysis, but this does not provide a full picture of the energy savings impacts by PA program. For this reason, we do not provide this disaggregation.
2	MCE	66	Similar to Table 26, MCE requests a table showing the attribution of savings by measure for rebated and non-rebated measures.	Please see Appendix F for a presentation of attributable savings by end use and non-resource activity.
3	MCE	Overarching	MCE requests that Opinion Dynamics provide additional context, if possible, as to why MCE's non-resource activity participants went on to participate in other PA resource programs?	In two places in the Year 1 CCA report, we note the possibility of residents or businesses that have participated in MCE non-resource activities may have gone on to participate in another PA's resource program. The two places we mention this are as follows: From Finding #2 on page 4 of the Executive Summary (and in the Conclusions and Recommendations): "This is likely a drastic underestimate because the non-resource activity datasets used in the analysis contained several incomplete records, thereby making it difficult to identify customers who subsequently installed EE equipment through MCE's or another PA's resource program." On page 12, the report notes the following: "Other possibilities include implementing the recommendations through participation in a similar program offered by another PA such as PG&E or BayREN, acting on the recommendations on its own outside of an EE program, or not acting on the recommendations at all." While we do not expect that this occurs with frequency, there may be cases where a resident or business received information from MCE (such as through its eNewsletter), but decided to participate in a program offered by BayREN and/or PG&E. The report mentions this as a possibility and does not attribute a high probability

				of its occurrence. We made no changes to the report based on this comment.
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