

Residential Nonparticipant Market Characterization and Barriers Study



(MA19R04-B-NP)

Summary of Findings (Final February 27, 2020)

PRODUCED IN COLLABORATION BETWEEN

NAVIGANT

ILLUME



PREPARED FOR: THE ELECTRIC AND GAS PROGRAM ADMINISTRATORS
OF MASSACHUSETTS PART OF THE RESIDENTIAL EVALUATION PROGRAM AREA

forward

In 2019, the Massachusetts Program Administrators (PAs) and Energy Efficiency Advisory Council (EEAC), undertook two initiatives to characterize residential nonparticipants of Mass Save programs and investigate barriers to participation.

The Residential Nonparticipant Customer Profile Study (Customer Profile Study), completed concurrently by DNV GL, assessed relationships between participation rates and select customer characteristics, inclusive of, but not limited to, those highlighted in the October 2018 term sheet requirements (renters, moderate income, and non-English speakers).¹ The Customer Profile Study relied on **secondary data sources**, including PA billing and tracking records from 2013-2017, US Census American Community Survey (ACS) data, third-party Experian data, and tax assessor records, to complete the statistical analysis to meet the study's objectives. DNV GL's analysis modeled results by block group, urban/rural location, and fuel type. The reader is referred to DNV GL's *Residential Nonparticipant Customer Profile Study* for more details on that study's methodology and findings.

The Residential Nonparticipant Market Characterization and Barriers Study (Market Barriers Study), this report, relies on **primary data sources** (including surveys and in-depth interviews) to characterize residential nonparticipants and provide richer insight into market barriers for the customer segments identified in the term sheet. The Market Barriers Study relied extensively on in-depth research to expand beyond the quantitative findings and explore the nuances in the barriers as well as implementation opportunities. The Customer Profile Study directly informed the Market Barriers Study; part of that study included identifying residential addresses and buildings as program participants or nonparticipants, information leveraged for this study's survey sampling strategy.

While based on different analysis and data sources, **both studies** found participation rates are negatively associated with renters, lower income, and non-English speaking customers. Further, both studies identified the need to engage more renters and non-English speakers as well as to foster community partnerships.

¹ <http://ma-eeac.org/wordpress/wp-content/uploads/Term-Sheet-10-19-18-Final.pdf>



It is important to contextualize the findings of this report by describing the PAs' efforts to engage nonparticipants. Over the years offering Mass Save programming, the PAs implemented many targeted as well as broad-market strategies highlighted in this report, including but not limited to: working through landlord associations, having a presence at first time home buyer classes, engaging with food pantries and assistance programs, and collaborating with segment-focused groups such as senior groups, veteran's groups and groups for individuals with disabilities. Mass Save also works closely with the Low Income Energy Advisory Network (LEAN) and Community Action Program agencies (CAPS) to implement energy efficiency programs for income-eligible customers.

Examples of PAs' Program Design, Outreach, and Engagement Strategies

ONGOING, PROGRAM DESIGN

- Landlord Whole Building Initiative** with 90%-100% incentive for insulation
- Moderate Income Offering** with enhanced incentives
- Income Eligible (IE) Multifamily Building Qualification**, serving 100% of building as IE if 50% qualifies
- Pre-weatherization incentives** for remediation needed before a home can be weatherized

PAST, OUTREACH & ENGAGEMENT

- Efficient Neighborhoods+** which raised incentives and income qualified entire neighborhoods
- Renew Boston Efforts** which provided concierge services to landlords, collaboration with community-based organizations to engage Cantonese and Mandarin-speaking residents in energy efficiency, and local branding and community-based outreach

ONGOING, OUTREACH & ENGAGEMENT

- Collaboration with stakeholders to reach customers** such as The Salvation Army's Good Neighbor Energy Fund and assistance programs
- Bill inserts** sent regularly
- Income Eligible Program literature in 13 languages** provided to CAP Agencies and stakeholder groups
- Data Exchange with the MA Department of Transitional Services** increasing the number of customers on utility discount rate

The PAs report continuing to evolve their strategies to reach nonparticipants. Efforts include community-based initiatives (including municipal and engagement strategy to be implemented in January 2020²), increased linguistic support for Limited English Proficiency customers, increased program offerings and incentives to Moderate Income customers, and efforts to engage landlords to provide program access to renters³.

This Residential Nonparticipant Study intends to support these ongoing efforts by providing insights to inform their engagement strategies.

² <https://www.masssave.com/en/learn/partners/municipal-partnership/>

³ Presentation on Serving Hard to Reach Customers provided by Amanda Formica, Stephan Wollenburg, Katelyn Mazuera,, and Deb Sas

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About the Residential Nonparticipant Market Characterization and Barriers Study

The PAs and Energy Efficiency Advisory Council (EEAC) consultants enlisted the Residential Evaluation Team (ILLUME and Cadeo under contract with Navigant) to conduct a **Residential Market Characterization and Barriers Study**. The impetus of this study was to meet the requirements of the term sheet established as part of negotiations related to the approval of the 2019-2021 Energy Efficiency Plan, which required the PAs to conduct tailored evaluations that address participation levels and potential unaddressed barriers.

Below highlights the objectives, groups of interest, and research completed.

Research Objectives

To help the PAs meet the term sheet requirements and better understand their residential customers that, to date, have not participated in Mass Save programs with three study outcomes:

1. Characterize nonparticipants
2. Investigate barriers to participation
3. Identify engagement opportunities

Customer Groups of Interest

Groups of interest called out in the term sheet, and highlighted throughout this report

- Renters
- Moderate income (60 - 80 percent of state median income (SMI))
- Non-English speakers (also referred to in this report as limited English proficiency customers)

Multi-Faceted Multi-Mode Research Approach

Study results are based on a complex and exhaustive research approach to minimize response bias and dig deeply into customers' attitudes, needs, and perceptions

⁴ Source: October 19, 2018 Final Version Term sheet provided on the MA-EEAC website as part of 2019 - 2021 Energy Efficiency Plan.



Notable Key Findings

The research drew out many findings related to **nonparticipant characteristics, barriers, and engagement opportunities**. Below are a few that rose to the top.

Nonparticipant Characteristics

Nonparticipants are more likely than participants to:

Live in rental units

Only have a high school education or no secondary school degree

Be low-to-moderate income households

Report lower awareness of Mass Save

Be harder to reach, even with greater effort and financial incentives, as evidenced by this study's survey effort

Participation Barriers

Research found nonparticipants:

Often expressed a lack of **trust** in the government and their landlords, and have a fear of scams

Prioritized their time and resources on needs that they considered more fundamental to living (food, shelter)

Needed more **information** or **understanding** of Mass Save offerings, participation processes, and benefits

Perceived energy efficiency as **irrelevant** or **not applicable to them**

Believed Mass Save is government-funded, deterring participation

Program Design and Implementation Opportunities

Recommendations center around:

Engaging trusted community organizations and strengthening relationships with individuals or organizations within communities to connect directly with nonparticipating customers

Shifting focus from raising awareness to increasing understanding of Mass Save benefits

Designing a multi-faceted, multi-modal outreach strategy that meets the specific needs of target customer groups

Messaging to impress the relevance of programs and services to them, accounting for their unique circumstances

Providing personal and step-by-step guidance through program processes, particularly for those who speak a language other than English

Designing and/or implementing programs that directly overcome the barriers identified in this research (e.g., working directly with landlords, providing in-person step-by-step support)



Study Methodology

The Residential Nonparticipant Study used a multi-pronged research approach to reach customers and address the research questions, balancing quantitative and qualitative research activities. All survey results represented in this report are weighted to represent statewide participation rates. See Appendix A for detailed information about each activity.

PA Interviews

Interviewed implementation, evaluation, and marketing staff from five PAs to gain insights on hard-to-reach populations and how the PAs are currently attempting to reach these groups.

Community Organization Interviews

Interviewed 18 community organizations to learn about the communities and cultures of non-participants. Targeted organizations that serve renters, people with limited English proficiency, and moderate or lower income customers. Interviewed ABDC, Action Inc, Community Action Pioneer Valley, Springfield Partners, the Chinese Progressive Association, Boston Climate Action Network, Good Neighbor Energy Fund, All in Energy, Centro Latino, Coalition for Social Justice, Codman Square Neighborhood Development Corp, ener-G-save, Grinspoon Foundation, GreenRoots Chelsea, Housing Support Inc, Summit ElderCare, Town of Nantucket Energy Office, We The Villagers, and Gloucester Housing Authority.

Customer Surveys (web/phone/mail)

The multi-mode survey (web, phone, and abbreviated mail) captured data from over 1,600 customers. Took numerous actions to increase response rates, including multiple attempts, \$5 pre-incentives, and \$20 incentives for completing surveys. Respondents had the option of taking the survey in English, Spanish, Portuguese, or Mandarin Chinese.

Customer Surveys (door-to-door)

Targeted eight census tracts with the lowest response for door-to-door surveys for nonparticipants on our list that had not responded to any of survey requests. Completed 24 surveys out of 526 attempts. Unsuccessful attempts were typically due to customer refusals, customers not at home, vacant or unsafe properties, and missing unit information for multifamily buildings.

In-Person Interviews

Interviewed 14 door-to-door survey respondents willing to spend additional time with the interview team. Interviewers probed on perceptions, understanding, and participation in Mass Save programs dynamically and in greater depth than the survey. Customers received an additional \$30 incentive for their time.

Intercept Interviews at Community Organizations

Conducted 59 intercept interviews with customers at two community organizations in Springfield (Springfield Partners and Arise for Social Justice) and Codman Square in Boston. Interviews focused questions on Mass Save awareness and understanding, household needs, and trusted resources. Those responding to intercept interviews received \$25 for their time.

Customer Follow-Up Phone Interviews

Completed 16 follow-up, in-depth phone interviews with nonparticipant customers who responded to the survey to dig deeper into barriers. Respondents received an additional \$50 for their time.

Landlord/Property Manager Surveys and Interviews

Conducted 19 surveys and 5 follow-up interviews with landlords and property managers to gain a deeper understanding of their perspectives on Mass Save programming, specifically participation barriers for them or their renters and insights on enhancing engagement strategies.

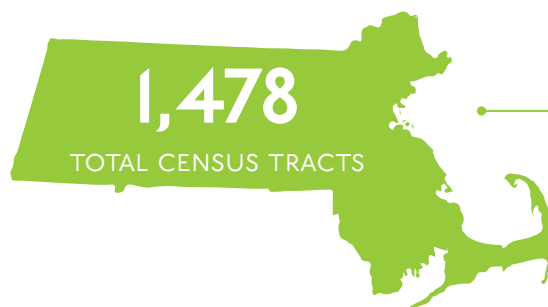


TWO-STAGE SAMPLING

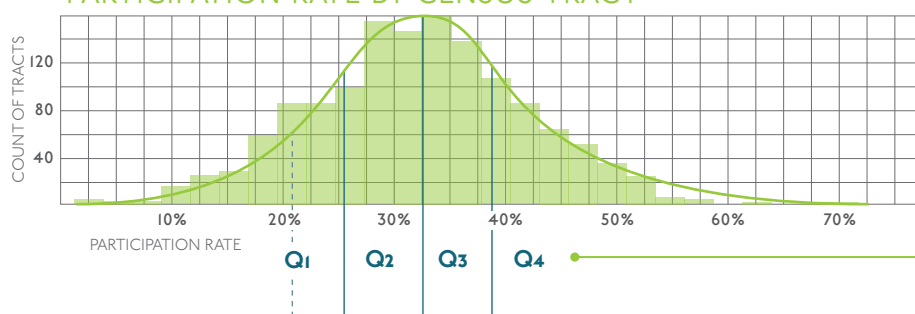
The team employed a two-stage sampling approach that balanced inclusivity (i.e., every residential customer in the state could be sampled) with prioritizing nonparticipating customers (i.e., oversampling tracts with lower program participation rates).

STAGE 1 SAMPLING CENSUS TRACTS

The first stage identified 39 Census tracts for inclusion in the study: 35 randomly selected tracts based on historical program participation and 4 additional tracts of interest to the PAs.



PARTICIPATION RATE BY CENSUS TRACT



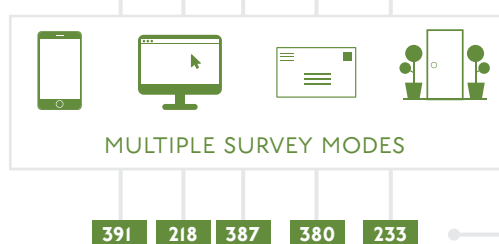
Q1A Q1B

13 6 9 7 4

39
TRACTS
SAMPLED

STAGE 2 SAMPLING CUSTOMERS

The second level entailed randomly sampling households within the 39 sampled Census tracts.



2,730
TARGETED
SURVEYS

1,609
COMPLETED
SURVEYS

DETAILS

Excluded 105 of these 1,478 tracts because:

- 1) Not served by electric or gas PA
- 2) Too few customers (less than 350 unique accounts)
- 3) Located in Lawrence, Andover, or North Andover—towns affected by 2018 fires

Participation Rate Calculation: Using PA tracking data, the number of unique locations in a tract that participated in a PA program (at least once) between 2013 and 2017, divided by the number of unique locations in that tract (based on 2013-2017 PA billing data).

Created four participation-based quartiles: 343 tracts in each quartile

Bifurcated the first quartile to allow for greater focus on tracts with the lowest participation rates in the state; resulted in five strata

The team oversampled tracts from the lower participation strata to ensure greater inclusion of nonparticipating households, which were the focus of this study

The team's target was to complete 70 surveys per tract using a variety of outreach methods. Each tract-specific sample included both participating and nonparticipating households. In total, the team targeted 1,780 surveys with nonparticipants and 950 with participants.

As discussed later, the team did not reach its target of 2,730 surveys. Of the 1,609 surveys, 836 were completed by nonparticipants, 773 by participants. The team weighted the data gathered through web, phone, and mail surveys to represent statewide participation rates.

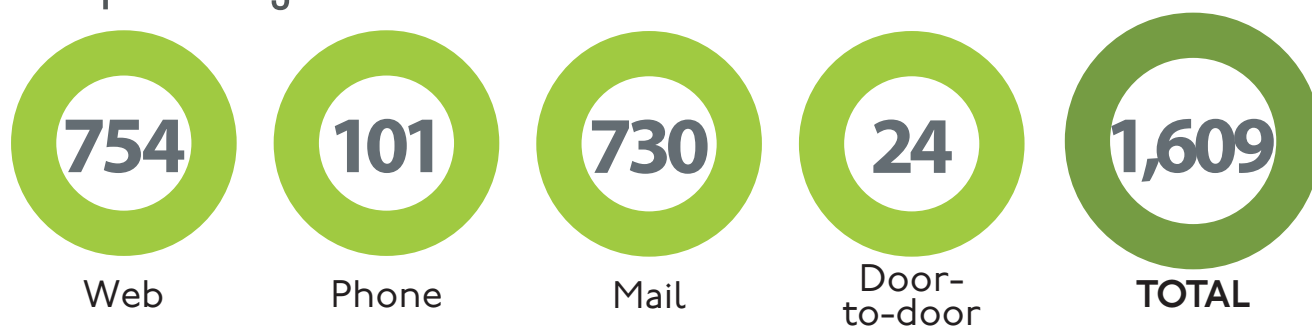
Survey Methodology

For this study, the team attempted to reach as many sampled customers as possible to minimize nonresponse bias and reflect the needs and characteristics of the full range of nonparticipating customers.

The team employed a multi-mode survey approach with various touchpoints to encourage participation in the study. The effort was more extensive than any general population survey completed by the PAs to date.

This approach resulted in a 24% response rate. It is noteworthy that with a high effort and financial incentives the survey was unable to speak with three quarters of sampled respondents, indicating the challenges in reaching nonparticipating customers.

Multiple Survey Modes



Inclusive of...

Languages for all materials

ENGLISH

SPANISH

PORTUGUESE

CHINESE
(MANDARIN)

Various Touchpoints

INVITATION
LETTERS AND
EMAILS

REMINDER
LETTERS AND
EMAILS

LEAVE
BEHIND
POSTCARDS

Incentives

\$20
VISA
GIFT
CARD

\$5 IN
MAIL
SURVEY
PACKAGE

Different Data Collection Modes Captured Different Customers

Reviewing customer characteristics for those responding to each survey mode reveal two overarching take-aways:

- The team's multi-mode approach reached customers with different characteristics
- Different groups are best reached using different (and multiple) approaches

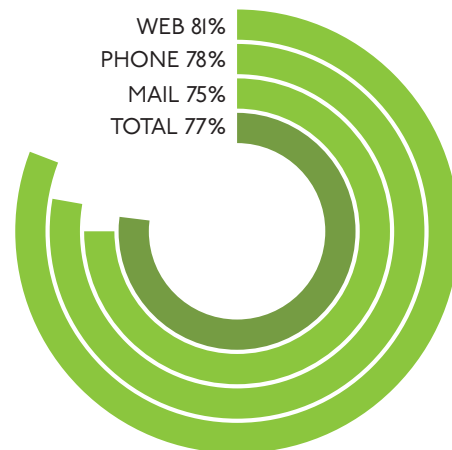
The analysis below represents both participants and nonparticipants. The trends hold true when analyzing participants and nonparticipants separately.

Web captured individuals who were higher income, more aware of Mass Save and/or Income Eligible offerings, and more likely to have a college degree. Web also captured more renters than mail, but fewer than phone.

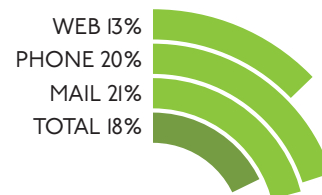
Mail captured lower income households and more limited English proficiency customers compared with web respondents. Not shown here, mail also had a higher percentage of retirees.

Phone calls focused on reaching nonparticipants, and captured a higher proportion of renters, lower income households, and those without a college degree. Phone respondents aligned more closely with mail respondents.

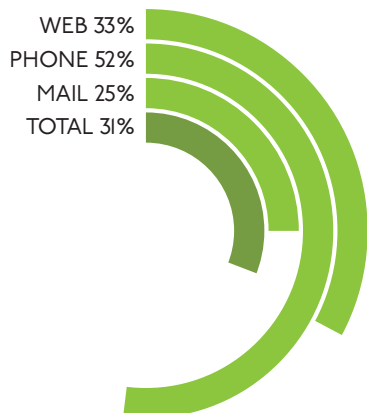
Are aware of Mass Save and/or Income Eligible Offering



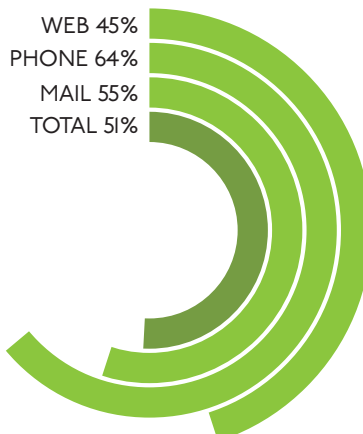
Does not speak English well or at all



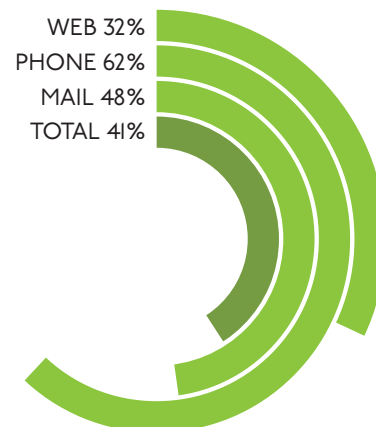
Rents home



Low or moderate income



Does not have a 4-year or higher college degree.



Nonparticipant Characteristics

Consistent with the Customer Profile Study Results,
Nonparticipants are more likely than Participants to:

- Rent their homes
- Are low-to-moderate income households
- Speak a language other than English
- Live in multi-unit buildings

The Survey Effort Also Revealed That:

Nonparticipants are more difficult, and
thereby more expensive, to reach

Nonparticipants are less aware of Mass
Save and Income Eligible program
offerings

The PA tracking data accurately
identifies nonparticipating buildings
within the five-year program timeframe
for which data is available

Education is a strong predictor of
participation; customers with post-
secondary education are more likely
to participate

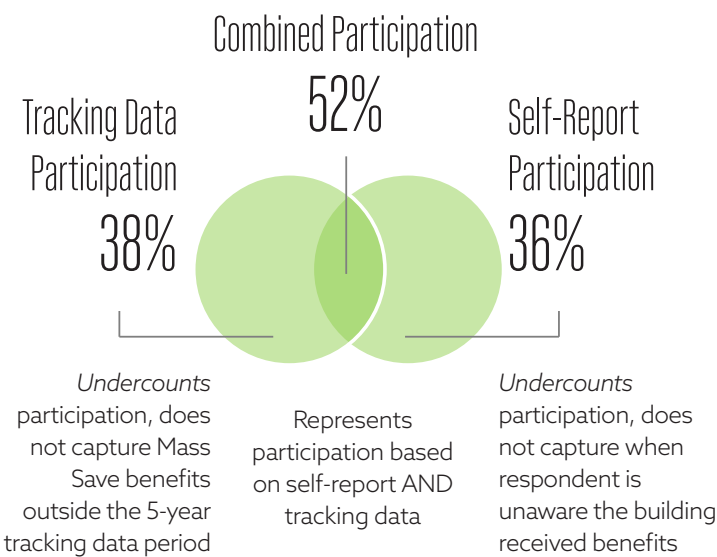
Customers exhibiting limited English
proficiency* are especially less likely to
report awareness and/or participation in
Mass Save programs than other survey
respondents

* by completing a survey in another language



How Does One Define A Participant?

Before diving into the findings, it is important to describe the different ways participation—and, relatedly, nonparticipation—is defined in this study.



1 TRACKING DATA PARTICIPANT

PA customer that received an incentive through Mass Save for an energy efficiency improvement between 2013 and 2017, or that lives in a multi-unit building that received a Mass Save incentive during that time.¹ Customers served outside those dates and customers who did not receive any Mass Save incentive or improvement are considered nonparticipants under this definition. Participation metric used for most of the analysis.

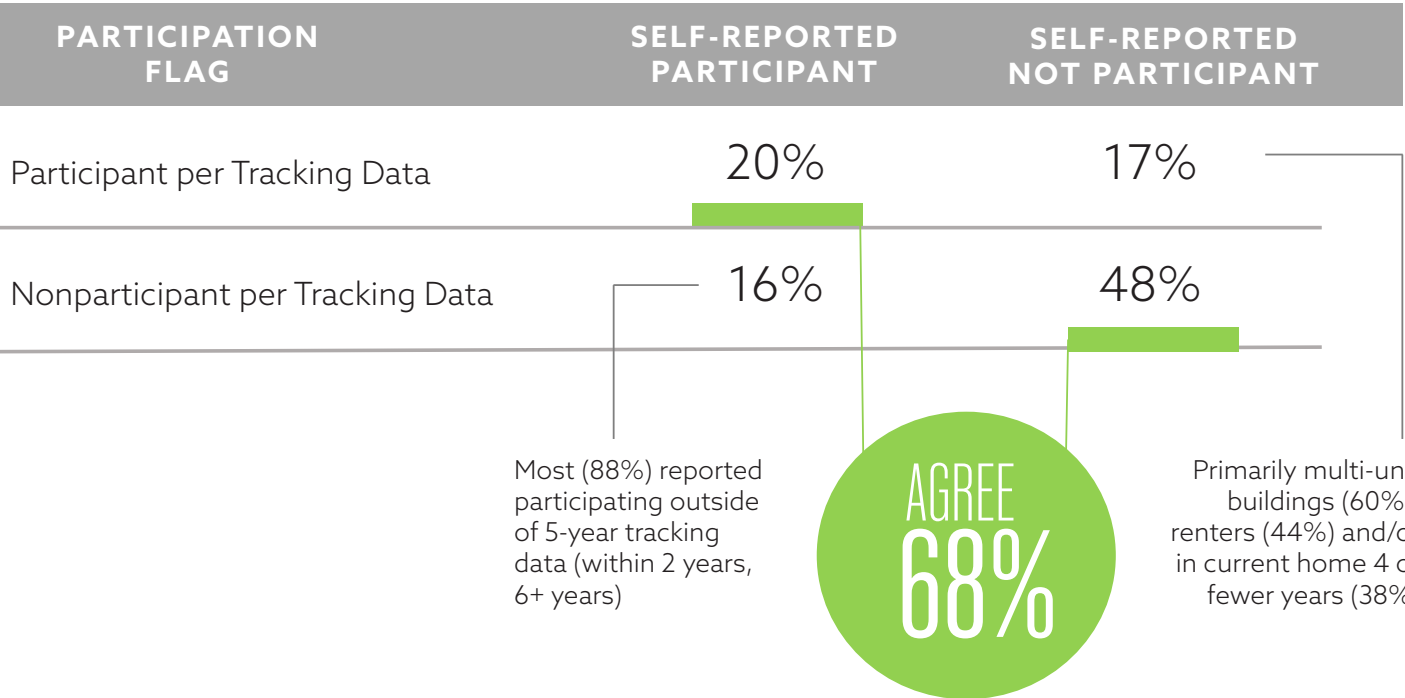
2 SELF-REPORTED PARTICIPATION

PA customer that self-identified, through the customer survey, as having participated in any Mass Save program (including the Income Eligible program) in their current home at any time.

3 COMBINED PARTICIPATION

PA customer flagged as *either a* participant via the PA's program tracking data and/or that self-identified as being a participant via the team's survey.

Tracking data and self-reported participants are not mutually exclusive; over two-thirds of buildings flagged participants in tracking data also have residents that self-reported participation. And differences are explainable by the limitation of the source.



¹ Excludes upstream lighting and behavioral programs, as well as energy efficiency activities funded outside of Mass Save. Source: Customer survey, weighted to represent statewide participation rates. The sum of participation rates in the Venn Diagram and table are different by 1% due to rounding.

Population and Survey Respondent Characteristics

Statewide, survey respondent characteristics generally aligned with Census data.

Homeownership and residents in 10+ units are exceptions; the survey captured fewer customers compared with the residential population. We hypothesize the underrepresentation of customers in larger multifamily buildings is due to the quality of customer records (e.g., missing unit numbers) and higher rates of mobility for multifamily residents (note that the customer records were from 2017 and therefore two years old at the time of the survey).

Participants and nonparticipants differ.

As discussed throughout this report, nonparticipants are more likely to be renters and speak a language other than English in their home. Notably, the survey also indicates residents in larger multifamily (10+) unit buildings are more likely to be participants than nonparticipants. This finding is consistent with DNV GL's conclusion in the Customer Profile Study that there is evidence that the PAs have had some success in getting multifamily locations to participate in Mass Save.

	Massachusetts Census	All Survey Respondents	Participants	Non-Participants
Speak a language other than English	23%	23%	20%	25%
Rent	38%	31%	26%	34%
Moderate income *	14%	13%	12%	14%
At least one child under 18 at home	29%	29%	28%	29%
Average household size	2.6	2.6	2.6	2.5
Housing Type				
Single family	58%	59%	61%	59%
2 units	10%	9%	11%	11%
3 – 4 units	11%	12%	8%	15%
5 – 9 units	6%	6%	3%	7%
10+	15%	10%	17%	5%
Mobile or other housing type	1%	3%	2%	3%

*Moderate income is based on Massachusetts –specific State Median Income which includes both income and household size. The assignment is not perfect. Method to determine moderate income varied by source:

American Community Survey 5-year Estimate (2013–2017): Estimated using income categories between \$50,000 and \$75,000 which most closely align to Massachusetts 60-80% State Median Income (SMI), the qualifying income level for Moderate Income offering, assuming an average household/family size between 2.6 and 3.1.

Survey: For web/phone, customized income levels for each respondent based on their reported household size to capture SMI. For mail, which included discrete income ranges, assigned moderate income if majority of the discrete income range in the survey was in established SMI for that household size. See Appendix A for more detailed description.

Nonparticipants are Especially Challenging to Reach

NONPARTICIPANT CHARACTERISTICS

The survey reached considerably fewer sampled nonparticipants than participants.

Analysis of the sample frame showed that participants (as identified through PA program tracking data) were significantly more likely to respond to the survey than nonparticipants (Figure 2).

Response rates were significantly greater in census tracts with higher levels of overall program participation, particularly for nonparticipants.

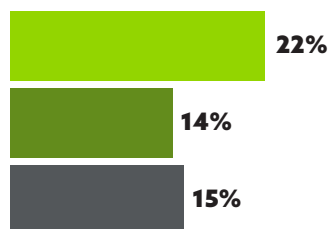
For example, nonparticipating customers in Strata 5 (i.e., blocks with the highest participation rates) responded at nearly twice the rate (27%) as nonparticipants in Strata 1 blocks (14%).

Customer contact data quality affected survey response.

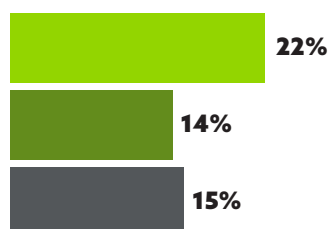
Nearly 1,000 out of the 7,800 sampled customers could not be reached via email or mail, with Participation Stratum 1, 2, and 3 experiencing higher mail return rates than higher Participation Stratum 4 and 5. The door-to-door survey effort found that, in many cases, the team could not reach target customers in multi-unit buildings due to missing information (e.g., unit number to reach the correct unit).

Figure 2. Response Rate by Strata and Group (n=7800)

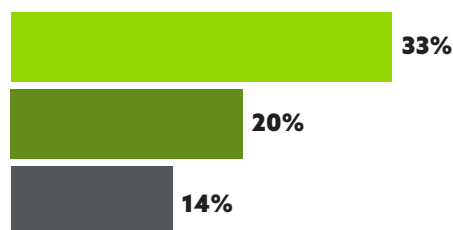
- % Sampled Participants Responded
- % Sampled Nonparticipants Responded
- % Sample Undeliverable



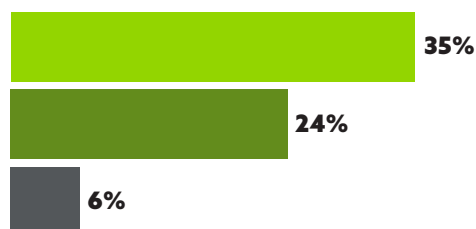
Participation Strata 1 (Less than 20.7%)



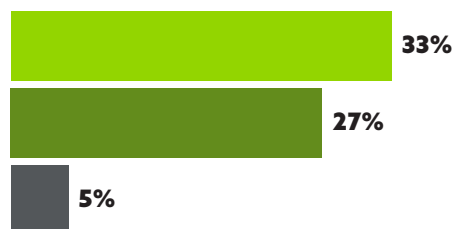
Participation Strata 1 (Less than 20.7%)



Participation Strata 3 (25.9-32.4%)



Participation Strata 4 (32.4-38.8%)



Participation Strata 5 (More than 38.8%)

Nonparticipants are Characteristically Different from Participants

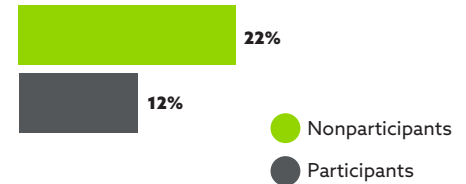
Nonparticipants are more likely to be renters and reside in smaller multi-unit buildings.

Just over a quarter of participating respondents rent compared with one third of nonparticipants. Significantly more nonparticipants reside in three to nine-unit buildings indicating the program has more challenges reaching these smaller multi-unit buildings.

Rent their home*



Reside in 3-9 unit buildings*



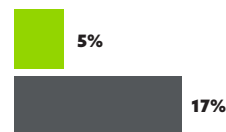
Reside in 1-2 unit buildings



Nonparticipants are less likely to reside in larger multifamily buildings (10+ units)

As discussed earlier, this finding could indicate the program is effectively serving the larger multi-unit buildings.

Reside in 10+ unit buildings*



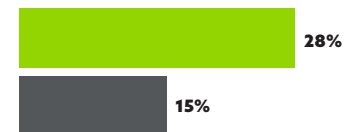
Nonparticipants are also significantly more likely to:

Be less educated (with a high school education or no secondary degree), be low income (self-reported), speak a language other than English in the home, and, be unaware of Mass Save or income eligible programs.

Have high school or less education*



Are not aware of Mass Save or income eligible programs*



Are Low Income*



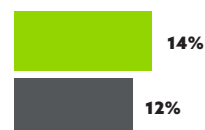
Speak a language other than English at home*



Customers who report being moderate income are equally likely to be participants or nonparticipants.

There is also no relationship between participation in Mass Save and participation in an assistance program.

Are Moderate Income



Participated in an assistance program



* Findings are significant with 90% confidence; p-value >= .05.

Awareness and participation by groups of interest

The three groups of interest (renters, moderate income customers, and customers who speak a language other than English) are less likely to be aware of—or participate in—Mass Save and/or income eligible programs.

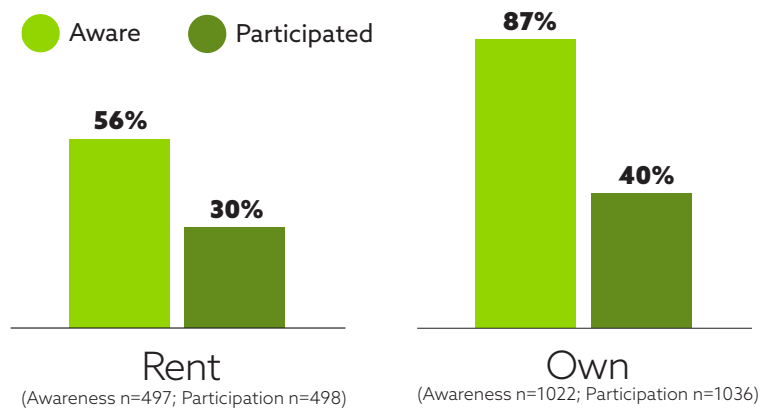
Renters

Nonparticipants who rent are likely to...

Reside in the lowest participating tracts, participation strata 1 (46%)

Be unaware of Mass Save (46%)

Self-identify as low income (62%)



Moderate Income

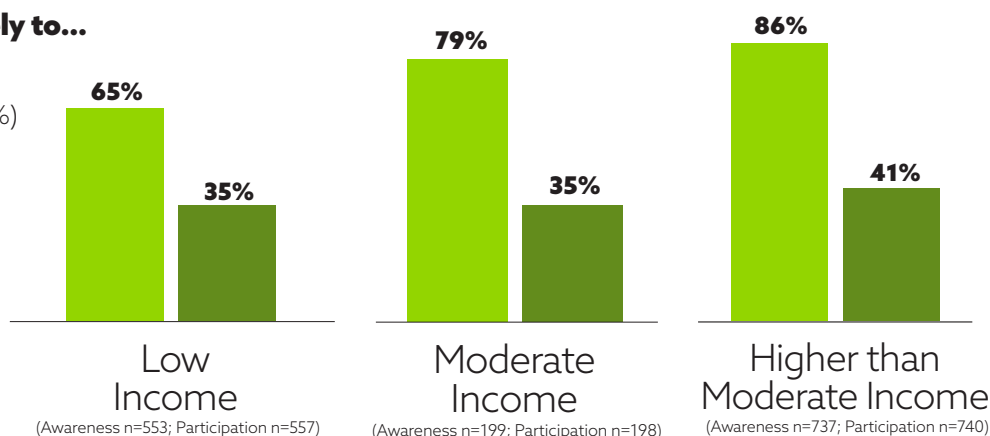
Nonparticipants who self-identified as moderate income are likely to...

Reside in a higher participating tract, participation strata 4 (37%)

Be a homeowner (74%)

Report awareness in Mass Save (74%)

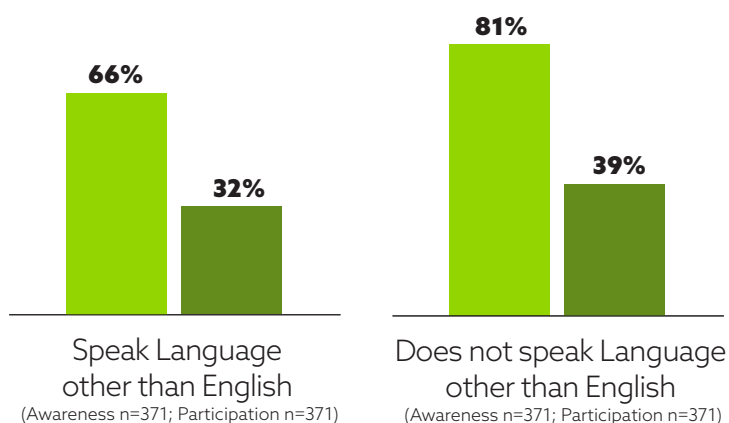
Say they did not participate in an assistance program (81%)*



Speak a language other than English in home

Nonparticipants who speak a language other than English in their home...

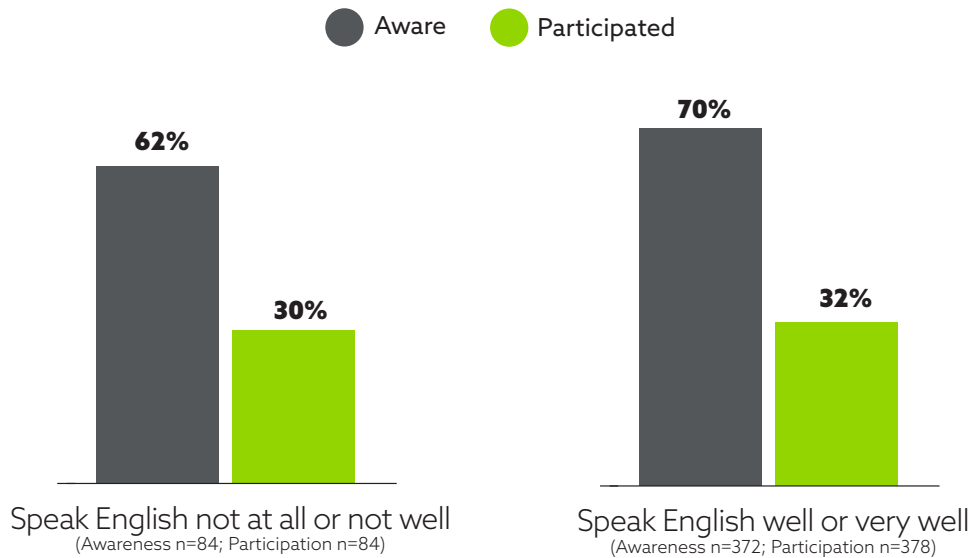
Are evenly dispersed across the sampled census tracts, although sample size is too small to assess this finding with statistical significance (n=32)



*Using Combined Participation metric

Awareness and participation by limited English proficiency

The subset of respondents who report not speaking English at all or well (limited English proficient) are also less likely to be aware of Mass Save and, to a greater extent, less likely participate



More on Limited English Proficiency

A handful of survey respondents completed a mail survey in another language (also indicating limited English proficiency, 47 cases). While a small sample, the results are indicative of how different, and potentially in need, this group may be.

Completed a Mail Survey in Another Language (n=47)

Rent home	65%
Low income	93%
Moderate income	5%
High school or no degree	64%
Aware of Mass Save	36%

All Survey Respondents (n=1,594)

Rent home	31%
Low income	37%
Moderate income	13%
High school or no degree	26%
Aware of Mass Save	77%

Exploratory Statistical Modeling Confirms Survey Trends

To facilitate understanding of what demographic information predicts participation, the evaluation team conducted a series of Classification and Regression Tree (CART) analyses. Individual predictors of participation interact; they do not operate independently in reality and therefore “group” together. This modeling approach captures those interactions in predicting participation.

The evaluation team used three participation metrics in the CART analysis (program tracking, self-reported, and combined). For each, the team assessed the relationship between key demographic questions (e.g., income, education level, race and ethnicity, language, home ownership, and mobility) and participation.

The CART analyses identified consistent relationships between customer demographics and participation for all three participation metrics.

The following items consistently predicted whether a respondent was a participant or nonparticipant using:

Education – customers with post-secondary education are more likely to be participants.

Homeownership – renters are more likely to be nonparticipants, but renters with college degrees are more likely to be participants

Mobility – customers who have moved in the past five years are more likely to be participants, particularly if they own their home

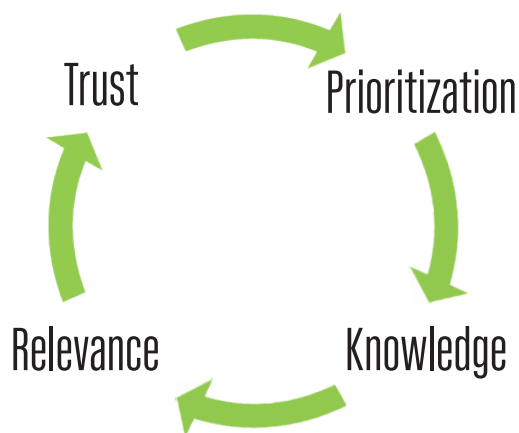
Assistance programs – customers who have participated in an assistance program are more likely to have also participated in Mass Save programs. This is particularly true for renters and less educated customers

These relationships are complex and illustrate that there is no one demographic characteristic that predicts Mass Save participation. Instead, PAs can use a combination of these predictors to identify pockets of nonparticipants based on census demographics.



Participation Barriers

The research found several consistent themes around barriers to participation. Customers who do not trust the legitimacy of the program may prioritize other areas of their lives. This may lead them to feel that the program is not relevant to them, especially if they do not understand the benefits that energy efficiency offers (knowledge). Although discussed separately, these barriers are interconnected. The following pages provide supporting evidence for each of these themes.



Trust

Lack of trust in

- Free/discounted services
- Landlords
- Federal government

Worry About

- Deportation
- Privacy repercussions
- Door-to-door scams

Prioritization

Limited time and resources

- Drives prioritization
- Focuses attention on psychological and physical well-being
- Inhibits learning about offerings

Relevance

Belief that

- Home is already efficient
- Energy efficiency is for the wealthier
- They will not qualify
- Improvements not their responsibility

Knowledge

Lack of true understanding

- Paralyzes participation
- Becomes overwhelming to investigate and figure out

PARTICIPATION BARRIERS:

trust

Many customers did not believe PAs would offer opportunities to spend less on energy and lower bills.

While customers said they think of utility companies as legitimate and trustworthy entities, most of their interactions with their utility is limited to paying their monthly bills. They think of utility companies as businesses selling power to generate profit, and therefore, struggled with the concept that a utility would encourage lower energy use.

“Nothing is free.”

Customers frequently held the position that nothing is free. Even if they were interested in learning more about the PA’s program offering, they still believed there must be hidden costs or motives. Marketing materials advertising “free” services were demotivators for these customers.

*“When they say it’s free, it is not true.
Nothing is for free.”*

— Intercept Interviewee

Previous experience with scams or sales people knocking on doors with questionable offerings generated distrust of the research and program offerings.

Despite advanced notification about the study that leveraged both Mass Save and PA logos, some customers we reached through door-to-door outreach questioned the legitimacy of the team’s research. Many expressed concerns about scams or confused the team’s PA-sponsored outreach with sales and marketing efforts by competing energy service providers. PAs and organizations the team interviewed also described customer distrust as a recurring and critical barrier to participation,

Interviews found that trust, or lack of trust, in program legitimacy was prevalent among all hard-to-reach groups this study investigated.

recognizing that these scammers, who present themselves as utility representatives when visiting door-to-door or through telephone, can confuse customers and further lead to distrust.

Customers’ inability to pay bills on time puts the relationship with their utility at risk.

Some lower income customers experienced times when they could not pay their utility bills and had their electricity cut off or received delinquency notices. These experiences contributed to the belief that their utility is not concerned for their well-being and created a general sense of distrust toward their utility.

Immigrant populations expressed a desire to live anonymously.

Community organizations the team interviewed characterized some immigrant groups as “living in the shadows,” either because of their own citizenship status or that of family members or friends. The team found this to be particularly true among the Spanish speaking customers who participated in the survey or in-person interviews. This may be a result of the current political environment. Their outlook kept them from applying for any assistance programs, government funded or otherwise, for fear that sharing their personal information may lead to being identified.

“When we came to the US, my husband told me never to share any information because it could be used against us in the future. Have you seen the new policies the current administration has implemented? He was right all along.”

— Intercept Interviewee



ANA:

Disconnected, surprised,
and concerned

Ana sat down for our interview with a sigh. She was on a break at the CAP agency where she worked. As the interview team explained the program offerings, she interjected, “they just turned my mother’s gas off. It’s November and they turned our gas off. I thought they weren’t supposed to do that. And we have children in my home. What are we supposed to do?” She explained that they owed \$117 on the bill and had paid \$90 but could not pay the bill in full. She had anticipated that the substantial payment she had made would delay the disconnection. She was distraught that the gas had been turned off just at the beginning of winter, and worried for her children. Although she was interested to hear about program offerings, all of them seemed irrelevant compared to her urgent need to have her gas turned on again. Instead, access to heat was her primary concern.

Based on an actual interview. All names changed.

Customers trusted those they knew personally, including community organizations, and turned to them for information.

In interviews and in-person surveys, we found that social and community connection was key to a sense of trust. In interviews, customers explained their trust in the Community Action Program (CAP) agency and many other organizations they worked with. The survey supported this, with 44% of lower income and moderate income respondents ranking CAP agencies as a top trusted source, and another 25% mentioning community organizations in general. Many lower and moderate income customers interviewed (as well as 48% surveyed) also said their utility is a top trusted source. This was often in response to the feeling that the utility is providing them a service (versus simply charging them for energy).

Many renters believed it was unlikely their landlords would do anything beyond making the minimum repairs to their properties.

When asked if they had talked to their landlords about home conditions or concerns, one interviewee described feeling uncomfortable talking to their landlord about “things he needs to do,” implying that conversations about energy efficiency which the landlord is not obligated to address are out of the question. Another interviewee was so reluctant to talk with their landlord that when their air conditioner stopped working, they opted go out and buy a portable unit instead of asking their landlord for help.

Engagement Opportunities Related to Trust

Continue to build on efforts to leverage trusted community connectors such as staff at community organizations that serve key groups of interest to raise awareness and provide support throughout the program process as Mass Save champions.

Collaborate with individuals and organizations, extending beyond traditional Mass Save partners such as the Chinese Progressive Association, to engage community champions who customers relate to and trust to share information about programs. These organizations and individuals can be a vital bridge between the program and members of their community.

"I think partnering with local organizations is what has really made everything click for us. It really added a level of trust about what we do, who we are, and people feel confident and safe in dealing with us."

- CAP Agency, community organization interview.

Collaborate with organizations to develop strategies to best reach and serve groups of interest.

Some of the organizations the team interviewed provided various strategies they believed would work effectively with the populations they serve. As an example, one community organization interviewee suggested presenting case studies or examples of prior local participants' home upgrades to use a relatable messenger to ease concerns and initial skepticism. These organizations are best positioned to propose ideas their communities will respond positively to, so the PAs should solicit and pilot these ideas.

"Knowing about someone that has gotten the service before and sharing their experience can go a long way in making people more comfortable using the services."

- CAP Agency, community organization interview.

PARTICIPATION BARRIERS:

prioritization

Energy efficiency was only a priority for people whose basic needs were met.

Nonparticipants interviewed deprioritized participation unless they thought their utility bills were unaffordable.

Several nonparticipants the team spoke with believed that, to invest the time and effort it would take to participate, their utility expenses would have to warrant it. In other words, unless they felt their bills were unreasonably high, they were unwilling to prioritize program participation. For example, one nonparticipant said they were interested in the program, but that she wouldn't go out of her way unless her bills were "astronomical."

"What's prohibitive about it is having to schedule it, having to wait at home, taking time out of my day."

– Survey Respondent, phone interview

Perceptions that the process is too complicated or cumbersome resulted in customers not willing to participate.

Survey respondents, when asked why they have not participated in a Mass Save program, reported that they did not want to deal with the hassle (36 out of 156 respondents) or did not have the time (26 out of 156 respondents),

"It seems like extra work I wouldn't normally have to do."

"What is involved sounds time consuming and aggravating."

– Survey Respondents



MATTHEW:

Fighting for what is most important to him

As we began the interview, Matthew started apologizing: "I'm so sorry, it's hard for me to focus. I mean, I have a hundred things running through my head right now." He explained that he had recently reentered after being incarcerated and had found housing. The rent of \$850 per month would be impossible for him to meet if he could not find a job. He was working with a case worker to find a job, and for that reason had visited the organization that day, but without success. Finding a job and keeping the apartment were of paramount importance to him because he was hoping to gain back custody of his child who had been placed in foster care. In this context, energy savings and energy efficiency were neither a priority nor even a marginal concern of his.



Basic needs take priority over energy efficiency, which is not seen as a necessity.

Customers, especially those from lower income households, described prioritizing basic needs (food, shelter, jobs/income, child or parent care, regaining custody of children, etc.) before they could begin to think about energy efficiency. For them, it is about keeping the lights on more than spending money or time to upgrade their equipment for the sake of saving energy.

Lower and moderate income customers access services through many different organizations to address their everyday needs, which takes time and effort.

Consistent with the previous finding, these customers prioritize visiting the organizations that support their essential needs like food and financial resources. Visiting another agency, or even a different division within the same agency, to participate in efficiency programs was another step in their process which they may not perceive as worth the effort, especially if they are unclear on the value to their day-to-day lives.

Engagement Opportunities Related to Prioritization

Tie program services to everyday needs and value to customers.

While messaging about improving comfort or reducing drafts may appeal to some customers, those with financial needs may disregard these messages as they focus on other basic needs, not viewing energy efficiency improvements as a necessity. Reinforce the message that these programs provide benefits that will improve their daily lives in ways that matter to them (e.g., health benefits, more money to use for necessities, improved home value).

Continue to focus on design and implementation opportunities that minimize customer time and effort and combat the perception that participating takes a lot of time.

These efforts may benefit from considering "Inclusive Design Principles." These principles focus on designing outreach and services around customers' diversity and unique needs.⁴ Designing for people with specific needs or limitations can lead to solutions that benefit all customers. Smoothing the hurdles in program processes that participants must overcome, such as making multiple calls, rescheduling appointments with contractors, and the like, could make the participation process viable for nonparticipants who may not have the bandwidth to "jump through those hoops" and may benefit all participants through a more streamlined experience.

⁴ There is considerable literature on Inclusive Design; here are two resources: <https://inclusivedesignprinciples.org>
<http://www.inclusivedesigntoolkit.com/whatis/whatis.html>

PARTICIPATION BARRIERS:

relevance

Most customers did not know Mass Save is funded by ratepayers, leading them to believing they did not deserve to or should not participate.

The team's research findings exposed some confusion around who, or what entity, sponsored Mass Save. Several customers believed that it was government-funded, like MassHealth, and therefore an assistance program. Others thought it was funded by implementing CAPs. Few understood it was funded by ratepayers like themselves. This misconception led some interviewed customers to think Mass Save funds were reserved for people in most need.

"I make too much money and am philosophically opposed to wasteful government spending..."

– Survey Respondent

On the flip side, some customers thought energy efficiency was not relevant (as discussed earlier).

While some who associated Mass Save with improvements to the comfort of their home, such as energy efficiency measures, were not as critical a focus for them as other more pressing needs. Some customers explained that, although their home was drafty or not well insulated, it was livable, or normal, as is, and taking any action to improve it was above and beyond what they felt was necessary. These sentiments kept some customers from investigating Mass Save offerings or improvements in general.

Customer participation was inhibited by a sense that the program was not relevant to them.

Many customers we interviewed did not know what terms like "weatherization" and "energy efficiency" really meant.

When asked to share what "energy efficiency" meant to them, customers gave a variety of answers. Some thought it was related to the recent federal lighting efficiency standards or basic home infrastructure but could not elaborate much further. For others, the term was completely unfamiliar. Not associating with these terms lead customers to believe the programs are not relevant to them. As such, customers are likely ignoring marketing materials that rely on such language.

"I don't know what those fancy words mean."

– Intercept Interviewee

Some potentially income eligible customers did not apply for income eligible services believing they would not qualify.

Customers described beliefs that they would not qualify because their income was too high or because different assistance programs had denied them. Customers who have applied for assistance programs and were denied may be more likely to have a moderate income or be among those who fluctuate between moderate income and lower income status.

"I have been told, 'no,' so many times that I don't even try anymore".

– Survey respondent, phone interview.

SHANNON:

Denied and disempowered

Shannon came to the organization in hopes that they would help to place her in a family shelter or transitional housing facility. She and her boyfriend, along with their child, were currently staying with her mother but looking to move into their own place. Shannon had been trying to find another place to live for some time, but could not afford to rent an apartment on her own. The last time she applied for assistance she was told that she made \$100 too much and therefore didn't qualify for a housing voucher or placement in a shelter. She was interested in the Mass Save program offerings and thought that her current home could benefit from energy efficiency improvements. However, she feared bringing a stranger into the home without her mother's approval in advance and didn't believe that her mother would agree to have someone provide an energy audit. Her focus for the moment was on getting herself and her family into their own home, and only at that point could she consider energy efficiency improvements. She again mentioned that the process of moving out proved difficult and discouraging as she was ineligible for services on multiple occasions for earning just over the eligible amount.

Based on an actual interview. All names changed.

Renters expressed a common perception that energy efficiency and home improvement are the responsibility of the landlord, not the tenant.

In interviews, most renters were surprised that they could or should participate, as they believed it is not their responsibility to improve the unit. Interviewees also expressed feeling disempowered, with one interviewee illustrating with the example of her landlord being upset when she replaced an old, inefficient refrigerator with a new one. Survey respondents agreed with interviewees; when asked why they have not participated, 31 respondents said it was because they did not own the building and/or they were unable to get their landlord to complete the work. Other renters saw energy efficiency upgrades as only applicable to homeowners and were unaware of the direct install measures (such as lighting, smart strips, and hot water measures) that

they could install without landlord consent. Most of the renters surveyed report paying for their electric and natural gas bills (96% and 70%, respectively).⁵

"Anything that requires a permanent change is a homeowner thing."

– Survey Respondent (renter), phone interview

Vacant, unsafe, or poor housing structures are, and will continue to be, potentially challenging barriers for participation.

The team encountered 65 homes that appeared vacant or were identified as unsafe for researchers to approach (e.g., residents arguing, structurally unsafe conditions). Traditional efficiency programs often cannot treat structurally unsafe homes cost-effectively, requiring partnerships with other community organizations to remediate the issues prior to installing efficiency upgrades.

⁵ The Census reports that about 18 percent of renters do not pay additional for energy costs whereas most survey respondents pay for electric or gas (Massachusetts, American Community Survey Table B25069 – 5 year estimates from 2017). The fact that the evaluation team relied on PA residential records versus a general population of Massachusetts residents is a likely reason for this difference.

Engagement Opportunities Related to Relevance

Identify ways to impress that Mass Save is available to all customers of the Massachusetts PAs.

This information is in the Mass Save documentation, but it not front and center in the PA's marketing. Messaging that clearly indicates that Mass Save is funded by customers may ease some of the nonparticipant populations' concerns about participating in "government-funded" or other assistance programs.

Identify messaging that resonates with different groups of interest, tackling head-on the misconceptions identified through this research.

Misconceptions include perceptions that it is not for me, it is government funded, and energy efficiency is for the wealthy. Further, the research indicated that energy savings was not a top of mind concern for individuals interviewed. Consider different marketing messaging that will resonate with the various groups of interest. These messages should be in addition to, not in lieu of, messaging related to energy savings (a common marketing component in Mass Save marketing materials).

Reinforce that denial in any assistance program does not mean lack of eligibility for Mass Save.

Customers reported being less likely to look into Mass Save if they have been declined income-qualified services in the past. This may correlate with moderate income customers and those who fluctuate between moderate and lower income status, in particular. It is important to message that the PAs have developed programs for every customer and that denial in another program does not mean they are ineligible for all programming.



knowledge

A lack of knowledge and understanding of energy efficiency benefits stands in the way of participation.

Many customers were not clear on what making efficient improvements to their home really meant, or how it could benefit them.

Interviews revealed that customers' understanding of efficiency improvements, or more broadly, services associated with energy efficiency programs, ranged from no understanding, to making behavioral changes to lower their bills, to a full understanding around efficient improvements. Several customers we spoke with shared instances when their comfort level in their homes was lower than desired or described being unhappy with their older appliances. Those with a better understanding were the exception, and not the norm.

Community organizations are not always seen as a source for energy improvement services.

Important to low-income customer participation barriers, during intercept and in-person interviews, the team found most customers were not aware that CAP agencies offered energy efficiency services. While interviews with implementing partner organizations confirmed that there were policies in place to cross-promote programs, we heard from customers and some community organization staff that cross-promotion does not always occur.

In some instances, customers who reported receiving services like fuel assistance or discounted utility bill rates said they were never referred to additional programs like Mass Save.

Nonparticipants did not have a clear expectation of what program participation would look like.

Some customers we spoke with, who had never participated in Mass Save programs, assumed participation would be complicated. They were intimidated by the idea of navigating through the several steps of participation. Nonparticipants were frequently unfamiliar with the offerings and with the steps that would be required to participate. In some cases, they expressed hesitation to participate if they did not know what they were getting into.

This finding was especially true among limited English speakers, who not only struggled with understanding program participation processes, but also vocalized hesitation to participate due to their concern over being taken advantage of. Interviewees who discussed this issue raised the need for translation and personal support to help them interpret program requirements accurately and alleviate their concerns.

Engagement Opportunities Related to Knowledge

Work with CAP agencies and other assistance organizations to reinforce cross-program promotion among assistance programs and Mass Save.

Customers already seeking assistance through community partners are the most logical targets for program recruitment for both low- and moderate-income programming. Explore the extent to which these organizations understand Mass Save and opportunities for their customers and provide information they need to better cross-promote the program.

End-to-end in-language support could enable increased participation of limited English speakers.

While marketing materials in different languages may increase program awareness for customers who speak a language other than English, multilingual support throughout the application process and beyond can keep customers in the program for the entirety of the participation process.

landlords, property owners and/or managers

Trust

There is minimal communication between local property owners and/or managers.

Only a small number of surveyed property owners or managers indicated that they were part of an organized rental property or investment group. With only one exception, these were always respondents that owned or managed larger properties (i.e., 10 or more units). However, several respondents (that managed or owned both small and larger properties) expressed regret about not being more proactive about joining such groups and interacting with other property managers.

Prioritization

It just takes once.

Two landlord interviewees who had participated in Mass Save said they are frequent program participants. One said that, after initially being slow to participate, he has now made signing up for a home energy assessment part of his standard property acquisition and improvement process. Both interviewees were clear that once they participated, they saw significant value in the technical information and financial support they received from the PAs and that they continue signing up for assessments for future property investments.

Small and mid-sized property owners view themselves, first and foremost, as investors.

When providing an overview of their rental situation, interviewees were also clear that they acquired their properties as investments. As such, all decisions, including potential participation in an energy efficiency program, needed to provide the requisite return on investment (ROI).

Property owners and/or managers see the benefit of Mass Save programs once they participate; however, they experience similar barriers related to trust, prioritization, relevance, and knowledge as nonparticipants.

With some probing, interviewees often acknowledged they were not familiar with the PAs' incentives. They also mentioned they had a specific out-of-pocket ROI requirement for acting on a hypothetical program recommendation.

Relevance

Property managers have influence, but limited autonomy.

None of property managers indicated that they were the primary decision-maker on energy efficiency program participation at the properties they manage. They commonly said they identify and notify the owner of beneficial opportunities, but were clear that nothing (outside of routine maintenance) happened without the explicit approval of the owner.

Knowledge

All surveyed property owners and managers had heard of Mass Save, but less than half had ever received an assessment.

The owner/manager survey found, like the general customer survey, very high levels of Mass Save awareness. However, the team's interviews with a subset of these owners/managers highlighted an apparent disconnect between awareness and understanding. When asked, several of the interviewees (all of which had previously reported they were "familiar" with Mass Save) were not able to articulate what participating in Mass Save entailed (e.g., that you received a home energy assessment or received tailored energy efficiency recommendations and incentives to execute on those recommendations).

Engagement Opportunities related to Landlords and Property Owners and Managers

Continue to explore rental market and property management events to connect with rental property decision-makers to promote Mass Save and energy efficiency.

As an example opportunity, two landlords, on occasion, had attended local “meet-ups” for landlords. They noted those meetings tended to focus on helping newer property owners and managers understand the legality of rental properties, but that they would be an effective forum for promoting efficiency programs as well.

Property owners and managers self-identification as investors has potential implications for PA marketing.

Several said they frequently listen to investment-focused podcasts (BiggerPockets was mentioned three times⁶) and that ads on those podcasts and/or endorsements by respected members of the real estate investment community would be impactful.

Establish a two-pronged approach for multifamily program outreach where both property managers and owners are targeted.

While property managers have limited autonomy to make program participation decisions, they may serve as gatekeepers to property owners. Consider ways to leverage property managers to create owner buy-in.



⁶ <https://www.biggerpockets.com/podcast>

Appendices

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APPENDIX A. DETAILED METHODOLOGY FOR CUSTOMER AND LANDLORD RESEARCH

A.1 Research Overview

The Residential Nonparticipant Study used a multipronged approach to reach customers and address the research questions, incorporating quantitative and qualitative research activities.

Quantitative research included a multimode survey of sampled residential customers with a focus on nonparticipants (see section A.3.2 for a detailed discussion of the definition of a nonparticipant and its sampling approach). The research allowed the evaluation team to characterize the population of Massachusetts residents by demographics, awareness of the Mass Save brand and offerings, awareness of income-qualified offerings through the Low-Income Energy Affordability Network (LEAN) and local community action program (CAP) agencies, and, to a limited extent, attitudes and concerns toward energy expenses and energy efficiency.

Qualitative research included the following activities:

- Interviews with Massachusetts Program Administrator (PA) evaluation and implementation staff (Task 2)
- Interviews with local community organizations (Task 2)
- In-person interviews with customers that completed door-to-door research (Tasks 3 and 5)
- Intercept interviews with customers at select community organizations (Task 5)
- Follow-up telephone interviews with survey respondents (Task 5)
- In-depth interviews with landlords (Tasks 4 and 5)

This qualitative research explored many topics, including true awareness and understanding of Mass Save and energy efficiency offerings through local CAP agencies, perception of energy efficiency as an offering, identifying trusted resources including trust in their local utility, and identifying household conditions and needs.

Table A-1 provides a short description of each activity and details the team's target and final sample counts.

Table A-1. Research Activity Description and Response

Activity	Description	Response Target	Actual Response Count
Objective Analytics			
Coordination with DNV GL	Identified priority research and data needs. Established a customer survey sampling frame and gained insights on initial indicators of ecological fallacy for further exploration.	N/A	N/A
Nonparticipation analysis of program data	Prepared program data for customer survey sampling by conducting nonparticipation rate analysis of PA customers by census tract.	N/A	N/A

Activity	Description	Response Target	Actual Response Count
Qualitative In-Depth Research			
PA interviews	Interviewed implementation, evaluation, and marketing staff on an opt-in basis to gain insights on perceptions of or experience with hard-to-reach population outreach.	20-30 (combined target of PA interviews and community and specialized organization interviews)	5
Community and specialized organization interviews	Interviewed community organizations that both partnered and did not partner with Mass Save including those serving targeted non-English speaking populations and renters to gain insights into communities and cultures in which nonparticipants reside to inform survey research and follow-up qualitative research with customers.		18
Customer interviews through door-to-door research	Conducted interviews as an add-on to in-person surveys with nonparticipants to probe on key points of the research.	120	14 out of 526 attempts
Customer intercept interviews at community organizations	Used community connectors identified through prior interviews and PA recommendations to reach and interview customers outside of the survey sample and gain a unique perspective on customer perceptions, understanding, and participation in Mass Save programs. The team conducted these interviews at three community organizations in targeted towns of interest (Springfield and Boston). One organization partnered with Mass Save (Springfield Partners) and two did not (Arise Springfield, Codman Square).	4-8 organizations; 40 interviews	3 organizations; 59 interviews
Customer follow-up phone interviews	Conducted phone interviews with nonparticipant customers that responded to the survey to probe on key research points.	15-20	16
Landlord/property manager surveys and interviews	Conducted a qualitative survey and follow-up interviews with landlords and property managers to gain a deeper understanding of their perspectives on Mass Save programming, specifically barriers for them or for their renters in participating and insights on enhancing engagement strategies.	N/A surveys*; 8 interviews	17 surveys; 5 interviews
Quantitative Survey Research			
Customer Survey	Conducted a multimode survey to maximize response and to reach the hardest-to-reach nonparticipants (web, phone, abbreviated mail, door-to-door). The team offered multilingual surveys in the most prominent languages (English, Spanish, Portuguese, Mandarin Chinese).	2,730	1,609

* The team surveyed the entire sample of landlords (n=150), which was generated through customer referral as part of customer responses to the customer survey. Because the sample size could not be predicted prior to customer responses, no minimum response target was set for completed landlord surveys.

The following sections provide supporting deliverables and detail related to each of these efforts:

- PA and Community Organization Interviews (Task 2)
 - Methods
 - Sampling Approach
 - Response
- Customer Survey (Task 3)
 - Methods
 - Sampling Approach
 - Full Customer Survey Sampling
 - In-Person Survey Sampling
 - Response
 - Survey Weighting Scheme
- Property Owner/Manager Research (Task 4)
 - Landlord Surveys
 - In-Depth Interviews
- Additional Qualitative Customer Research Approach (Task 5)
 - Additional Qualitative Research Plan
 - In-Person Customer Interviews (Add-On to the Customer Survey)
 - Customer Intercept Interviews at Select Community Organizations
 - Follow-Up In-Depth Telephone Interviews with Customers
- Ecological Fallacy
- Study Strengths and

A.2 PA and Community Organization Interviews (Task 2)

The evaluation team interviewed PAs and community organizations to gain insight into the communities and cultures in which customers reside. Specifically, the evaluation team focused these interviews on learning about the following:

- Needs of the populations
- How customers manage their expenditures and energy-related costs
- Extent to which the organizations were aware of utility-funded services to support households in need
- Customer awareness and perceptions of energy efficiency
- Perceptions and potential barriers (e.g., trust issues) to engaging with public, state, or PA-directed programs

- Any advice the organizations had for customer research design
- Support they could potentially provide to help the evaluation team overcome barriers in reaching target customers

A.2.1 Methods

A team of researchers conducted the organization interviews over the phone; one or two researchers interviewed one or more organizational staff. Respondents did not receive an incentive for their participation. Interviews lasted between 45 and 60 minutes.

A.2.2 Sampling Approach

The evaluation team conducted qualitative research with three groups:

- PAs
- Community organizations
- Organizations that serve non-English speaking populations

The team aimed to speak with 20-30 individuals across these organizations through interviews or panel discussions.

PA implementation and marketing teams and members of the Energy Efficiency Advisory Council (EEAC): The PAs grapple regularly with successfully engaging the identified harder-to-reach customers through their programs. The evaluation team interviewed any PA implementation and marketing staff that wished to participate in this portion of the study.

Community organizations: Community organizations, including social service and CAPs, are the closest to lower income households or households that are not lower income but may have other needs (e.g., disabilities). To consider nontraditional barriers more broadly and to truly understand these customers, the team spoke with a range of community organizations that interacted with energy efficiency/PAs directly as well as those that do not. Organizations identified for interviews included the following:¹

- **Organizations that work with low-income customers and PA programming** including LEAN, Action Inc., ABCD, other community action agencies, etc.
- **General community organizations** that work with potentially lower income and vulnerable households including school districts, churches, food pantries, and nonprofits that administer public social programs such as food stamps (SNAP) and Women Infant and Children (WIC).

Organizations that serve customers that speak a language other than English: These organizations had insight into the challenges faced by households that are not primary English speakers. According to the American Immigration Council (AIC), immigrants make up 16% of the state's population.² The AIC estimates that one in seven residents is a native-born US citizen with at least one immigrant parent. While most of these households reportedly speak English very well, a quarter do not.

¹ In addition to snowball sampling, the evaluation team culled resources such as the Massachusetts Nonprofit Network to identify potential groups to interview (<http://massnonprofitnet.org/mnn-members/>).

² American Immigration Council. Immigrants in Massachusetts. October 5, 2017. <https://www.americanimmigrationcouncil.org/research/immigrants-in-massachusetts>

The evaluation team gathered recommendations and existing contacts referred by the PAs and EEAC to develop an initial sample list. The team supplemented the list with internet searches for organizations that meet study criteria and by identifying additional organizations or interviewees as part of each interview, a technique known as snowball sampling.

A.2.1 Response

The evaluation team contacted 74 individuals at 70 organizations to successfully complete 23 telephone interviews with PAs and different community organizations.

Table A-2. Interviewed Organizations

PAs (n=5)	Mass Save Partners (n=3)	Other Community Organizations (n=15)
<ul style="list-style-type: none"> • Cape Light Compact • Eversource • National Grid • National Grid – New England • Unitil Corporation 	<ul style="list-style-type: none"> • ABCD • Action Inc. • Community Action Pioneer Valley 	<ul style="list-style-type: none"> • All In Energy • Boston Climate Action Network* • Centro Latino • Chinese Progressive Association* • Coalition For Social Justice* • Codman Square Neighborhood Development Corporation • ener-G-save, Inc. • Gloucester Housing Authority • Good Neighbor Energy Fund (Salvation Army) • GreenRoots Chelsea* • Housing Support Inc. • Springfield Partners for Community Action • Summit ElderCare • Town of Nantucket Energy Office • We the Villagers

*Green Justice Coalition member

Table A-3. Representation of Targeted Populations in Completed Interviews

Serving Non-English Speakers	Serving Renters	Serving Moderate Income	Key Service Locations
11	13	10	17

Key service locations include Boston, Lowell, Springfield, western Massachusetts (generally), and Worcester. The team also targeted organizations with service areas that include towns and counties sampled for Task 3: Customer Surveys.

Below details the 47 organizations the evaluation team attempted, but were unable to, speak with.

Arise	Black Economic Justice Institute	Boston Tenants Coalition
Cambodian Mutual Assistance Association	Casa Latina	CASCAP
Catholic Charities, Refugee and Immigration Services	Chelsea Collaborative	City of Lowell First Time Home Buyers Program
Community Action Center of Cape Cod	Community Development in the City of Lowell	Co-op Power Boston Metro East
Councils on Aging and Senior Services	Dudley Street Neighborhood Initiative	Elder Services of Cape Cod and the Islands Inc
Elder Services of Merrimack Valley	Element Care	Fall River Community Development Agency
Fall River Community Health Center	Family Services of Central Massachusetts	Greater Boston Latino Network
Healthy Home Initiatives	Healthy Homes Energy	Housing Nantucket
Inquilinos Boricuas en Accion	Massachusetts Department of Energy Resources	Mass Community Action Network
Mass Law Reform Institute	Massachusetts Affordable Housing Alliance	Massachusetts Alliance of Portuguese Speakers
Massachusetts Association of Portuguese Speakers	Massachusetts Housing Partnership	Massachusetts Landlords Association
Massachusetts Veterans' Service Officers Association	Merrimack Valley Food Bank	Merrimack Valley Immigrant and Education Center
Neighborhood of Affordable Housing	Refugee and Immigrant Assistance Center	Rental Housing Association of Berkshire County
Russian Community Association of Massachusetts	Somali Development Center	Spanish American Center
The Green Justice Coalition	The Immigrant Learning Center	Viet Aid Dorchester
Vietnamese-American Civic Association	Way Finders	

A.3 Customer Survey (Task 3)

A.3.1 Methods

The customer survey used a multimode approach to reach and speak with residents. This robust customer survey effort served two primary objectives:

- Test the validity of using census data to characterize nonparticipating customers within a given census area (i.e., does evidence of ecological fallacy exist in DNV GL's census data based analysis of nonparticipation?)
- Assess demographic, attitudinal, and other differences between participants and nonparticipants to identify potential barriers to participation in the residential energy efficiency programs

It was important to reach as many sampled respondents as possible to minimize response bias and best capture nonparticipating customer needs and characteristics. A multimode approach with multiple touch points and encouragement opportunities is the best opportunity to maximize response. The evaluation team subdivided its data collection approach into four activities:

- **Web survey:** All sample points were invited to participate in a web survey through email (where email was available) and advanced letters (sent to all sampled respondents). The evaluation team sent second reminder invitations to nonresponders after the web survey was open for approximately a week and a half. Respondents received a \$20 prepaid Visa gift card for completing the entire survey. The survey took between 15 and 20 minutes to complete. The web survey remained open the entire field period.
- **Telephone survey:** Approximately 3 weeks after the initial web survey invitation the research firm attempted to reach nonresponding households via telephone. At first, the telephone survey targeted all nonresponding sample points; however, given the relatively high number of nonresponders the team refocused the attention on nonparticipants (the primary focus of this study). The telephone survey was the same as the web survey instrument. Respondents received a \$20 prepaid Visa gift card for completing the entire survey.
- **Mail survey:** The team mailed a survey to all households that did not respond to the web or telephone effort. To maximize response, the mail survey was an abbreviated version of the web/telephone survey, including the most critical demographic and awareness questions. A \$5 pre-incentive was included with the mail survey. In addition, respondents received a \$20 prepaid Visa gift card for completing the survey.
- **In-person door-to-door survey:** Finally, the evaluation team selected nonresponding nonparticipants to visit door-to-door to encourage their completion of the abbreviated mail survey. Visits took place between November 2 through November 5, 2019 to attempt to reach customers on the weekend as well as weekdays. Advanced notifications were sent to homes selected (see the in-person sampling approach in Section A.5.2). While at the home, the survey team also took the opportunity to ask interview questions (discussed later). Postcards were left at homes where target respondents did not answer the door or were not home

What is Ecological Fallacy?

Ecological fallacy arises when one makes an inference about an individual, or subset of individuals, based on aggregated data for a group. Aggregating the data may lead to falsely determining the characteristics of the individuals of interest. In this study, the evaluation team investigated whether nonparticipants within a Census area exhibit a similar demographic profile (in terms of income, home ownership, language, etc.) to the general population in that Census area, or whether they are unique or different in some way that makes using Census data invalid for targeting and understanding nonparticipation.

letting them know the evaluation team was there and offering a telephone number to contact to complete the survey. Three teams of two researchers completed the in-person surveys. Two of the three teams spoke Spanish or Portuguese. Respondents received a \$20 Visa gift card onsite for completing the abbreviated survey and were offered an additional \$30 Visa gift card for completing an in-depth interview as well.

The team provided all materials in English and translated into three languages: Spanish, Portuguese, and Chinese (Mandarin dialect). These languages were selected based on publicly available documentation of languages spoken in homes, including the US Census and top languages reported by Massachusetts Public Health Strategy and Communications.³

A.3.2 Sampling Approach

This subsection summarizes the sampling approach for the full customer survey effort followed by the in-person survey effort.

Full Customer Survey

For this study, nonparticipants are defined as addresses (also referred to as buildings or locations) that have not participated in any Mass Save programs between 2013 and 2017. The PAs contracted with DNV GL to append PAs' customer information system data with program tracking data to identify addresses, or buildings, treated by Mass Save programs within this time period. Nonparticipants are any address, or unit within a building, not flagged as being served.⁴

The evaluation team completed a two-level sampling approach.

- **Level 1:** Develop participation strata and assign Massachusetts census tracts based on customer participation rates from DNV GL's nonparticipant analysis.⁵ Randomly select census tracts within each participation stratum.
- **Level 2:** Randomly sample customers located in the sampled census tracts to complete a survey.

This two-level sampling approach struck the appropriate balance between inclusivity (i.e., every customer in the state could be sampled) and using DNV GL's analysis to cost-effectively target nonparticipating customers.

Sampling Units

According to the most recent US Census, more than 2.5 million Massachusetts households live in one of the 1,478 census tracts in the state. Census tracts have three key characteristics that make them an ideal choice for geographic sampling and, subsequently, data collection.

- They are **comprehensive and exhaustive**. Census tracts cover every inch of the country—and therefore all of Massachusetts. Collectively, the census tracts in the state capture the full range of Massachusetts PA customers and offer a comprehensive list from which to sample.

³ Office of Public Health Strategy and Communications. Translation Toolkit: Foreign Language Guide. Revised October 2010. <https://www.mass.gov/files/documents/2016/07/ot/appendix-f-language-audience-guides.pdf>

⁴ Based on DNV GL's nonparticipant analysis documentation, location participation measures whether a building participated. Location participation is similar to coverage rate. It is best used to answer questions such as, "How many buildings did the program set foot in regardless of size?"

⁵ The DNV GL analysis used residential program tracking data from 2013 through 2017 and PA billing data to calculate participation rates.

- They are **mutually exclusive** (i.e., there are set boundaries between census tracts and no two tracts overlap). Unlike other potential sampling units, the clear boundaries of census tracts—or any other census area designation for that matter—avoid ambiguity that can complicate or even compromise the extrapolation of sample-based data collection effort.
- They are **reasonably sized**. The smallest reporting unit for which the US Census provides the demographic data the team is interested in for this study (e.g., percent non-English speakers) is the census block group. However, because block groups contain fewer residents than census tracts—on average, there are three to five block groups in a census tract—the statistical uncertainty around block group values is far greater than that of a census tract.⁶ The lesser uncertainty around census tract population estimates increases the likelihood that the evaluation team can determine, with statistical significance, whether the surveyed nonparticipants in a given census tract exhibit the same (or different) characteristics as reported by the census for all customers in that tract.

However, not all the tracts were suitable for sampling as part of this survey. Some of the tracts are not part of any PA's electric or gas service territory. Other tracts are too sparsely populated to meet per-tract survey target.⁷ At the PA's direction, the evaluation team also excluded tracts located in Lawrence, Andover, and North Andover; customers in these towns were affected by fires in September 2018 and have since been subject to higher levels of PA communication.

Collectively, these exclusions removed 105 tracts from the survey sample frame, just over 7% of the total tracts in the state (Table A-4).

Table A-4. Census Tract Sampling Attrition

Attrition	Removed Tracts	Remaining Tracts	Percent Removed
Total Tracts (in Massachusetts)	-	1,478	
Located in Lawrence, Andover, North Andover	31	1,447	2.1%
Not served by electric or gas PA	32	1,415	2.2%
Less than 350 unique accounts ⁸	42	1,373	2.9%
Overall	105	1,373	7.1%

Next, the team used the findings of DNV GL's census-based participation analysis⁹ to stratify the remaining 1,373 tracts. Upon confirming the normal distribution of tracts, the team divided the census tracts into the following four participation-based quartiles:

⁶ For example, the margin of error, as it relates to the estimated percentage of households that own their home in Massachusetts Census Tract 101 (in Barnstable County) is 13%. However, the margin of error for the same ownership rate estimate in the five block groups that aggregate to Census Tract 101 are much higher at 23%, 34%, 28%, 36%, and 39%, respectively.

⁷ As detailed later in the document, the evaluation team will seek to complete 70 surveys in each sampled tract. Assuming a survey response rate of 20%, the team required that tracts eligible for inclusion in the study must include at least 350 unique customers.

⁸ This filter also includes 13 Census tracts not included in the dataset provided by DNV GL; these tracts were either designated as "water only" by the Census or exhibited a small number of total households (i.e., less than 10).

⁹ DNV GL, per its block group model findings memo, calculated location-level participation "as the number of unique locations that participated at least once between 2013 and 2017, divided by the number of unique locations in the 2013-2017 billing data." It is important to note that DNV GL's participation analysis, the output of which the team used for sampling, excluded both upstream lighting and behavioral program participants.

1. Less than 25.9% (of locations participated in a PA residential program between 2013 and 2017)
2. 25.9%-32.4%
3. 32.4%-38.8%
4. More than 38.8%

Because this study focuses on nonparticipation, the evaluation team further bifurcated the quartile with the lowest participation rates (Quartile 1) into two strata (less than 20.7% and 20.7%-25.9%) creating five participation rate-based strata. Creating the additional strata on the lowest end of the participation range allowed the team to more effectively target customers living in the census tracts exhibiting the lowest participation rates based on DNV GL's analysis.

Finally, the team separated the eligible 1,373 tracts into two groups: dual fuel tracts (served by both an electric and gas PA) and electric-only or gas-only tracts (only receive one service through a PA). Most of the tracts (86%) in the sample frame are dual fuel tracts. Participation is higher in dual fuel tracts.

Table A-5. PA Service

PA Coverage	Tracts	% of Tracts	Avg. Participation
Dual Fuel	1,177	86%	34.7%
Electric-Only* and Gas-Only	196	14%	25.2%
Overall	1,373	100%	33.4%

* Includes five tracts that have PA electric service but only partial PA gas service.

Because the team's sampling approach prioritizes tracts with lower participation rates, it is important to sample from these two types of tracts separately; otherwise, electric- or gas-only tracts will be overrepresented relative their proportion of tracts statewide.

The evaluation team randomly sampled 30 dual fuel tracts across the five participation-based strata, as shown in Table A-6. The team sampled tracts in strata with lower participation rates at higher rates to ensure greater representation of the nonparticipating households, which is the study's focus. As noted previously, this approach balances inclusivity (i.e., any customer in any tract could be surveyed) with prioritizing resources on portions of the state that have historically exhibited lower participation rates.

Table A-6. Level 1 Sampling: Census Tracts (Dual Fuel)

Stratum	Participation Range	Number of Census Tracts	Sample	Sampling Rate ¹⁰
1	Less than 20.7%	121	9	7.4%
2	20.7%-25.9%	131	5	3.8%
3	25.9%-32.4%	272	8	2.9%
4	32.4%-38.8%	318	5	1.6%
5	More than 38.8%	335	3	0.9%
Overall		1,177	30	2.5%

Next, the team randomly sampled five tracts—one from each participation strata—from the pool of electric- or gas-only tracts (Table A-7).

Table A-7. Level 1 Sampling: Census Tracts (Electric- and Gas-Only)

Stratum	Participation Range	Number of Census Tracts	Sample	Sampling Rate
1	Less than 20.7%	51	1	2.0%
2	20.7%-25.9%	41	1	2.4%
3	25.9%-32.4%	71	1	1.4%
4	32.4%-38.8%	25	1	4.0%
5	More than 38.8%	8	1	12.5%
Overall		196	5	2.6%

Table A-8 combines the previous two tables and summarizes the total tracts sampled for inclusion in this study.

Table A-8. Level 1 Sampling: Census Tracts (All)

Stratum	Participation Range	Number of Census Tracts	Sample	Sampling Rate
1	Less than 20.7%	172	10	5.8%
2	20.7%-25.9%	172	6	3.5%
3	25.9%-32.4%	343	9	2.6%
4	32.4%-38.8%	343	6	1.8%
5	More than 38.8%	343	4	1.2%
Overall		1,373	35	2.5%

Executing the sampling methodology described above resulted in the selection of the following 35 census tracts to include in the study. Table A-9 provides a complete list, sorted by stratum and

¹⁰ Sampling rate = sampled tracts/total tracts (in each stratum).

participation rate. The table also includes the town, electric PA, and natural gas PA associated with each sampled tract.

Table A-9. Randomly Sampled Census Tracts

Sample Stratum	Census Tract ID	Town	Electric PA	Gas PA	DNV GL Participation Rate
1	613600	Taunton	Not served by PA	Columbia Gas	5%
1	652600	New Bedford	Eversource Energy	Eversource Energy	11%
1	651800	New Bedford	Eversource Energy	Eversource Energy	11%
1	733000	Worcester	National Grid	Eversource Energy	15%
1	650400	New Bedford	Eversource Energy	Eversource Energy	16%
1	020101	Boston	Eversource Energy	National Grid, Eversource Energy	17%
1	640600	Fall River	National Grid	Liberty Utilities	19%
1	640500	Fall River	National Grid	Liberty Utilities	19%
1	731500	Worcester	National Grid	Eversource Energy	19%
1	252400	Methuen	National Grid	Columbia Gas	20%
2	051000	Boston	Eversource Energy	National Grid, Eversource Energy	21%
2	950400	Nantucket	National Grid	No gas service	24%
2	813403	East Longmeadow	National Grid	Columbia Gas	24%
2	000504	Boston	Eversource Energy	National Grid, Eversource Energy	24%
2	801700	Springfield	Eversource Energy	Columbia Gas	25%
2	081001	Boston	Eversource Energy	National Grid, Eversource Energy	25%
3	221500	Gloucester	National Grid	National Grid	26%
3	014002	Bourne	Cape Light Compact	National Grid	26%
3	331200	Wilmington	Not served by PA	National Grid	27%
3	340000	Medford	National Grid	National Grid	27%
3	383200	Framingham	Eversource Energy	Eversource Energy	28%
3	757100	Southbridge	National Grid	National Grid	29%
3	802100	Springfield	Eversource Energy	Columbia Gas	29%
3	642300	Fall River	National Grid	Liberty Utilities	30%
3	617101	Freetown	Eversource Energy	Eversource Energy	32%
4	357500	Belmont	Not served by PA	National Grid	34%
4	327103	Pepperell	National Grid	National Grid	34%
4	813207	Agawam	Eversource Energy	Columbia Gas	35%
4	655100	Fairhaven	Eversource Energy	Eversource Energy	35%
4	315402	Tewksbury	National Grid	National Grid	37%
4	810404	Ludlow	Eversource Energy	Columbia Gas	38%
5	334300	Reading	Not served by PA	National Grid	40%
5	384001	Framingham	Eversource Energy	Eversource Energy	46%

Sample Stratum	Census Tract ID	Town	Electric PA	Gas PA	DNV GL Participation Rate
5	813304	Longmeadow	Eversource Energy	Columbia Gas	48%
5	369000	Waltham	Eversource Energy	National Grid	48%

The stratified random sampling methodology did not yield a census tract located in Berkshire Gas or Unitil's service territory. Because this study is a statewide effort, it is not essential that every PA has at least one census tract in the sample.

However, to ensure representation for every electric and natural gas PA and to include specific census tracts in towns of interest to study stakeholders, the evaluation team created a certainty stratum. The stratum includes four census tracts: one each in Lowell, Lynn, Fitchburg, and Amherst. The certainty stratum, shown in Table A-10, supplements the randomly selected tracts.¹¹

The evaluation team used a similar approach to sample census tracts within the towns of interest identified by the PAs and EEAC. For each town, the team divided the census tracts in that town into similar participation-based strata and randomly sampled one tract from each town's lowest participation stratum.

Table A-10. Census Tracts in Certainty Stratum

Census Tract ID	Town	Electric PA	Gas PA	DNV GL Participation Rate
310100	Lowell	National Grid	National Grid	17%
205800	Lynn	National Grid	National Grid	17%
710500	Fitchburg	Unitil	Unitil	18%
820300	Amherst	Eversource Energy	Berkshire Gas	35%

Adding the four certainty stratum tracts to the 35 stratified random sample in Table A-8 results in the 39 total sampled tracts in Table A-11.

**Table A-11. Level 1 Sampling: Census Tracts
(All Randomly Sampled Tracts plus Certainty Stratum Tracts)**

Stratum	Participation Range	Number of Census Tracts	Sample
1	Less than 20.7%	172	13
2	20.7%-25.9%	172	6
3	25.9%-32.4%	343	9
4	32.4%-38.8%	343	7
5	More than 38.8%	343	4
Overall		1,373	39

The team's analysis of the census tracts included in this study, through both the stratified random sampling approach and via the certainty stratum, determined that the tracts are located throughout

¹¹ Tracts in the certainty stratum are subject to a different extrapolation approach later in the study because they were not selected through the stratified random sampling process and, therefore, have a different selection probability.

the state, including urban and rural tracts, and exhibit a wide range of characteristics of interest for this study (e.g., the percentage of households renting their home, the percentage of non-English speakers, and the percentage of households at all income levels, including those likely to qualify for moderate income incentives).

Level 2: Customer Sampling

The 39 sampled census tracts have an average of 4,602 households per tract. Because it is not viable for the evaluation team to attempt to survey every household, the team undertook a second level of sampling: randomly sampling households within sampled tracts.

The evaluation team attempted to survey a minimum of 70 households in each sampled tract, which, if successful, would result in 2,730 surveys completed statewide and yield the necessary statistical significance to:

- Compare the characteristics of nonparticipants in a tract as determined by the survey and the characteristics of the total population of that tract as reported by the US Census (to test for ecological fallacy)
- Report rigorous statewide results regarding the characteristics of nonparticipants
- Compare characteristics of participants and nonparticipants to identify differences to inform the PAs' ongoing attempt to mitigate participation barriers

This strategy attempted to gather completed surveys from approximately 1,780 nonparticipants and 950 participants (see Section A.3.3 for response details).

Table A-12. Level 2 Sampling: Households

Stratum	Participation Range	Population	Sample*	Sampling Rate
1	Less than 20.7%	18,541	910	4.9%
2	20.7%-25.9%	12,191	420	3.4%
3	25.9%-32.4%	17,552	630	3.6%
4	32.4%-38.8%	10,259	490	4.8%
5	More than 38.8%	4,760	280	5.9%
Overall		63,303	2,730	4.3%

*The target was 70 completed surveys in each sampled census tract.

In-Person Survey Sampling

The purpose of the in-person surveys was to attempt to reach other nonresponsive nonparticipants from a subset of the sampled census tracts. These customers reflect the most difficult to reach customers, and thereby the least represented, through the previous web/phone/mail survey efforts.

While the evaluation team used the in-person surveys to gather the same quantitative information captured through the abbreviated mail survey, this activity is in many ways qualitative. In other words, the in-person surveys are not intended to represent nonparticipants statewide or even in the sampled census tracts for the entire study. Rather, the in-person survey effort was a continuation of the team's multimode effort to reach the customers believed to have not participated in a PA program and that, likely, are also not adequately responding to this research's efforts.

The team targeted 70 completed surveys across the 39 sampled census tracts for 2,730 completed surveys. To maximize response and representativeness, the team released sufficient sample to achieve a 35% response rate (simply calculated as survey completes divided by starting sample). This goal was optimistic; the web/phone/mail approach resulted in nearly 1,700 partially and fully completed surveys.

Using survey response data provided as of October 18, 2019, the evaluation team calculated the percentage of targeted nonparticipants that responded to the survey for each of the 39 sampled census tracts. For example, if the study sought to speak with 30 nonparticipants in a census tract, and 15 responded, the nonparticipant response for that tract would be 50%.

Through this analysis, the team identified eight census tracts with the lowest nonparticipating response rates to include in the in-person interviews. These tracts are all in the lowest participation stratum and had 35% or fewer of targeted nonparticipants respond to the survey (Table A-13).

Table A-13. Selected Census Tracts for In-Person Surveys

Stratum	Census Tract	Town	Electric / Gas PA(s)	No. of NP Targeted	No. of NP Responded	% NP Responded
1*	205800	Lynn	National Grid	53	7	13%
1	640600	Fall River	National Grid/ Liberty Utilities	55	8	15%
1	650400	New Bedford	Eversource Energy	55	14	25%
1	640500	Fall River	National Grid/ Liberty Utilities	48	13	27%
1	651800	New Bedford	Eversource Energy	38	11	29%
1	252400	Methuen	National Grid/ Columbia Gas	54	16	30%
1*	310100	Lowell	National Grid	26	8	31%
1	733000	Worcester	National Grid/ Eversource Energy	51	16	35%

NP = nonparticipant

* Included in the certainty stratum

The team examined these eight tracts to ensure they collectively represent a cross-section of the customer groups of interest (moderate income, renters, and non-English speakers). Using American Community Survey (ACS) data analysis, the team calculated what portion of households or units reported incomes within specified income categories, languages spoken in household, and limited English speaking. These statistics were ranked within the selected 39 census tracts. Table A-14 shows, via an X, where that census tract ranked within the top 10 out of the 39 tracts. All in-person census tracts rank within the top 10 with at least one group of interest.

The team recognizes that there are some towns, such as Boston, not included in the areas selected for follow-up in-person surveys. This is because these towns, which were part of the larger sample of 39 census tracts included in the study, were more responsive to the team's previous web, phone, and mail survey outreach. The evaluation team used the additional qualitative research to ensure customers from within these areas were included in the study.

Table A-14. Demographic Indicators Where Census Tract Ranked in Top 10 out of 39 Study Census Tracts (Indicated by X)

Census Tract	Town	% Income Under \$30,000	% Potentially Moderate Income*	% Renters	% Spanish Language†	% Indo European Language†	% Asian / Asian Pacific Language†	% Other Language†	% Limited English
205800	Lynn		X		X		X	X	X
640600	Fall River	X	X	X		X			X
650400	New Bedford		X			X			X
640500	Fall River					X			X
651800	New Bedford	X		X				X	
252400	Methuen	X		X	X				X
310100	Lowell	X		X	X		X	X	X
733000	Worcester			X			X	X	

* Approximate; estimated using income categories between \$50,000 and \$75,000, which most closely align to Massachusetts 60%-80% state median income (SMI), the qualifying income level for the moderate income offering, assuming an average household size between 2.5 and 3.1 (the average household and average family size, respectively, per the ACS: <https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF>).

† Percentage where individuals that spoke this language also reported limited and nonlimited English per ACS.

With the eight census tracts selected for in-person surveys, the evaluation team worked to create a list of specific nonresponding nonparticipants to contact. To do so, the team first selected all nonparticipants in the census tract that did not respond to the survey and removed the following from that list:

- All customers that explicitly refused to participate as part of the web or phone survey
- Households with “Do Not Call” indicated on their record
- Households where letters were returned as undeliverable

While households with undeliverable addresses could be a valid and contactable sample point, it was not possible for the team to send advanced notification to them about the upcoming visit, which is imperative to visit a customer’s residence. For customer satisfaction and potential team safety, the evaluation team opted to remove these households from the in-person sample frame.

This process resulted in 604 sampled households (Table A-15) across all eight tracts. The team retained a census (all) of these households to target for the in-person visits.

Table A-15. Final Sample Counts for Selected In-Person Census Tracts

Census Tract	Town	Number of Active Nonparticipant Sample Units (A)	Number on Do Not Call List (B)	Number with Undeliverable Addresses (C)	Final In-Person Sample Frame (A-B-C)
205800	Lynn	133	23	12	98
640600	Fall River	129	27	15	87
650400	New Bedford	114	0	30	84
640500	Fall River	116	25	17	74
651800	New Bedford	64	0	14	50
252400	Methuen	130	13	7	110
310100	Lowell	70	5	40	25
733000	Worcester	115	14	25	76
Total		871	107	160	604

A.3.3 Response

The team completed 1,683 surveys. Web and telephone respondents that did not fully complete the survey (dropping off before the language question series) were removed, reducing the count by 70 to 1,613 surveys (Table A-16). The evaluation team further removed several cases in the analysis stage for various reasons (e.g., said they are no longer associated with an address).

The web and the abbreviated mail modes were the most fruitful means for reaching customers. The mail survey approach was the most successful in recruiting non-English and English as a second language speakers.

Table A-16. Completion Rate and Targeting Strategy by Survey Mode

Mode	n	Targeted	Month
Web	753	All sample	Aug/Sep
Phone	101	Nonparticipants nonresponsive to web	Sep
Abbreviated mail	735	All nonresponsive to web/phone with deliverable addresses	Oct
In-person*	24	Nonresponsive nonparticipants in eight census tracts with lowest survey response	Nov

* In-person surveys are excluded from the survey-based data analysis.

The study resulted in a final response rate of 24%. Undeliverable mail and bad telephone numbers hampered the productivity of the web, telephone, and mail survey effort.

The in-person surveys also received a low response rate; of the approximately 530 addresses visited, the evaluation team only completed surveys with 24 households. The team experienced large multifamily buildings without associated units and the inability to identify the target respondent, no response, and households that simply refused, which were the major contributors to nonresponse for the in-person effort.

Table A-17. Response by Survey Mode

	Web	Phone	Mail	In-Person Survey	Overall
Total Sample (phone run concurrently with web survey)	7,800	7,800	6,401	600	7,800
Partial Completes	59	11	0	0	70
Full Completes	753	101	735	24	1,613
Total Respondents (Partial + Full)	812	112	735	24	1,683

Table A-18.. Overall Survey Response Rate

	Overall
Total Sample	7,800
Undeliverable (Incorrect or Duplicate Email, Phone, or Address)	955
Adjusted Sample (Excludes Undeliverables)	6,856
Nonresponders	4,281
Ineligible/Refused	881
Partial Completes	70
Full Completes	1,613
Overall Response Rate (Full + Partial Completes/Adjusted Sample)	24.5%

A.3.4 Survey Weighting Scheme

After completing the customer survey, the team assigned analysis weights to each individual response such that the collective set of survey responses was statistically representative of MA.¹² Broadly, each individual respondent's analysis weight is inversely proportional to the probability that their household was sampled from a population of active PA residential customers across Massachusetts.

More specifically, the team's weighting approach reflected the two levels of sampling detailed in Section A.3.2:

- **The probability of selecting the census tract.** As described above, the team sampled using five program participation rate-based strata, each with different probability of census tract selection (i.e., lower participation rate strata were sampled at higher rates). Under this strategy, census tracts in the lower participation rate strata had a higher probability of being selected for inclusion in the study. In addition to the tracts selected through this stratified randomly selection process, the team also targeted four specific lower participation census tracts of interest to study stakeholders to include in the study. These four tracts, part of a separate certainty stratum, had a different probability of selection (100%).
- **The probability of selecting the household within each census tract.** It was not practical for the team to attempt to survey every household in each previously sampled census tract. Therefore, the team undertook a second level of sampling: randomly sampling households within sampled tracts. Consequently, this weighting element accounted for the probability that the team randomly selected a given household within a previously sampled census tract to include in the study.

¹² Excluding the 105 tracts that the team omitted because the tracts were either not part of any PA's electric or gas service territory, too sparsely populated to meet the per-tract survey target, or located in Lawrence, Andover, and North Andover. More details about these exclusions can be found in the Survey Sampling Methodology Memo in Nonparticipant Survey Sampling Plan.

In addition to accounting for sampling at the census tract and household level, the team's weighting approach also accounted for households identified as program participants responding to the survey at a higher rate than nonparticipants. To account for this common response bias and to avoid disproportionately representing the perspective of program participants in overall analyses, the team's weighting scheme rebalanced the proportion of responses from sampled participant and nonparticipants within each tract such that it reflected the overall participant/nonparticipant split for the entire census tract.

The team determined each specific survey respondent's analysis weight by multiplying the probability of a tract being selected with the probability of a household being selected and then accounting for differences in participant and nonparticipant response rates relative to their proportions in the population.

Equation A-1 shows this concept mathematically, where subscript i represents census tracts, subscript j represents participation status (i.e., participant or nonparticipant), and subscript k represents the survey respondent.

Equation A-1. Survey Weighting Formula

$$w_{ijk} = \frac{1}{P1_i * P2_i * P3_{ij}}$$

In Equation A-1, $P1_i$ is the census tract's sampling rate. $P2_i$ and $P3_{ij}$ are defined as follows:

$$P2_i = \frac{\# \text{ sampled in Census Tract } i}{\# \text{ households in Census Tract } i}$$

$$P3_{ij} = \frac{\# \text{ completed surveys with Part Status } j \text{ in Census Tract } i}{\# \text{ sampled with Part Status } j \text{ in Census Tract } i}$$

An Example: Census Tract 000504

Census Tract 000504 is located in Boston. It was one of the five randomly selected from the 131 tracts in participation strata 2 (between 20.7% and 25.9% participation).

The team randomly selected 700 of the 2,137 households in tract 000504 to receive the survey. Of those 700 households, 250 were participants and 450 were nonparticipants.

Of the 250 sampled participants in the tract, only seven completed the survey. Consequently, the team calculated the weight of each completed survey by participant tract 000504 as follows:

$$\frac{1}{\frac{5}{131} * \frac{700}{2,137} * \frac{7}{250}} = 2,856.6$$

Of the 450 selected nonparticipants, 26 completed the survey. Therefore, the team calculated the weight of each completed nonparticipant survey in tract 000504 as:

$$\frac{1}{\frac{5}{131} * \frac{700}{2,137} * \frac{26}{450}} = 1,384.4$$

A.4 Property Owner/Manager Research (Task 4)

This activity consisted of surveys and interviews with property owners and managers. This supplementary activity was designed to gain a deeper understanding of landlord and property manager perspectives on Mass Save programming, specifically barriers for them or for their renters in participating, and insights on enhancing engagement strategies.

Many of the surveyed customers identified themselves as renters. The evaluation team's surveys with these customers provided insight into renter participation in and awareness of Mass Save offers, as well as how renters interact with their landlord or property manager to make energy-related decisions. However, renters are typically not the ultimate decision maker (or, at least, the only decision maker) when it comes to participating in energy efficiency programs. This is particularly true for program

offers that involve long-term investment in the property, such as adding insulation or upgrading an existing heating or cooling system. As a result, the team conducted a separate survey or in-depth interview with property owners and managers.

A.4.1 Landlord Surveys

Methods

The evaluation team contacted property owners or managers identified through the customer survey to solicit their participation in the team's owner/manager-specific survey.¹³ The team recruited owners and managers to participate in the survey in two waves. The team reached out via email and phone, including two reminders to participate. The survey was open for responses for approximately 4 weeks. The team offered a \$50 incentive for completing the survey. The survey took about 10 minutes to complete.

Sampling Approach

Of customer survey respondents, 344 self-identified as living in a rental property. Of these, just under half (n=150) provided the evaluation team with contact information (name, phone number, or email address) for their landlord or property manager. The team contacted all 150 property owners or managers identified through the customer survey.

Response

Despite the multiple waves and different forms of outreach, the team was only able to successfully complete a survey with just over 5% of the identified owners and managers (n=17). While the total survey sample was small and did not lend itself to statistical rigor, the 17 surveyed property managers and owners reflected a range of rental scenarios and provided the team with useful anecdotal insights. Table A-19 provides a breakdown of survey responses by respondent type and by building size.

Table A-19. Summary of Owner/Property Manager Surveys

Property Type	Owner*	Property Manager	Owner and Manager	Total
1-2 Units		1	4	5
3-4 Units	2	1	1	4
5-9 Units				0
10-19 Units	1	2		3
20-49 Units		2	1	3
50+ Units		2		2
Total	3	8	6	17

*Work with property manager for day-to-day management of property.

¹³ A copy of the property owner/manager survey instrument is provided in the compilation of data collection materials, delivered separate from this appendix..

A.4.2 In-Depth Interviews

Methods

The in-depth interviews with owners and managers lasted about an hour. The team offered an incentive of \$100 to encourage participation and to recognize their time.

Sampling Approach

The team asked owners and property managers if they were willing to participate in additional research as part of the current nonparticipant study; ten indicated that they were. The team followed up with all 10 to schedule an in-depth interview to dive deeper—and more interactively—into the topic of energy efficiency program awareness and participation.

Response

Only five of the owners/managers went on to complete an in-depth interview. The team attempted to recruit additional landlords and property managers through snowball sampling (i.e., by asking interviewees to refer other landlords and property managers they know). However, none of the five interviewees either knew, or were willing to share, such contact information.

A.5 Additional Qualitative Customer Research Approach (Task 5)

A.5.1 Additional Qualitative Research Plan

The evaluation team identified four qualitative research activities to address the research questions described below:

- Qualitative add-on to the in-person customer surveys
- Follow-up phone interviews with customers
- Intercept interviews with customers at community organizations
- In-person group interviews with landlords and property managers

These activities provided a better understanding of barriers to Mass Save program participation and explored strategies for reaching and engaging customers, particularly those highlighted in the term sheet (renters, non-English speakers, moderate income households). The qualitative research prioritized speaking with customers within high nonparticipation census tracts and low rates of participation in the survey.

This section addresses the customer qualitative research activities. The landlord qualitative research is described above in Section A.4.

Research Questions

This research addresses two of the four primary nonparticipant study research questions. Table A-20 shows these questions according to research topic.

Table A-20. Primary Research Questions by Topic

Topic	Primary Research Question
Barriers	<p>What barriers are preventing customers from participating in Mass Save programs, and how if at all do those barriers differ by groups of interest? Specific research issues include:</p> <ul style="list-style-type: none"> • Barriers to participation. Identify key concerns in people's lives that might prevent them from participating in Mass Save, their main priorities day-to-day, and how they think about energy efficiency in their home, if at all. • Overcoming barriers at point of entry and completion. Determine barriers and pain points that may have stopped participation and who or what helped overcome. Ask of both nonparticipants and customers that self-report participation. • Participation drivers. Explore motivations to participate in programs (Mass Save or others) and the context behind these motivations. • Language as a barrier. Take an in-depth look at the extent to which non-English speakers perceive language as a barrier to participating in programs.
Engagement Strategies	<p>What implementation strategies can the PAs use to more successfully engage these different nonparticipating customer segments? Specific research issues include:</p> <ul style="list-style-type: none"> • Understanding of and reactions to Mass Save. Learn respondents' perceptions about what Mass Save provides; provide an overview of Mass Save programs and inquire about levels of interest in future Mass Save participation. • Trustworthy programs. Explore what engagement strategies worked with other programs, and reasons for participation in these other programs that Mass Save could model or learn from. • Trustworthy information sources. Identify trusted sources of information and preferred methods of learning about programs. • Marketing strategies. Gather feedback on the effectiveness of outreach materials, in-person communications, and messaging on select marketing materials such as flyers or bill inserts (translated materials used were applicable).

A.5.2 In-Person Customer Interviews (Add-On to the Customer Survey)

As part of Task 3 (customer surveys), the evaluation team conducted in-person house-to-house surveys with nonparticipating survey nonrespondents. While onsite, the evaluation team took the opportunity to ask qualitative questions. Because the primary focus of this in-person research was to have nonrespondents complete the mail survey, this add-on interview was a brief set of questions touching on the key points of the research. By leveraging the team that is already going in-field for Task 3, this research design was cost-effective and allowed the evaluation team to maximize those in-person encounters.

Methods

The qualitative add-on was short interviews administered as an add-on to the in-person customer survey (Task 3 in the Stage 3 Plan). Six researchers, working in pairs, visited customers from the survey sample that were identified as nonparticipants that had not yet responded to the survey. Over a span of 4 days, including a weekend, researchers administered the customer survey. Respondents received \$30 for participating in the qualitative interview. The \$30 incentive was in addition to the \$20 they received for completing the in-person survey. Interviews lasted between 15 and 20 minutes following the administration of the in-person survey, which lasted about 10 minutes. Immediately after the interview the interviewers recorded responses.

Response

The team successfully recruited 13 customers to complete an in-person interview.

Table A-21. Primary Research Questions by Topic

	Speak Languages Other Than English	Renters	Income*			Total
			Low	Moderate	Higher than Moderate	
Completed Add-On Interviews	9	8	3	1	1	13

*Not all respondents provided information about income and household.

A.5.3 Customer Intercept Interviews at Select Community Organizations

The aim of this activity was to use community connectors (staff that served and had relationships with targeted harder-to-reach populations) and their associated community organizations to reach customers that either were not directly recruited for or may not have participated in the customer survey. This portion of the study allowed the evaluation team to intentionally target specific groups of interest and gain a unique perspective on customer perceptions, understanding, and participation of Mass Save programming given they would not be primed about the study through advanced notifications and survey questions.

Methods

The intercept interviews were short (about 10 minutes) and conducted at community organizations that agreed to participate in the study. The evaluation team worked with the PAs and the EEAC to identify community organizations and key contacts to engage. The team also referred to organizations from Task 2 that expressed interest in continuing to support this study. The types of organizations recruited included those that served non-English speakers, renters/landlords, food pantries, and those that provide services to income-qualified households. During recruitment, the organizations confirmed having sufficient foot traffic to allow the team to interview customers and encouraged their staff to be supportive of the research effort. Customers completing an interview with the evaluation team received a \$25 gift card for their participation. Four researchers from the evaluation team worked in pairs at different organizations to conduct the intercept interviews.

Sampling Approach

The team aimed to recruit four to eight organizations to host the evaluation team to gather up to 40 customer intercept interviews. The team considered the following in recruiting organizations:

- **Participation status (primary sampling dimension):** Organizations serving targeted census tracts with high ratios of nonparticipants
- **Non-English status:** Organizations serving targeted non-English speaking populations (Spanish, Portuguese, Chinese).
- **Renter status:** Organizations that offer housing and rental programs.
- **Low and moderate income status:** Organizations that have access to customers across income.

Response

The evaluation team successfully recruited three organizations and completed 59 intercept interviews, 19 more than the target.

Table A-22. Organizations Hosting Intercept Interviews

Confirmed Host Organizations (n=3)	Declined Host Organizations (n=4)
<ul style="list-style-type: none"> Codman Square neighborhood via the Codman Square Neighborhood Development Corporation, Dorchester/Boston Arise Springfield Springfield Partners for Community Action* 	<ul style="list-style-type: none"> Chinese Progressive Association, Boston** Summit ElderCare, Lowell, Worcester Coalition For Social Justice, Boston** Daily Table, Boston
*Mass Save implementation partner	
**Green Justice Coalition member	

Table A-23. Intercept Interview Participant Demographics

	Speak Languages Other Than English	Renters	Income			Unknown Demographics*	Total
			Low	Moderate	Higher than Moderate		
Completed Intercept Interview	23	29	26	0	3	11	59

*Not all respondents provided all or any demographic information.

A.5.4 Follow-Up In-Depth Telephone Interviews with Customers

The aim of this activity was to follow up with nonparticipant customer responses to the survey and probe deeper into their perceptions and barriers to participation in Mass Save. Of particular interest were those customers who looked into participating in Mass Save or began the process but did not end up participating.

Methods

A team of researchers conducted follow-up interviews with customers one-on-one by phone. Each interview lasted about 30 minutes. The evaluation team offered a \$50 incentive for customers to participate.

Sampling Approach

Follow-up interviews were conducted with nonparticipant customers who, in their web, mail, or phone survey response, indicated they would be interested in participating in additional research. The study targeted completing approximately 15-20 interviews. The evaluation team reviewed customer characteristics and demographics to diversify the sample and respondents. Specifically, the team considered the following in sampling and recruiting:

- Participation status (primary sampling dimension):** Customers identified as nonparticipants in the customer survey sample that opted in to additional research.
- Non-English status:** Customers self-reporting that a language other than English is spoken in their home.
- Renter status:** Customers self-reporting that they rent their home.

- **Moderate income status:** Customers self-reporting a household size and income level that qualifies as moderate income (80%-100% SMI).
- **Potential participation:** Whether they engaged in Mass Save in the past.

Response

The team successfully recruited 16 survey respondents for a follow-up interview.

Table A-24. Phone Interview Participant Demographics

	Speak Languages Other Than English	Renters	Income*			Total
			Low	Moderate	Higher than Moderate	
Completed Phone Interview	3	8	7	2	7	16

A.6 Ecological Fallacy

In a related concurrent study, DNV GL worked with the Massachusetts PAs to develop a series of census block group participation models. These models explored the relationship between participation in the PAs' residential efficiency programs and key household demographics, notably income, home ownership, and language. DNV GL found that participation rates in PA programs at the block-group level were negatively associated with the proportion of households in a block group that, per the Census' ACS, were moderate income households, renter households, and limited English-speaking households.

When aggregated, correlations such as these can be strong. However, it is possible that the specific individuals of interest—nonparticipants—do not exhibit the same correlations as all households analyzed at block group level, which reflects a mix of participants and nonparticipants. Confirming the validity of these correlations between key demographics and nonparticipation requires that the team collect and analyze individual or household-level data.

Why Test for Ecological Fallacy?

One of the primary objectives of the evaluation team's large-scale residential customer survey was to test the validity of using Census data to characterize nonparticipating customers within a given census area (i.e., does evidence of ecological fallacy exist in DNV GL's concurrent census data-based analysis of nonparticipation?) The team sought to determine whether nonparticipants exhibited similar characteristics to the general population of households within their census tract or were statistically significantly different in some way.

If similar (i.e., the profile of nonparticipants resembles the profile of all customers within an area as reflected in the Census data) then DNV GL's analysis more accurately captures the general relationships of interest between nonparticipants and participants across the identified key customer demographics. This outcome would also suggest that the PAs can reliably use Census data to target areas of their service territory where nonparticipants are more likely to live.

However, finding substantive differences between the demographic profile within the survey than reflected in the Census data would indicate ecological fallacy exists, resulting in the need to lean on primary data collection to understand the important relationship between demographics and participation.

Respondent Characteristics

When considering ecological fallacy, it is important to acknowledge that the key characteristics of interest in this study (non-English speakers, moderate income level, and renters) are not mutually exclusive. Some customers may only have one of these characteristics, while others reflect all three.

Table 1 underscores this point; the table provides the distribution of surveyed customers across all three characteristics, as well as participant type, for the subset of respondents that provide a valid response to all three demographic questions. The table also reinforces the difficulty, despite our team's robust multi-mode, multi-language effort, to reach certain customer segments, especially non-English speakers.

Table 1. Respondent Characteristics Matrix

Language	Income	Rent/Own	Participant Type	Responses
Non-English Speakers	Low income	Rent	Nonparticipant	21
			Participant	8
		Own	Nonparticipant	11
			Participant	8
	Moderate income	Rent	Nonparticipant	2
			Participant	1
	Standard income	Rent	Nonparticipant	2
		Own	Nonparticipant	6
			Participant	4
English Speakers	Low income	Rent	Nonparticipant	117
			Participant	76
		Own	Nonparticipant	80
			Participant	85
	Moderate income	Rent	Nonparticipant	20
			Participant	19
		Own	Nonparticipant	48
			Participant	42
	Standard income	Rent	Nonparticipant	50
			Participant	28
		Own	Nonparticipant	179
			Participant	253

Findings

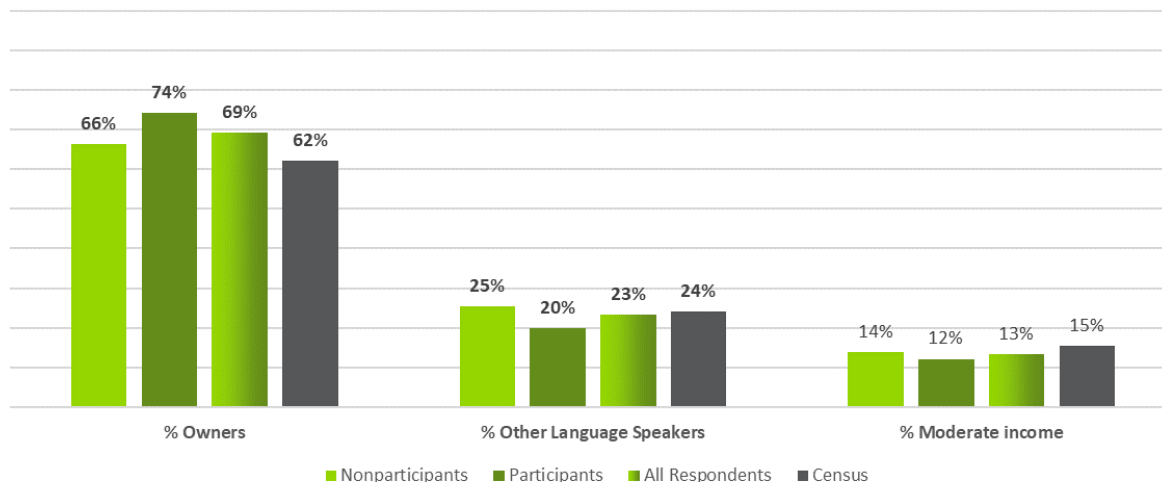
While we know all three characteristics for most of the study's survey respondents, Census data—our point of comparison for assessing ecological fallacy—does not offer the same dimensionality. As a result, our team assessed each of characteristic independently.

The team began by directly comparing the profile of nonparticipating respondents within each sampled tract with the relevant Census data for their tract for the three key demographics of this study: home ownership, language, and income. This allowed the team to compare how similar—or different—the nonparticipants are for a given tract relative to the Census. As expected, some tracts were similar, whereas others displayed differences for one or more of the key demographics.

Next, the team compared the overall characteristics of surveyed nonparticipants across all 39 sampled tracts with the Census data for those same tracts. As evident in Figure A-1, which also shows participants and all survey respondents, the proportion of surveyed nonparticipants that spoke a language other than English or self-reported an income that classified them as moderate income (25% and 14%, respectively) was similar to the proportions reported by the Census (24% and 15%, respectively). However, the figure also shows that respondents to the survey, participants and nonparticipants alike, were more likely to own their home than the Census data indicates. Specifically,

66% of nonparticipants indicated they owned their home, which outpaced the Census average of 62%.

Figure A-1. Comparison of Survey Nonparticipants and Census Data



To assess these disparities from a more statistical perspective, the evaluation team ran the 39 sampled tracts through three paired t-tests—one for each key characteristic. Because these were paired t-tests, the team was testing that the mean difference between the nonparticipants in the survey sample and Census is equal to 0 (i.e., they are the same). If the difference is statistically significantly different from 0, then the Census is not a good representation of the nonparticipants in the survey. For example, if there were 40 nonparticipant respondents in fictional census tract 12345 and 24 of those 40 (60%) self-identified as renters. For that same fictional census tract, suppose the Census indicates that 55% of households in that entire tract are renters. For this specific tract, the difference between the team’s survey (60%) and the Census (55%) is 5%. The team repeated that calculation for all 39 sampled blocks and then ran all 39 differences results through the paired t-test, which tests the credibility of the hypothesis that the mean difference equals 0 (i.e., the survey and the Census indicate the same proportion of renters).

The t-tests confirmed what is visually evident in Figure A-1: a statistically significant difference exists between the demographics of surveyed nonparticipants and the census for home ownership, but not for language or income.¹⁴

Again, it is important to acknowledge that the lack of dimensionality in the Census data prevented our team from considering the interrelationship between these three characteristics when assessing ecological fallacy. For example, when we assess these three characteristics independently, we conclude our sample and the Census are similar for two (other language and moderate income) and different for one (rent/own). However, we may have found something different if we’d been able to assess two, or even all three, of these characteristics at a time. It is possible but not expected that, on average and in isolation, our sample resembles the proportion of other language speakers reported by the Census, but, that our sample skews toward a specific subset of other language speaker – perhaps those that own their home. It is important that readers and future users of this study keep this fact in mind when drawing inferences and making programmatic decisions.

¹⁴ Home ownership: p-value < 0.001, mean diff = 11.7%; percentage that speak a language other than English: p-value = 0.68, mean diff = 0.6%; percentage that self-reported as moderate income: p-value = 0.08, mean diff = -\$6,034.

A.7 Study Strengths and Limitations

A.7.1 Strengths

Multi-mode data collection

As documented throughout the report, the multi-mode survey methodology allowed the team to speak with customers in different groups of interest that exhibit different characteristics. Further, combining the rigorous quantitative with in-depth qualitative research, using multiple methods of qualitative research, significantly enhanced the study and ability to provide results that captured the nuances of customers' responses, oftentimes not possible with quantitative research alone.

Alignment of Respondents with the General Population

Surveyed customers are generally representative of the statewide population based on the ACS. The exception is renters and residents of 10-plus units, which are slightly underrepresented in this study. Stratifications with higher nonparticipation rates also had a higher rate of nondeliverable mail (as well as emails), which based on review, included considerable multifamily units. The inability to reach these customers, potentially driven by mobility and age of customer contact data (from 2017), likely affected the representation of renters.

Spot Check of Participation Status through LEAN

The evaluation team partnered with LEAN for a past-and-post-service check. The team pulled a sample of over 4,000 nonparticipant cases from the study population. LEAN then cross-checked up to 300 of these cases against its records to identify those that had been served by PA-funded programming. Of those 300 cases reviewed, LEAN identified 150 cases that had been served with energy efficiency services; however, none of these had been served with PA funds and/or within the timeframe of the tracking data. This exercise indicated accuracy of the participation flags using the tracking data.

A.7.2 Limitations

Below documents the various limitations that exist in this Residential Nonparticipant Study.

Program Data Limitations

There exists a limitation in the way we are identify program participants through tracking data. First, the customer participation data leveraged for this study from the years 2013 through 2017 only. Customers flagged as nonparticipants may have participated outside of this date range.

To mitigate this issue, the survey captured self-reported participation in their current home. The evaluation team combined the self-reported participation with the tracking data participation flag to develop a longer-term participation flag, combined participation.

Second, tracking data did not include service to Massachusetts households through funding outside of Mass Save (such as where a Community Action Program Agency (CAP agency) might have serviced a home through Department of Energy Weatherization Assistance Program funding and not leverage Mass Save funding). Again, self-reported participation provided an opportunity to capture those homes if the respondent understood the survey's reference to CAP Agency or Low Income Energy Advisory Network (LEAN) services.

Finally, several factors caused challenges in being able to identify unique customers and/or reach those customers. Some of these issues include:

- Multiple people residing at a single address, a scenario confirmed by the in-person survey team;
- Duplicate customers at the same address but with slightly different name spellings (i.e., a middle initial or misspelling of the name with two letters reversed); and
- Different customers at the same address that appear to have no relation; these likely reflect customers that have moved. The tracking data included contact information from 2017, which would have been outdated for and less likely to reach more mobile customers.
- Inaccessibility to multifamily building units due to missing unit information or customer mobility.

Self-Response Bias

Participation in the study was voluntary and therefore, there exists a known self-response bias. Customers who self-selected into participating in the survey are likely much more willing to also participate in programs. The tendency to respond may also be associated with other factors involved in the analysis. Comparisons to non-study populations have shown a bias regarding homeownership among study participants.


Low Response Rate from Non-English Speakers

The evaluation team's findings related to non-English and English as a second language speakers may not be representative of non-English speakers in general due to the low response rates from customers using the translated surveys. While the statewide Census estimate of the variable "speak a language other than English" align with the weighted survey estimate, the team believes the survey may underrepresent this population based on difficulty in reaching them in all efforts, but especially the door-to-door survey. Despite multiple efforts to reach and engage non-English speakers, including translations of the customer survey into the three most prominently spoken non-English languages (Spanish, Portuguese, and Chinese), the team found that customers that responded to the survey and spoke other languages also tended to speak English well. The team saw low representation from Chinese speakers and a hesitation and rejection to participation from the Spanish-speaking population.

Estimates of Awareness of Mass Save / Income Eligible programs

Interpretations of Mass Save awareness rates may be capturing mis-awareness. Some customers knew about programs but did not recognize the Mass Save brand. They may also not equate Mass Save with weatherization assistance services offered through LEAN or CAP agencies and may not recognize or understand the terms "income eligible". To address this customer survey limitation, the evaluation team used careful and specific language throughout its customer-facing qualitative research to investigate respondents' understanding of these terms and attempt to identify the extent to which survey results could be biased due to lack of recognition or understanding of these terms. While respondents interviewed generally recognized, and were aware of, the terms Mass Save and income eligible, the evaluation team recognizes, some bias may still exist in the findings.


APPENDIX B. TASK 2 PRESENTATION: PRELIMINARY FINDINGS FROM ORGANIZATION INTERVIEWS



**MASSACHUSETTS
NONPARTICIPANT STUDY**

KEY TAKEAWAYS FROM TASK 2:
QUALITATIVE RESEARCH WITH PAS AND
COMMUNITY ORGANIZATIONS

AUGUST 7, 2019

NAVIGANT
ILLUME


TASK 2

IN-DEPTH RESEARCH WITH PROGRAM ADMINISTRATORS AND COMMUNITY ORGANIZATIONS

Purpose

- Better understand population and segments of interest through panels or interviews with community organizations
- Identify preliminary barriers to participation to investigate
- Inform research design and language related to Mass Save, energy efficiency, and programs

Approach

- Conduct in-person panel and telephone interviews with: 1) PA implementation and marketing team; 2) partnering Mass Save community organizations, and 3) other organizations serving renters, moderate income, and ethnic and immigrant populations
- Use snowballs sampling, knowledge of MA organizations, and Internet searches to identify sample

Timeline

- From approval of Stage 3 plan to approximately July 2019

About this presentation:

- We are sharing insights from interviews related to understanding participants, barriers to participation in general programs (not just Mass Save), and gathering insights from organizations about how they target their outreach efforts to similar population groups (renters, moderate income, non-English speakers).
- Outreach insights are primarily intended to inform the research design's outreach efforts. Some insights may be useful for general program outreach strategies, however, we are neither suggesting nor recommending specific outreach strategies through this presentation.

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STUDY
PARTICIPANTS

NAVIGANT
ILLUME
 cadeo

INTERVIEW RESPONSE RATES

Through the Task 2 interviews, the evaluation team:

- Contacted 76 individuals at 71 organizations
- Completed 23 interviews

Representation of Targeted Populations

	Serving Non-English Speakers	Serving Renters	Serving Moderate Income	Key Service Locations
Completed interviews	11	13	10	17

Key service locations include Boston, Lowell, Springfield, Western Massachusetts (generally), and Worcester. We also targeted organizations with service areas that include towns and counties that will be sampled for the Task 3: Customer Surveys

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ORGANIZATIONS INTERVIEWED

PAs

- Cape Light Compact
- Eversource
- National Grid
- National Grid New England
- Until Corporation

Mass Save Partners

- ABCD
- Action, Inc
- Community Action Pioneer Valley

Other Community Organizations

- All in Energy
- Boston Climate Action Network*
- Centro Latino
- Chinese Progressive Association*
- Coalition for Social Justice*
- Codman Square Neighborhood Development Corp
- Ener-g-save, Grinspoon Foundation
- Gloucester Housing Authority
- Good Neighbor Energy Fund (Salvation Army)
- GreenRoots Chelsea*
- Housing Support Inc
- Springfield Partners
- Summit ElderCare
- Town of Nantucket Energy Office
- We the Villagers

*Green Justice Coalition Member

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KEY TAKEAWAYS



BARRIERS TO GENERAL PROGRAM PARTICIPATION

- Renters
 - Do not think 'weatherization' applies to them; believe it applies to the landlords
 - Not decision-makers (i.e., landlords or property owners)
 - Fear/reluctance to ask owner for permission
 - High cross-over with immigrant/non-English speaking populations
 - Transience and low-interest in investing in the living space
 - Hiding an over-crowded living space
- Moderate Income
 - Lack a full understanding of the Moderate Income offering (i.e., 90% rebate vs 25%) and that it is a different and separate from the Income Eligible Program.
 - Low prioritization of EE improvements
 - Not enough money to devote to EE improvements
 - Reluctance to obtain loans (i.e., HEAT loan, etc.)
- Non-English Speakers
 - Language barriers throughout the program process
 - Fear of completing paperwork if citizenship status is undocumented
 - Mistrust of government or authority
 - Low persistence – give up quickly if they have trouble reaching the program

The answer to the language barrier has been,

"we have produced our materials in all of these languages", but then if you connect them with an energy advisor that speaks English, it's not going to work for these folks.

The goal is weatherization, not to get an audit, so even if you can get these communities to sign up for an audit it does not go farther than that."

BARRIERS TO GENERAL PROGRAM PARTICIPATION

- Overall
 - Available time to learn about the program, schedule an assessment, etc.
 - Prioritization of energy efficiency services over other needs (elderly, recently incarcerated, in need of medical care, single parents)
 - Skepticism – worried about scams or offers that come from unfamiliar people and/or organizations
 - Stigma of participating and perceived impacts on social status
- Mass Save-Specific Barriers
 - Energy efficiency priorities – saving money followed by health and safety
 - Aware of 'Mass Save' due to heavy marketing, but not necessarily aware of individual programs or program names

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INSIGHTS FROM INTERVIEWEES FOR OUTREACH ENHANCEMENT

Population	Current Efforts We Heard About*	Potential Incremental Outreach Enhancement**
Renters	<ul style="list-style-type: none"> • Western MA orgs have a strong relationship with a network of landlords and property owners • Several PAs and organizations described challenges in reaching renters and landlords, and described using various approaches to do so 	<ul style="list-style-type: none"> • Mass Save partner organizations suggest targeting customers with program options they can access without landlord approval (appliance upgrades, lightbulbs, power strips, showerheads) • As renters tend to think 'weatherization' services are better suited for their landlords, focus 'weatherization' outreach to landlords rather than customers • Landlords living on-site or in-state are more likely to participate than others
Moderate Income	<ul style="list-style-type: none"> • Outreach through general marketing efforts 	<ul style="list-style-type: none"> • N/A • Note: Organizations and customers don't think of themselves as serving or being at a "moderate income" level. For this reason, most interviewees did not describe specific outreach or engagement strategies for this target population.
Non-English	<ul style="list-style-type: none"> • PAs and organizations translate marketing materials, have bilingual staff, and/or partner with organizations that have bilingual staff 	<ul style="list-style-type: none"> • Organizations suggest end to end bilingual support • Use of communication tools non-English speakers are comfortable with (not email; WeChat) • Show-up with someone who speaks the language

*These are efforts identified through this research and may not include all current PA efforts to reach targeted customer populations.

**Primarily, these outreach insights inform the research design. Some insights may be useful for general program outreach strategies.

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INSIGHTS FROM INTERVIEWEES FOR OUTREACH ENHANCEMENT

Population	Current Efforts We Heard About*	Potential Incremental Outreach Enhancement**
Overall	<ul style="list-style-type: none"> • PAs, Mass Save Partner organizations and other organizations noted the strong Mass Save-branded outreach across the commonwealth (direct mailings, buses, billboards, tv and radio ads, etc) • PAs and organizations alike use grassroots marketing (community events, partnering with local organizations) • Co-branded marketing materials with Mass Save Partners organizations are seen as highly effective • PAs and Mass Save Partners emphasize cross-program promotion • PAs have worked to streamline paperwork processes and reduce interactions with home visitors (contractors, auditors, etc.) to customers' homes 	<ul style="list-style-type: none"> • Organizations and PAs suggest a variety of outreach methods is needed to reach different customer groups (phone call, text, email, mailers, program website, in-person, trusted social media pages, outreach during non-business hours) • Community connectors are key to establishing trust <ul style="list-style-type: none"> • Through grassroots marketing, partner with local organizations (not just CAPs) to conduct outreach at community events, local religious institutions, etc. • Organizations note that the communities they serve respond well to seeing past program participants (videos, images, case studies). They help establish legitimacy. • Some organizations suggest co-branding opportunities beyond what's already being done (i.e., beyond current Mass Save Partners, municipalities, etc.) • Language <ul style="list-style-type: none"> • Use terms like: 'Mass Save', money saving language (lower bills), comfort language (stay cool, stay warm), 'home energy assessment/audit' • Differentiate programs by emphasizing what customers will gain/value from the program over the program names • Don't use: industry jargon (weatherization)

*These are efforts identified through this research and may not include all current PA efforts to reach targeted customer populations.

**Primarily, these outreach insights inform the research design. Some insights may be useful for general program outreach strategies.

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IMPLICATIONS FOR OUTREACH

- Regional Highlights
 - Gateway cities of interest: Fall River, Fitchburg, Lowell, Western Mass (Springfield, Pittsfield, Holyoke), Worcester
 - First generation immigrants
 - Language barriers
 - Tend to have more pressing concerns than EE
 - May not trust government or statue run-programs due to personal experiences with government agencies in their countries of origin
 - The islands
 - Nantucket
 - Large wealthy population
 - Money isn't an object, so saving money is not a driver of participation to them
 - Homeowners tend to have state of the art homes and appliances; they typically don't need or want Mass Save offerings
 - Most concerned with comfort and convenience
 - Small income-eligible and non-English population
 - Saturation of program offering after several successful years of 'energy weeks' outreach
 - Gloucester
 - Tight-knit community that prides itself on 'never leaving the island'
 - Follow the Mayor's Facebook page

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IMPLICATIONS FOR OUTREACH

- Regional Highlights (continued)
 - Western Mass including Springfield
 - High customer interest in programs reduces need for intensive outreach
 - Stronger relationships with landlords reduces barriers to serving renters
 - Recent scams in the area pretending to be from utility companies
 - No public transportation for geographically widespread residents makes it difficult to get to agencies to apply to participate
 - Worcester
 - Also had recent scams in the area pretending to be from utility companies

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APPENDIX C. CUSTOMER SURVEY CROSSTABULATIONS

C.1 Tables by Participation per Tracking Data (from 2013 – 2017)

C.1.1 Demographics

Table 2. Housing and Occupancy

		Tracking Data Participation Flag					
		Nonparticipant		Participant		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Residence status of location	Primary residence	95.0%	928	94.1%	555	94.6%	1483
	Secondary residence	3.1%	30	1.7%	10	2.5%	40
	Full-time rental property that you rent out to others	1.5%	14	3.8%	23	2.4%	37
	Part-time or vacation property that you rent out to others	0.2%	2	0.2%	1	0.2%	3
	Other, please specify:	0.3%	3	0.3%	2	0.3%	4
	Total	100.0%	977	100.0%	590	100.0%	1567
Own, rent, or rent this location out to others	Rent & Occupy	35.4%	349	25.0%	148	31.5%	497
	Own & Occupy	62.9%	619	70.5%	417	65.7%	1036
	Rental property (do not occupy)	1.7%	17	4.5%	27	2.8%	44
	Total	100.0%	985	100.0%	591	100.0%	1576
Which best describes the building at this address?	A single-family house detached from any other house	55.7%	547	57.2%	339	56.2%	886
	A row home - a single-family house attached to one or more single-family house(s)	3.1%	31	3.4%	20	3.2%	51
	A building with 2 units	11.4%	112	8.7%	51	10.4%	163
	A building with 3 or 4 units	14.4%	141	8.3%	49	12.1%	190
	A building with 5 to 9 units	7.1%	69	3.4%	20	5.7%	89
	A building with 10 to 19 units	2.6%	26	2.6%	15	2.6%	41
	A building with 20 to 49 units	1.0%	10	3.8%	22	2.0%	32
	A building with 50 or more units	1.5%	15	10.9%	65	5.0%	79
	A mobile, manufactured, or trailer home	0.0%	0	0.0%	0	0.0%	0

		Tracking Data Participation Flag					
		Nonparticipant		Participant		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
	Other, please specify:	3.3%	32	1.7%	10	2.7%	42
	Total	100.0%	982	100.0%	592	100.0%	1574
To the best of your knowledge, when was this building first built?	2010 or later	1.2%	10	4.4%	23	2.5%	33
	2000 to 2009	5.1%	43	7.9%	41	6.2%	84
	1990 to 1999	6.4%	53	6.4%	33	6.4%	87
	1980 to 1989	6.9%	57	8.5%	44	7.5%	102
	1970 to 1979	10.2%	84	8.5%	44	9.5%	128
	1960 to 1969	9.8%	81	11.4%	59	10.4%	141
	1950 to 1959	11.7%	97	11.4%	59	11.5%	156
	1940 to 1949	6.5%	54	6.2%	33	6.4%	87
	1930 to 1939	5.2%	43	5.2%	27	5.2%	70
	1900 to 1930	25.5%	211	22.2%	116	24.2%	327
	1800 to 1899	10.1%	84	6.8%	36	8.9%	120
	Before 1800	0.5%	4	0.4%	2	0.5%	6
	Other, please specify:	0.8%	7	0.8%	4	0.8%	11
	Total	100.0%	828	100.0%	523	100.0%	1351
Moved in the last five years	Not moved	84.6%	839	81.2%	488	83.3%	1327
	Moved	15.4%	153	18.8%	113	16.7%	266
	Total	100.0%	992	100.0%	601	100.0%	1593
At least one child in household	No Child(ren) at home	71.4%	708	71.8%	432	71.5%	1140
	Child(ren) at home	28.6%	284	28.2%	169	28.5%	453
	Total	100.0%	992	100.0%	601	100.0%	1593
Single parent household	Not single-parent household	96.3%	942	93.6%	552	95.3%	1494
	Single parent household	3.7%	36	6.4%	38	4.7%	74
	Total	100.0%	978	100.0%	590	100.0%	1569
At least one member of household fully retired	Not retired	67.0%	657	67.0%	395	67.0%	1052
	Retired	33.0%	324	33.0%	195	33.0%	519
	Total	100.0%	981	100.0%	590	100.0%	1571
At least one household member has difficulty functioning due to a physical, mental, or emotional condition	Not disabled	87.0%	863	84.4%	507	86.0%	1370
	Disabled	13.0%	129	15.6%	94	14.0%	223
	Total	100.0%	992	100.0%	601	100.0%	1593

Table 3. Mean Participation Status

Tracking Data Participation Flag	Mean	N	Std. Deviation
Nonparticipant	2.60	973	1.522
Participant	2.49	587	1.264
Total	2.56	1560	1.431

Note: Number in household: Total household members including yourself

Table 4. Income and College

		Tracking Data Participation Flag					
		Nonparticipant		Participant		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Income category	Low income	39.1%	362	34.0%	193	37.2%	555
	Moderate income	14.0%	129	12.1%	69	13.3%	198
	Higher than moderate income	46.9%	434	53.9%	306	49.5%	740
	Total	100.0%	925	100.0%	568	100.0%	1493
Level of respondent education	Less than high school	6.0%	57	5.2%	30	5.7%	87
	High school graduate or equivalent (e.g., GED)	23.2%	219	14.7%	85	20.0%	304
	Attended some college, but didn't get a degree	16.1%	152	14.5%	84	15.5%	237
	Associate degree	7.5%	71	11.5%	67	9.0%	138
	Bachelor's degree	24.8%	235	26.2%	152	25.3%	387
	Master's degree	14.5%	137	20.9%	121	16.9%	258
	Professional degree	3.9%	37	2.4%	14	3.3%	50
	Doctorate degree	3.8%	36	4.3%	25	4.0%	61
	Other	0.2%	2	0.4%	3	0.3%	4
	Total	100.0%	946	100.0%	580	100.0%	1526
Respondent is a college graduate	No college	45.5%	430	34.8%	202	41.4%	632
	College	54.5%	515	65.2%	378	58.6%	893
	Total	100.0%	946	100.0%	580	100.0%	1526

Table 5. Languages spoken in home

		Tracking Data Participation Flag					
		Nonparticipant		Participant		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Speak languages other than English at home	Yes	25.4%	252	19.9%	119	23.3%	371
	No	74.6%	740	80.1%	482	76.7%	1222
	Total	100.0%	992	100.0%	601	100.0%	1593
Languages spoken at home besides English	Only Spanish	28.7%	72	38.5%	46	31.8%	118
	Only Portuguese	23.5%	59	19.0%	23	22.0%	82
	Only Chinese	2.8%	7	3.9%	5	3.2%	12
	Only French	5.4%	14	1.6%	2	4.2%	16
	Only Vietnamese	2.5%	6	3.0%	4	2.6%	10
	Only Russian	2.6%	7	1.7%	2	2.3%	9
	Only Arabic	0.4%	1	0.0%	0	0.3%	1
	Only Italian	4.3%	11	6.7%	8	5.1%	19
	Only Other	13.6%	34	16.6%	20	14.5%	54
	Spanish and Portuguese	3.4%	9	1.6%	2	2.8%	10
	Spanish and French	0.6%	2	0.7%	1	0.6%	2
	Two languages	10.4%	26	6.7%	8	9.2%	34
	Three languages	0.2%	1	0.0%	0	0.1%	1
	Four languages	1.6%	4	0.0%	0	1.1%	4
	Total	100.0%	252	100.0%	119	100.0%	371

		Tracking Data Participation Flag					
		Nonparticipant		Participant		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
How well do you speak English?	Very well	62.7%	198	68.8%	100	64.6%	298
	Well	18.5%	59	14.2%	21	17.2%	79
	Not well	12.8%	41	11.4%	17	12.4%	57
	Not at all	5.9%	19	5.7%	8	5.9%	27
	Total	100.0%	316	100.0%	146	100.0%	461
Of those who speak another language, how well speak English	Speak English well or very well	81.2%	257	82.9%	121	81.8%	377
	Speak English not at all or not well	18.8%	59	17.1%	25	18.2%	84
	Total	100.0%	316	100.0%	146	100.0%	461

C.1.2 Awareness, Participation, and Barriers to Participation

Table 6. Heard of Mass Save and/or Awareness of Energy Services Offered through CAP Agency / LEAN

		Tracking Data Participation Flag					
		Nonparticipant		Participant		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Before today, have you heard of Mass Save?	Yes	69.6%	683	82.4%	489	74.4%	1172
	No	30.4%	299	17.6%	105	25.6%	403
	Total	100.0%	982	100.0%	594	100.0%	1575
Before today, were you aware that energy saving programs and services are available to income qualifying households through CAP agencies or LEAN?	Yes	27.4%	142	30.3%	107	28.6%	249
	No	72.6%	376	69.7%	247	71.4%	622
	Total	100.0%	517	100.0%	354	100.0%	871
Respondent indicated aware of Mass Save and/or CAP Agency / LEAN services	Aware	72.3%	710	84.7%	503	77.0%	1213
	Not aware	27.7%	272	15.3%	91	23.0%	362
	Total	100.0%	982	100.0%	594	100.0%	1575

Table 7. Of Households Categorized Low Income, Heard of Mass Save and/or Awareness of Energy Services Offered through CAP Agency / LEAN

		Tracking Data Participation Flag					
		Nonparticipant		Participant		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Before today, have you heard of Mass Save?	Yes	54.9%	198	69.1%	132	59.9%	330
	No	45.1%	162	30.9%	59	40.1%	221
	Total	100.0%	360	100.0%	191	100.0%	552
Before today, were you aware that energy saving programs and services are available to income qualifying households through CAP agencies or LEAN?	Yes	22.1%	40	35.0%	37	26.8%	77
	No	77.9%	141	65.0%	69	73.2%	210
	Total	100.0%	181	100.0%	106	100.0%	287
Respondent indicated aware of Mass Save and/or CAP Agency / LEAN services	Aware	59.1%	213	75.4%	144	64.7%	357
	Not aware	40.9%	147	24.6%	47	35.3%	195
	Total	100.0%	360	100.0%	191	100.0%	552

Table 8. Of Household Categorized Moderate Income, Heard of Mass Save and/or Awareness of Energy Services Offered through CAP Agency / LEAN

		Tracking Data Participation Flag					
		Nonparticipant		Participant		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Before today, have you heard of Mass Save?	Yes	73.3%	95	87.8%	60	78.3%	155
	No	26.7%	35	12.2%	8	21.7%	43
	Total	100.0%	129	100.0%	69	100.0%	198
Before today, were you aware that energy saving programs and services are available to income qualifying households through CAP agencies or LEAN?	Yes	24.5%	20	23.9%	11	24.3%	30
	No	75.5%	60	76.1%	34	75.7%	94
	Total	100.0%	80	100.0%	44	100.0%	124
Respondent indicated aware of Mass Save and/or CAP Agency / LEAN services	Aware	75.0%	97	88.1%	61	79.5%	158
	Not aware	25.0%	32	11.9%	8	20.5%	41
	Total	100.0%	129	100.0%	69	100.0%	198

Table 9. Awareness of Specific Mass Save Offerings (web/phone only)

		Tracking Data Participation Flag					
		Nonparticipant		Participant		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Which of the following programs are you aware of?	Home Energy Assessment/Audit	84.7%	307	91.2%	268	87.6%	575
	Appliance Rebates	50.8%	184	68.8%	202	58.9%	386
	Appliance Recycling	30.7%	111	29.7%	87	30.3%	198
	Lighting Discounts	48.0%	174	52.5%	154	50.0%	328
	Heating or Water Heating Rebates	40.5%	147	53.6%	157	46.4%	304
	Cooling Rebates	30.4%	110	37.5%	110	33.6%	220
	Insulation / Weatherization Incentives	57.3%	207	59.5%	175	58.2%	382
	New Construction Incentives	11.6%	42	5.4%	16	8.8%	58
	Renovation or Home Addition Incentives	15.0%	54	9.6%	28	12.6%	83
	HEAT Loan Financing	20.6%	75	26.3%	77	23.2%	152
	Other	4.0%	14	2.0%	6	3.1%	20
	None of these offerings	6.0%	22	2.4%	7	4.4%	29
	Total	100.0%	362	100.0%	294	100.0%	656

Table 10. Source of Mass Save Awareness (web/phone survey only)

		Tracking Data Participation Flag					
		Nonparticipant		Participant		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
How did you learn about the offerings?	I got something in the mail	54.8%	123	52.7%	86	53.9%	209
	Through an energy bill insert	29.6%	66	27.2%	44	28.6%	111
	I got an email	10.7%	24	8.3%	14	9.7%	38
	Through talking to a contractor	5.2%	12	10.1%	16	7.2%	28
	Mass Save or other websites, including the LEAN multifamily program website	14.6%	33	21.3%	35	17.4%	68
	Through a phone call	9.9%	22	3.6%	6	7.3%	28
	Through a Community Action Program agency	7.9%	18	7.5%	12	7.7%	30
	Through another community or neighborhood organization	6.7%	15	7.9%	13	7.2%	28

		Tracking Data Participation Flag					
		Nonparticipant		Participant		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
	Through a newspaper or magazine ad	5.9%	13	4.9%	8	5.5%	21
	Through a radio ad	3.7%	8	7.9%	13	5.5%	21
	Saw on billboards on highways, side streets, trains, or buses	7.9%	18	3.8%	6	6.1%	24
	Social media (Twitter, Facebook, etc.)	6.6%	15	6.5%	11	6.5%	25
	From a friend or family member	32.1%	72	29.1%	47	30.8%	119
	Through a community event	3.3%	7	3.4%	6	3.4%	13
	Other	7.2%	16	7.3%	12	7.2%	28
	Total	100.0%	224	100.0%	163	100.0%	387

Table 11. Self-reported Participation in Mass Save in Current Home

		Tracking Data Participation Flag					
		Nonparticipant		Participant		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Self-reported participation in current home	Did not participate in current home	75.2%	669	45.4%	234	64.3%	903
	Participated in current home	24.8%	221	54.6%	282	35.7%	502
	Total	100.0%	889	100.0%	516	100.0%	1405
Length of time since participation	Within two years	55.4%	124	36.6%	105	44.8%	228
	2-5 years ago	11.1%	25	43.1%	124	29.1%	148
	6-10 years ago	16.5%	37	15.3%	44	15.8%	81
	More than 10 years ago	16.2%	36	3.8%	11	9.2%	47
	I don't know	0.8%	2	1.3%	4	1.1%	5
	Total	100.0%	223	100.0%	287	100.0%	510

Table 12. Programs Participated in Current Home (web/phone only)

		Tracking Data Participation Flag					
		Nonparticipant		Participant		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Which of the following offerings did you participated in at current home (web/phone only)?	Home Energy Assessment/Audit	56.9%	64	76.3%	105	67.6%	168
	Appliance Rebates	10.7%	12	25.8%	35	19.0%	47
	Appliance Recycling	8.9%	10	14.7%	20	12.1%	30
	Lighting Discounts	27.2%	30	29.0%	40	28.2%	70
	Heating or Water Heating Rebates	14.5%	16	15.4%	21	15.0%	37
	Cooling Rebates	7.2%	8	8.2%	11	7.8%	19
	Insulation / Weatherization Incentives	32.6%	36	40.6%	56	37.0%	92
	New Construction Incentives	1.2%	1	0.7%	1	0.9%	2
	Renovation or Home Addition Incentives	2.3%	3	1.2%	2	1.7%	4
	HEAT Loan Financing	5.4%	6	15.6%	21	11.0%	27
	Free equipment / services through CAP Agency or LEAN	10.2%	11	12.0%	16	11.2%	28
	Other	9.5%	11	3.3%	5	6.1%	15
	None of these offerings	11.5%	13	5.4%	7	8.2%	20
	Total	100.0%	112	100.0%	137	100.0%	249

Table 13. Self-reported Other Participation in Mass Save (web/phone only)

		Tracking Data Participation Flag					
		Nonparticipant		Participant		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Self-reported participation status: I participated in a previous home I owned or rented	Checked	16.1%	45	12.6%	27	14.6%	73
	Not Checked	83.9%	237	87.4%	188	85.4%	425
	Total	100.0%	282	100.0%	215	100.0%	497
Self-reported participation status: I started the application process in my current or previous home but didn't complete it	Checked	5.1%	13	1.5%	3	3.5%	15
	Not Checked	94.9%	235	98.5%	187	96.5%	422
	Total	100.0%	248	100.0%	190	100.0%	438
Self-reported participation status: I looked into participating in my current or previous home but never signed up	Checked	9.7%	24	9.3%	18	9.5%	42
	Not Checked	90.3%	223	90.7%	171	90.5%	394
	Total	100.0%	247	100.0%	189	100.0%	436

		Tracking Data Participation Flag					
		Nonparticipant		Participant		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Self-reported participation status: I never participated or looked into participating	Checked	44.4%	106	23.5%	44	35.2%	151
	Not Checked	55.6%	133	76.5%	144	64.8%	277
	Total	100.0%	240	100.0%	188	100.0%	428

Table 14. Why Did Not Look into or Complete Participation (web/phone only)

		Tracking Data Participation Flag					
		Nonparticipant		Participant		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Why have not looked into participating at current address (web/phone only)	It was too time consuming	2.6%	0	0.0%	0	1.9%	0
	Amount of incentive not worth the effort	5.9%	1	21.7%	1	10.4%	2
	Confused or needed more information about the process	17.3%	2	18.2%	1	17.5%	3
	Too difficult to schedule an assessment	17.3%	2	0.0%	0	12.4%	2
	Was not comfortable with an energy assessor coming into home	27.3%	3	0.0%	0	19.6%	3
	Did not want to share information required through the process	8.6%	1	0.0%	0	6.2%	1
	Did not appear I was eligible	42.6%	5	19.3%	1	36.1%	6
	Could not get or did not want to try to get landlord's cooperation (rent only)	63.5%	8	0.0%	0	45.6%	8
	Structural or other issues with home that needed to be fixed first	0.0%	0	12.9%	1	3.6%	1
	Other	12.0%	1	49.6%	2	22.6%	4
	Total	100.0%	12	100.0%	5	100.0%	17
Why started but did not complete the process of applying (web/phone only)	It was too time consuming	4.8%	2	20.7%	5	10.9%	6
	Amount of incentive not worth the effort	3.8%	1	10.3%	2	6.3%	4
	Could not afford the project/purchase	16.2%	6	12.4%	3	14.8%	8
	Confused or needed more information about the process	19.1%	7	23.0%	5	20.6%	12
	Too difficult to schedule an assessment	0.2%	0	12.9%	3	5.1%	3

		Tracking Data Participation Flag					
		Nonparticipant		Participant		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
	Was not comfortable with an energy assessor coming into home	18.2%	6	4.9%	1	13.1%	7
	Did not want to share information required through the process	3.8%	1	3.9%	1	3.8%	2
	Did not appear I was eligible	18.9%	7	19.2%	4	19.0%	11
	Could not get or did not want to try to get landlord's cooperation (rent only)	27.3%	10	8.6%	2	20.1%	11
	Structural or other issues with home that needed to be fixed first	9.2%	3	5.9%	1	7.9%	5
	Other	19.9%	7	28.0%	6	23.1%	13
	Total	100.0%	35	100.0%	22	100.0%	57
Main reasons have not participated in any Mass Save or Income Eligible Program offers (web/phone only)	Could not afford the project/purchase	7.1%	8	7.0%	3	7.0%	11
	House is already energy efficient	22.7%	25	9.8%	4	19.0%	30
	House needs other maintenance first	8.2%	9	1.7%	1	6.4%	10
	Did not have the time	18.1%	20	12.5%	6	16.5%	26
	Did not want to deal with the hassle	22.0%	25	25.6%	11	23.0%	36
	Seemed too complicated	13.3%	15	14.3%	6	13.6%	21
	Do not need the money	7.3%	8	4.5%	2	6.5%	10
	Do not know how to participate	15.2%	17	21.7%	10	17.0%	27
	Do not know where to get information	5.6%	6	11.2%	5	7.2%	11
	Did not know about the offerings	27.3%	31	33.1%	15	28.9%	45
	Do not own the building / could not get landlord to do it	14.5%	16	34.3%	15	20.1%	31
	Did not believe the advertisement / savings claims	2.6%	3	5.5%	2	3.4%	5
	Did not have financing options	9.6%	11	2.1%	1	7.5%	12
	Other	5.9%	7	4.9%	2	5.6%	9
	Total	100.0%	112	100.0%	44	100.0%	156

Table 15. Likelihood to Participate in Next Five Years (web/phone only)

		Tracking Data Participation Flag					
		Nonparticipant		Participant		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Likelihood to participate in the next five years	Very unlikely	10.6%	47	10.4%	31	10.5%	78
	Somewhat unlikely	5.8%	26	6.8%	20	6.2%	46
	Neither likely nor unlikely	16.1%	71	17.2%	51	16.5%	122
	Somewhat likely	38.3%	169	32.1%	96	35.8%	265
	Very likely	29.2%	129	33.4%	100	30.9%	229
	Total	100.0%	442	100.0%	298	100.0%	740

C.1.3 Expenses and Assistance, Trust, and Concerns and Attitudes

Table 16. Expenses and Renter Responsibility for Paying Energy Bills (web/phone only)

		Tracking Data Participation Flag					
		Nonparticipant		Participant		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Feeling about ability to meet expenses	I am easily able to pay for all expenses	32.2%	158	37.0%	128	34.2%	286
	It is tight, but I can pay for all expenses	42.3%	207	45.4%	157	43.6%	364
	Each month, I'm not sure if I will be able to pay for all expenses	12.8%	63	10.7%	37	11.9%	100
	I am not able to pay for all expenses some months	7.7%	38	4.2%	14	6.2%	52
	I am not able to pay for all expenses most or all months	5.0%	25	2.8%	10	4.1%	34
	Total	100.0%	491	100.0%	346	100.0%	837
Renter responsible for paying electric bill?	Yes	95.6%	181	96.3%	93	95.8%	274
	No	3.7%	7	3.7%	4	3.7%	11
	Don't know	0.7%	1	0.0%	0	0.5%	1
	Total	100.0%	189	100.0%	96	100.0%	286
Renter responsible for paying natural gas bill?	Yes	77.1%	146	56.3%	54	70.1%	200
	No	9.6%	18	14.1%	14	11.1%	32
	Don't know	3.7%	7	1.6%	2	3.0%	9
	Do not have	9.6%	18	28.0%	27	15.9%	45
	Total	100.0%	189	100.0%	96	100.0%	286

**Table 17. Indicate Participated an Assistance Program
(SSI, Government Assistance, Assistance for Energy Bills, Food Stamps, MassHealth, and/or
National School Food Program)**

		Tracking Data Participation Flag					
		Nonparticipant		Participant		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Participated in at least one assistance program	Did not participate in social program	68.9%	684	70.0%	421	69.3%	1104
	Participated in social program	31.1%	308	30.0%	180	30.7%	489
	Total	100.0%	992	100.0%	601	100.0%	1593

**Table 18. Ranked in Top Three of Most Trustworthy to Get Information Energy Saving Offerings
(web/phone only)**

		Tracking Data Participation Flag					
		Nonparticipant		Participant		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Indicated in top three of most trustworthy source to get information about energy savings	Contractor	36.3%	177	38.9%	133	37.4%	311
	Local government	44.0%	215	40.2%	138	42.4%	353
	State government	41.2%	202	35.5%	122	38.9%	323
	Local utility	49.5%	242	51.8%	177	50.4%	419
	Neighbor, relative, or friend	58.2%	284	59.2%	203	58.6%	487
	Place of worship	15.1%	74	11.2%	38	13.5%	112
	Community Action Program agency	32.7%	160	42.2%	144	36.6%	304
	Other community or neighborhood organization	18.7%	91	17.0%	58	18.0%	150
	Other source (specified)	9.1%	45	7.6%	26	8.5%	71
	None	1.4%	7	2.6%	9	1.9%	16
	Total	100.0%	489	100.0%	342	100.0%	831

Table 19. Concerns and Attitudes About Energy Costs and Use (web/phone only)

		Tracking Data Participation Flag					
		Nonparticipant		Participant		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
I worry whether there is enough money to pay my energy bill	Do not agree	26.8%	133	16.8%	58	22.7%	191
	2	6.7%	33	14.0%	48	9.7%	81
	3	15.7%	78	19.8%	68	17.4%	146
	4	16.5%	82	15.3%	53	16.0%	135
	Completely agree	34.4%	171	34.1%	118	34.3%	289
	Total	100.0%	496	100.0%	346	100.0%	842

		Tracking Data Participation Flag					
		Nonparticipant		Participant		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
I worry that the cost of energy to run my home will increase	Do not agree	40.0%	198	46.3%	160	42.6%	358
	2	19.8%	98	20.9%	72	20.2%	170
	3	16.3%	80	16.5%	57	16.4%	138
	4	7.0%	34	7.0%	24	7.0%	59
	Completely agree	17.0%	84	9.3%	32	13.8%	116
	Total	100.0%	494	100.0%	346	100.0%	840
I feel guilty if I use too much energy	Do not agree	23.1%	114	25.6%	88	24.1%	203
	2	22.7%	112	23.1%	80	22.8%	192
	3	28.0%	139	26.1%	90	27.3%	229
	4	8.7%	43	10.0%	34	9.2%	77
	Completely agree	17.5%	87	15.1%	52	16.5%	139
	Total	100.0%	495	100.0%	345	100.0%	840
I tend to take the lead in my household to keep bills down	Do not agree	48.7%	241	56.1%	193	51.7%	434
	2	16.3%	80	19.7%	68	17.7%	148
	3	16.4%	81	13.1%	45	15.0%	126
	4	4.3%	21	2.2%	8	3.4%	29
	Completely agree	14.4%	71	9.0%	31	12.1%	102
	Total	100.0%	494	100.0%	345	100.0%	839
If my utility bill goes up, I feel like I must do something to reduce it	Do not agree	36.9%	183	40.1%	139	38.2%	322
	2	17.8%	88	27.7%	96	21.9%	184
	3	19.6%	97	18.5%	64	19.2%	161
	4	9.8%	49	5.6%	19	8.1%	68
	Completely agree	15.8%	78	8.1%	28	12.6%	106
	Total	100.0%	495	100.0%	346	100.0%	841
I often pay more for products that are environmentally friendly	Do not agree	17.7%	87	21.1%	73	19.1%	160
	2	22.5%	111	22.4%	78	22.5%	189
	3	33.5%	165	29.0%	100	31.6%	266
	4	11.6%	57	12.1%	42	11.8%	99
	Completely agree	14.8%	73	15.4%	53	15.0%	126
	Total	100.0%	494	100.0%	346	100.0%	840
I intend to conserve gas or electricity consumption in my home this winter	Do not agree	43.7%	217	47.0%	162	45.1%	379
	2	19.7%	98	22.7%	78	21.0%	176
	3	16.4%	81	13.7%	47	15.3%	128
	4	6.7%	33	6.4%	22	6.5%	55
	Completely agree	13.6%	67	10.2%	35	12.2%	102
	Total	100.0%	496	100.0%	345	100.0%	840
I know what actions to take to reduce my energy use	Do not agree	24.8%	122	27.6%	95	25.9%	217
	2	25.4%	125	29.4%	101	27.0%	226
	3	23.8%	117	25.9%	89	24.7%	207
	4	13.9%	69	11.4%	39	12.9%	108
	Completely agree	12.1%	60	5.8%	20	9.5%	80
	Total	100.0%	493	100.0%	345	100.0%	838

		Tracking Data Participation Flag					
		Nonparticipant		Participant		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Paying my energy bill is priority, before things like food or clothing	Do not agree	20.2%	99	17.0%	58	18.9%	157
	2	16.0%	79	18.8%	64	17.2%	142
	3	31.7%	155	30.3%	103	31.1%	258
	4	12.0%	59	14.7%	50	13.1%	109
	Completely agree	20.1%	99	19.2%	65	19.7%	164
	Total	100.0%	491	100.0%	339	100.0%	830

Table 20. Mean Concerns and Attitudes About Energy Costs and Use (web/phone only)

Tracking Data Participation Flag		I worry whether there is enough money to pay my energy bill	I worry that the cost of energy to run my home will increase	I feel guilty if I use too much energy	I tend to take the lead in my household to keep bills down	If my utility bill goes up, I feel like I must do something to reduce it	I often pay more for products that are environmentally friendly	I intend to conserve gas or electricity consumption in my home this winter	I know what actions to take to reduce my energy use	Paying my energy bill is priority, before things like food or clothing
Nonparticipant	Mean	3.25	2.41	2.75	2.19	2.50	2.83	2.27	2.63	2.96
	N	496	494	495	494	495	494	496	493	491
	Std. Deviation	1.619	1.485	1.370	1.443	1.462	1.271	1.421	1.318	1.377
Participant	Mean	3.36	2.12	2.66	1.88	2.14	2.78	2.10	2.38	3.00
	N	346	346	345	345	346	346	345	345	339
	Std. Deviation	1.486	1.317	1.360	1.256	1.234	1.327	1.333	1.169	1.337
Total	Mean	3.30	2.29	2.71	2.07	2.35	2.81	2.20	2.53	2.98
	N	842	840	840	839	841	840	840	838	830
	Std. Deviation	1.566	1.425	1.366	1.377	1.383	1.294	1.387	1.264	1.360

C.2 Tables by Stratification

C.2.1 Demographics

Table 21. Housing and Occupancy

		Stratification by Participation Rate											
		Strata 1, Less than 20.7%		Strata 2, 20.7-25.8%		Strata 3, 25.9-32.3%		Strata 4, 32.4-38.8%		Strata 5, More than 38.8%		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Residence status of location	Primary residence	90.7%	334	83.4%	151	97.8%	397	98.7%	448	97.1%	153	94.6%	1483
	Secondary residence	2.4%	9	12.2%	22	0.4%	2	1.0%	5	1.6%	3	2.5%	40
	Full-time rental property that you rent out to others	5.8%	21	2.7%	5	1.8%	7	0.3%	2	1.2%	2	2.4%	37
	Part-time or vacation property that you rent out to others	0.0%	0	1.8%	3	0.0%	0	0.0%	0	0.0%	0	0.2%	3
	Other, please specify:	1.2%	4	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.3%	4
	Total	100.0%	369	100.0%	181	100.0%	406	100.0%	454	100.0%	157	100.0%	1567
Own, rent, or rent this location out to others	Rent & Occupy	58.9%	220	55.2%	100	24.6%	101	14.9%	68	4.9%	8	31.5%	497
	Own & Occupy	35.4%	132	40.3%	73	72.8%	299	84.7%	385	93.8%	147	65.7%	1036
	Rental property (do not occupy)	5.7%	21	4.4%	8	2.6%	11	0.3%	2	1.2%	2	2.8%	44
	Total	100.0%	374	100.0%	181	100.0%	410	100.0%	454	100.0%	157	100.0%	1576
Which best describes the building at this address?	A single-family house detached from any other house	13.0%	49	39.9%	73	64.6%	265	80.2%	363	86.7%	136	56.2%	886

		Stratification by Participation Rate											
		Strata 1, Less than 20.7%		Strata 2, 20.7-25.8%		Strata 3, 25.9-32.3%		Strata 4, 32.4-38.8%		Strata 5, More than 38.8%		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
	A row home - a single-family house attached to one or more single-family house(s)	5.0%	19	7.6%	14	1.2%	5	2.2%	10	2.3%	4	3.2%	51
	A building with 2 units	11.2%	42	12.5%	23	11.9%	49	11.1%	50	0.0%	0	10.4%	163
	A building with 3 or 4 units	31.4%	117	12.6%	23	9.5%	39	2.6%	12	0.0%	0	12.1%	190
	A building with 5 to 9 units	15.0%	56	7.7%	14	3.7%	15	0.8%	3	0.5%	1	5.7%	89
	A building with 10 to 19 units	4.3%	16	6.4%	12	2.4%	10	0.3%	2	1.6%	2	2.6%	41
	A building with 20 to 49 units	0.8%	3	2.6%	5	2.6%	11	1.5%	7	4.5%	7	2.0%	32
	A building with 50 or more units	15.4%	57	5.1%	9	0.8%	3	0.5%	2	4.4%	7	5.0%	79
	A mobile, manufactured, or trailer home	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
	Other, please specify:	3.9%	15	5.6%	10	3.4%	14	0.8%	4	0.0%	0	2.7%	42
	Total	100.0%	372	100.0%	182	100.0%	410	100.0%	453	100.0%	157	100.0%	1574
To the best of your knowledge, when was this building first built?	2010 or later	3.2%	8	3.3%	4	0.9%	3	3.5%	15	1.4%	2	2.5%	33
	2000 to 2009	3.1%	8	13.2%	17	2.8%	10	7.2%	31	11.1%	17	6.2%	84
	1990 to 1999	1.4%	3	15.7%	20	5.1%	19	8.1%	35	5.5%	8	6.4%	87
	1980 to 1989	8.9%	23	7.1%	9	6.0%	22	8.3%	36	7.2%	11	7.5%	102
	1970 to 1979	3.3%	9	7.0%	9	8.4%	31	13.3%	58	14.1%	22	9.5%	128
	1960 to 1969	3.8%	10	6.9%	9	6.1%	23	13.6%	59	26.0%	40	10.4%	141
	1950 to 1959	7.1%	18	12.4%	16	9.2%	35	15.0%	65	14.1%	22	11.5%	156
	1940 to 1949	5.3%	14	4.6%	6	9.6%	36	6.2%	27	2.7%	4	6.4%	87
	1930 to 1939	3.3%	8	3.9%	5	8.9%	33	3.4%	15	5.5%	8	5.2%	70
	1900 to 1930	29.8%	77	23.5%	31	34.7%	130	18.2%	79	6.6%	10	24.2%	327

		Stratification by Participation Rate											
		Strata 1, Less than 20.7%		Strata 2, 20.7-25.8%		Strata 3, 25.9-32.3%		Strata 4, 32.4-38.8%		Strata 5, More than 38.8%		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
	1800 to 1899	27.5%	71	2.1%	3	6.8%	26	3.0%	13	4.8%	7	8.9%	120
	Before 1800	1.1%	3	0.0%	0	0.3%	1	0.2%	1	1.0%	2	0.5%	6
	Other, please specify:	2.3%	6	0.5%	1	1.1%	4	0.0%	0	0.0%	0	0.8%	11
	Total	100.0%	258	100.0%	130	100.0%	375	100.0%	434	100.0%	153	100.0%	1351
Moved in the last five years	Not moved	78.7%	296	72.7%	134	85.1%	353	87.7%	403	89.1%	140	83.3%	1327
	Moved	21.3%	80	27.3%	50	14.9%	62	12.3%	57	10.9%	17	16.7%	266
	Total	100.0%	377	100.0%	184	100.0%	415	100.0%	460	100.0%	158	100.0%	1593
At least one child in household	No Child(ren) at home	70.9%	267	68.4%	126	71.6%	297	72.6%	334	73.3%	115	71.5%	1140
	Child(ren) at home	29.1%	110	31.6%	58	28.4%	118	27.4%	126	26.7%	42	28.5%	453
	Total	100.0%	377	100.0%	184	100.0%	415	100.0%	460	100.0%	158	100.0%	1593
Single parent household	Not single-parent household	93.5%	347	93.0%	169	96.1%	393	95.2%	432	100.0%	154	95.3%	1494
	Single parent household	6.5%	24	7.0%	13	3.9%	16	4.8%	22	0.0%	0	4.7%	74
	Total	100.0%	371	100.0%	181	100.0%	409	100.0%	453	100.0%	154	100.0%	1569
At least one member of household fully retired	Not retired	70.3%	257	72.1%	132	69.5%	283	61.8%	283	61.8%	97	67.0%	1052
	Retired	29.7%	109	27.9%	51	30.5%	124	38.2%	175	38.2%	60	33.0%	519
	Total	100.0%	366	100.0%	183	100.0%	407	100.0%	457	100.0%	158	100.0%	1571
At least one household member has difficulty functioning due to a physical, mental, or emotional condition	Not disabled	82.4%	310	87.2%	160	86.2%	357	87.4%	402	88.8%	140	86.0%	1370
	Disabled	17.6%	66	12.8%	24	13.8%	57	12.6%	58	11.2%	18	14.0%	223
	Total	100%	377	100%	184	100%	415	100%	460	100%	158	100%	1593

Table 22. Mean Household Size by Strata

Stratification by Participation Rate	Mean	N	Std. Deviation
Strata 1, Less than 20.7%	2.45	358	1.455
Strata 2, 20.7-25.8%	2.63	183	1.646
Strata 3, 25.9-32.3%	2.64	412	1.498
Strata 4, 32.4-38.8%	2.48	450	1.289
Strata 5, More than 38.8%	2.74	157	1.291
Total	2.56	1560	1.431

Table 23. Income and College

		Stratification by Participation Rate											
		Strata 1, Less than 20.7%		Strata 2, 20.7-25.8%		Strata 3, 25.9-32.3%		Strata 4, 32.4-38.8%		Strata 5, More than 38.8%		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Income category	Low income	57.4%	197	44.3%	78	30.2%	117	32.0%	140	15.9%	24	37.2%	555
	Moderate income	11.1%	38	9.0%	16	12.8%	50	17.4%	76	12.3%	18	13.3%	198
	Higher than moderate income	31.5%	108	46.8%	82	57.0%	221	50.6%	221	71.8%	107	49.5%	740
	Total	100%	344	100%	175	100%	388	100%	438	100%	149	100%	1493
Level of respondent education	Less than high school	11.9%	43	10.3%	18	3.7%	15	2.4%	10	0.3%	0	5.7%	87
	High school graduate or equivalent (e.g., GED)	29.5%	106	18.8%	34	15.4%	62	19.7%	86	11.7%	18	20.0%	304
	Attended some college, but didn't get a degree	17.1%	61	9.6%	17	15.1%	60	19.5%	85	8.4%	13	15.5%	237
	Associate degree	6.5%	23	6.4%	11	13.7%	55	9.3%	41	4.7%	7	9.0%	138
	Bachelor's degree	17.6%	63	23.1%	41	29.0%	116	25.8%	112	35.3%	54	25.3%	387
	Master's degree	9.5%	34	16.7%	30	17.3%	69	16.6%	72	34.3%	53	16.9%	258
	Professional degree	4.8%	17	3.9%	7	3.0%	12	2.6%	11	1.9%	3	3.3%	50

		Stratification by Participation Rate											
		Strata 1, Less than 20.7%		Strata 2, 20.7-25.8%		Strata 3, 25.9-32.3%		Strata 4, 32.4-38.8%		Strata 5, More than 38.8%		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
	Doctorate degree	2.6%	9	10.1%	18	2.7%	11	4.1%	18	3.3%	5	4.0%	61
	Other	0.7%	2	1.1%	2	0.0%	0	0.0%	0	0.0%	0	0.3%	4
	Total	100%	359	100%	179	100%	399	100%	435	100%	153	100%	1526
Respondent is a college graduate	No college	59.1%	212	39.8%	71	34.2%	136	41.6%	181	20.5%	31	41.4%	632
	College	40.9%	147	60.2%	108	65.8%	263	58.4%	254	79.5%	122	58.6%	893
	Total	100%	359	100%	179	100%	399	100%	435	100%	153	100%	1526

Table 24. Languages spoken in home

		Stratification by Participation Rate											
		Strata 1, Less than 20.7%		Strata 2, 20.7-25.8%		Strata 3, 25.9-32.3%		Strata 4, 32.4-38.8%		Strata 5, More than 38.8%		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Speak languages other than English at home	Yes	32.7%	123	26.4%	49	23.2%	96	16.2%	75	18.2%	29	23.3%	371
	No	67.3%	253	73.6%	135	76.8%	318	83.8%	385	81.8%	129	76.7%	1222
	Total	100%	377	100%	184	100%	415	100%	460	100%	158	100%	1593
Languages spoken at home besides English	Only Spanish	51.5%	63	55.8%	27	17.8%	17	11.2%	8	7.2%	2	31.8%	118
	Only Portuguese	15.1%	19	4.5%	2	31.3%	30	40.4%	30	2.8%	1	22.0%	82
	Only Chinese	0.0%	0	12.5%	6	1.7%	2	3.2%	2	5.7%	2	3.2%	12
	Only French	5.7%	7	1.6%	1	0.7%	1	4.4%	3	13.4%	4	4.2%	16
	Only Vietnamese	3.6%	4	0.0%	0	3.8%	4	2.4%	2	0.0%	0	2.6%	10
	Only Russian	0.0%	0	3.3%	2	5.1%	5	2.1%	2	1.6%	0	2.3%	9
	Only Arabic	0.9%	1	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.3%	1
	Only Italian	0.0%	0	2.0%	1	10.4%	10	3.6%	3	17.9%	5	5.1%	19
	Only Other	13.2%	16	11.0%	5	9.6%	9	21.0%	16	26.2%	8	14.5%	54
	Spanish and Portuguese	3.7%	5	4.5%	2	1.0%	1	3.8%	3	0.0%	0	2.8%	10
	Spanish and French	0.0%	0	0.0%	0	0.0%	0	1.1%	1	5.4%	2	0.6%	2
	Two languages	6.0%	7	4.8%	2	14.4%	14	6.8%	5	19.8%	6	9.2%	34
	Three languages	0.4%	1	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.1%	1
	Four languages	0.0%	0	0.0%	0	4.2%	4	0.0%	0	0.0%	0	1.1%	4
	Total	100.0%	123	100.0%	49	100.0%	96	100.0%	75	100.0%	29	100.0%	371

		Stratification by Participation Rate											
		Strata 1, Less than 20.7%		Strata 2, 20.7-25.8%		Strata 3, 25.9-32.3%		Strata 4, 32.4-38.8%		Strata 5, More than 38.8%		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
How well do you speak English?	Very well	61.4%	92	47.2%	28	62.4%	65	71.7%	78	88.9%	36	64.6%	298
	Well	19.2%	29	31.7%	19	15.0%	16	12.6%	14	6.2%	2	17.2%	79
	Not well	12.4%	18	15.9%	9	19.9%	21	7.5%	8	1.1%	0	12.4%	57
	Not at all	7.1%	11	5.2%	3	2.7%	3	8.3%	9	3.9%	2	5.9%	27
	Total	100.0%	149	100.0%	59	100.0%	104	100.0%	109	100.0%	40	100.0%	461
Of those who speak another language, how well speak English	Speak English well or very well	80.6%	120	78.9%	47	77.4%	80	84.2%	92	95.0%	38	81.8%	377
	Speak English not at all or not well	19.4%	29	21.1%	12	22.6%	23	15.8%	17	5.0%	2	18.2%	84
	Total	100.0%	149	100.0%	59	100.0%	104	100.0%	109	100.0%	40	100.0%	461

C.2.2 Awareness, Participation, and Barriers to Participation

Table 25. Heard of Mass Save and/or Awareness of Energy Services Offered through CAP Agency / LEAN

		Stratification by Participation Rate											
		Strata 1, Less than 20.7%		Strata 2, 20.7-25.8%		Strata 3, 25.9-32.3%		Strata 4, 32.4-38.8%		Strata 5, More than 38.8%		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Before today, have you heard of Mass Save?	Yes	56.3%	211	54.4%	100	81.4%	336	86.8%	390	86.8%	136	74.4%	1172
	No	43.7%	163	45.6%	83	18.6%	77	13.2%	59	13.2%	21	25.6%	403
	Total	100.0%	374	100.0%	183	100.0%	412	100.0%	450	100.0%	156	100.0%	1575
Before today, were you aware that energy saving programs and services are available to income qualifying households through CAP agencies or LEAN?	Yes	28.7%	64	26.2%	32	21.8%	49	35.7%	83	30.7%	22	28.6%	249
	No	71.3%	158	73.8%	90	78.2%	176	64.3%	149	69.3%	49	71.4%	622
	Total	100.0%	222	100.0%	122	100.0%	226	100.0%	231	100.0%	71	100.0%	871

		Stratification by Participation Rate											
		Strata 1, Less than 20.7%		Strata 2, 20.7-25.8%		Strata 3, 25.9-32.3%		Strata 4, 32.4-38.8%		Strata 5, More than 38.8%		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Respondent indicated aware of Mass Save and/or CAP Agency / LEAN services	Aware	61.7%	231	62.6%	115	81.5%	336	88.1%	396	86.8%	136	77.0%	1213
	Not aware	38.3%	143	37.4%	68	18.5%	76	11.9%	54	13.2%	21	23.0%	362
	Total	100.0%	374	100.0%	183	100.0%	412	100.0%	450	100.0%	156	100.0%	1575

Table 26. Of Households Categorized Low Income, Heard of Mass Save and/or Awareness of Energy Services Offered through CAP Agency / LEAN

		Stratification by Participation Rate											
		Strata 1, Less than 20.7%		Strata 2, 20.7-25.8%		Strata 3, 25.9-32.3%		Strata 4, 32.4-38.8%		Strata 5, More than 38.8%		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Before today, have you heard of Mass Save?	Yes	51.3%	101	42.2%	33	67.6%	79	75.3%	103	60.8%	14	59.9%	330
	No	48.7%	96	57.8%	45	32.4%	38	24.7%	34	39.2%	9	40.1%	221
	Total	100.0%	197	100.0%	78	100.0%	117	100.0%	137	100.0%	23	100.0%	552
Before today, were you aware that energy saving programs and services are available to income qualifying households through CAP agencies or LEAN?	Yes	28.9%	33	34.6%	18	16.1%	8	26.9%	18	1.5%	0	26.8%	77
	No	71.1%	80	65.4%	34	83.9%	43	73.1%	49	98.5%	4	73.2%	210
	Total	100.0%	113	100.0%	52	100.0%	51	100.0%	67	100.0%	4	100.0%	287
Respondent indicated aware of Mass Save and/or CAP Agency / LEAN services	Aware	57.1%	113	56.5%	44	67.8%	79	78.4%	107	60.8%	14	64.7%	357
	Not aware	42.9%	85	43.5%	34	32.2%	38	21.6%	30	39.2%	9	35.3%	195
	Total	100.0%	197	100.0%	78	100.0%	117	100.0%	137	100.0%	23	100.0%	552

Table 27. Of Household Categorized Moderate Income, Heard of Mass Save and/or Awareness of Energy Services Offered through CAP Agency / LEAN

		Stratification by Participation Rate											
		Strata 1, Less than 20.7%		Strata 2, 20.7-25.8%		Strata 3, 25.9-32.3%		Strata 4, 32.4-38.8%		Strata 5, More than 38.8%		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Before today, have you heard of Mass Save?	Yes	77.1%	29	65.3%	10	76.2%	38	82.8%	63	79.6%	15	78.3%	155
	No	22.9%	9	34.7%	5	23.8%	12	17.2%	13	20.4%	4	21.7%	43
	Total	100.0%	38	100.0%	16	100.0%	50	100.0%	76	100.0%	18	100.0%	198
Before today, were you aware that energy saving programs and services are available to income qualifying households through CAP agencies or LEAN?	Yes	27.7%	7	28.9%	4	10.1%	3	30.5%	12	31.6%	4	24.3%	30
	No	72.3%	18	71.1%	10	89.9%	31	69.5%	27	68.4%	9	75.7%	94
	Total	100.0%	25	100.0%	13	100.0%	34	100.0%	38	100.0%	13	100.0%	124
Respondent indicated aware of Mass Save and/or CAP Agency / LEAN services	Aware	77.1%	29	79.1%	12	76.6%	38	82.8%	63	79.6%	15	79.5%	158
	Not aware	22.9%	9	20.9%	3	23.4%	12	17.2%	13	20.4%	4	20.5%	41
	Total	100.0%	38	100.0%	16	100.0%	50	100.0%	76	100.0%	18	100.0%	198

Table 28. Awareness of Specific Mass Save Offerings (web/phone only)

		Stratification by Participation Rate											
		Strata 1, Less than 20.7%		Strata 2, 20.7-25.8%		Strata 3, 25.9-32.3%		Strata 4, 32.4-38.8%		Strata 5, More than 38.8%		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Which of the following programs are you aware of?	Home Energy Assessment/Audit	76.9%	96	75.6%	52	91.6%	175	94.6%	195	87.5%	56	87.6%	575
	Appliance Rebates	47.6%	60	54.8%	38	63.7%	122	62.6%	129	59.0%	38	58.9%	386
	Appliance Recycling	24.5%	31	23.7%	16	38.7%	74	29.9%	62	24.6%	16	30.3%	198
	Lighting Discounts	42.5%	53	42.1%	29	64.2%	123	42.9%	88	53.9%	35	50.0%	328
	Heating or Water Heating Rebates	33.3%	42	37.8%	26	53.3%	102	45.5%	94	63.1%	41	46.4%	304

		Stratification by Participation Rate											
		Strata 1, Less than 20.7%		Strata 2, 20.7-25.8%		Strata 3, 25.9-32.3%		Strata 4, 32.4-38.8%		Strata 5, More than 38.8%		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
	Cooling Rebates	27.9%	35	35.2%	24	40.8%	78	27.6%	57	40.9%	26	33.6%	220
	Insulation / Weatherization Incentives	47.7%	60	54.1%	37	64.5%	123	57.0%	117	68.5%	44	58.2%	382
	New Construction Incentives	12.5%	16	14.4%	10	8.9%	17	6.0%	12	4.3%	3	8.8%	58
	Renovation or Home Addition Incentives	14.3%	18	14.3%	10	14.2%	27	9.2%	19	13.5%	9	12.6%	83
	HEAT Loan Financing	24.1%	30	25.1%	17	20.8%	40	24.2%	50	23.1%	15	23.2%	152
	Other	0.6%	1	7.0%	5	2.5%	5	3.2%	7	4.9%	3	3.1%	20
	None of these offerings	10.5%	13	10.4%	7	2.1%	4	1.2%	2	3.3%	2	4.4%	29
	Total	100.0%	125	100.0%	69	100.0%	191	100.0%	206	100.0%	64	100.0%	656

Table 29. Source of Mass Save Awareness (web/phone survey only)

		Stratification by Participation Rate											
		Strata 1, Less than 20.7%		Strata 2, 20.7-25.8%		Strata 3, 25.9-32.3%		Strata 4, 32.4-38.8%		Strata 5, More than 38.8%		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
How did you learn about the offerings?	I got something in the mail	50.4%	41	50.0%	20	55.5%	58	56.5%	73	52.5%	17	53.9%	209
	Through an energy bill insert	29.4%	24	22.4%	9	31.7%	33	30.0%	39	19.1%	6	28.6%	111
	I got an email	8.4%	7	5.0%	2	8.5%	9	13.5%	17	7.9%	3	9.7%	38
	Through talking to a contractor	7.4%	6	6.4%	3	6.4%	7	7.9%	10	8.0%	3	7.2%	28
	Mass Save or other websites, including the LEAN multifamily program website	10.8%	9	15.1%	6	26.1%	27	13.4%	17	25.3%	8	17.4%	68
	Through a phone call	12.6%	10	10.1%	4	6.1%	6	3.3%	4	9.9%	3	7.3%	28

		Stratification by Participation Rate											
		Strata 1, Less than 20.7%		Strata 2, 20.7-25.8%		Strata 3, 25.9-32.3%		Strata 4, 32.4-38.8%		Strata 5, More than 38.8%		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
	Through a Community Action Program agency	14.0%	11	10.4%	4	6.7%	7	5.7%	7	0.1%	0	7.7%	30
	Through another community or neighborhood organization	8.2%	7	16.1%	7	7.8%	8	4.5%	6	2.6%	1	7.2%	28
	Through a newspaper or magazine ad	8.3%	7	1.5%	1	8.1%	8	2.6%	3	6.1%	2	5.5%	21
	Through a radio ad	6.8%	6	1.5%	1	5.9%	6	6.4%	8	2.5%	1	5.5%	21
	Saw on billboards on highways, side streets, trains, or buses	7.0%	6	8.2%	3	10.7%	11	2.8%	4	0.0%	0	6.1%	24
	Social media (Twitter, Facebook, etc.)	11.4%	9	8.4%	3	4.2%	4	5.8%	7	2.5%	1	6.5%	25
	From a friend or family member	28.0%	23	33.2%	13	32.1%	34	31.9%	41	26.9%	9	30.8%	119
	Through a community event	6.3%	5	3.5%	1	2.6%	3	0.8%	1	8.5%	3	3.4%	13
	Other	6.5%	5	10.1%	4	8.6%	9	3.6%	5	15.8%	5	7.2%	28
	Total	100.0%	81	100.0%	40	100.0%	105	100.0%	129	100.0%	32	100.0%	387

Table 30. Self-reported Participation in Mass Save in Current Home

		Stratification by Participation Rate											
		Strata 1, Less than 20.7%		Strata 2, 20.7-25.8%		Strata 3, 25.9-32.3%		Strata 4, 32.4-38.8%		Strata 5, More than 38.8%		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Self-reported participation in current home	Did not participate in current home	80.2%	269	76.2%	124	61.5%	219	54.4%	222	48.7%	70	64.3%	903
	Participated in current home	19.8%	66	23.8%	39	38.5%	137	45.6%	187	51.3%	73	35.7%	502
	Total	100.0%	335	100.0%	163	100.0%	356	100.0%	409	100.0%	143	100.0%	1405
Length of time since participation	Within two years	52.0%	35	51.9%	21	46.5%	65	44.0%	83	33.5%	25	44.8%	228
	2-5 years ago	21.8%	15	29.3%	12	29.5%	41	31.6%	59	28.7%	21	29.1%	148
	6-10 years ago	17.0%	11	10.7%	4	12.7%	18	17.8%	34	18.2%	14	15.8%	81
	More than 10 years ago	7.0%	5	1.3%	0	11.4%	16	6.2%	12	19.0%	14	9.2%	47
	I don't know	2.3%	2	6.9%	3	0.0%	0	0.4%	1	0.6%	0	1.1%	5
	Total	100.0%	68	100.0%	40	100.0%	139	100.0%	188	100.0%	75	100.0%	510

Table 31. Programs Participated in Current Home (web/phone only)

		Stratification by Participation Rate											
		Strata 1, Less than 20.7%		Strata 2, 20.7-25.8%		Strata 3, 25.9-32.3%		Strata 4, 32.4-38.8%		Strata 5, More than 38.8%		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Which of the following offerings did you participated in at current home (web/phone only)?	Home Energy Assessment/Audit	37.7%	15	41.3%	10	67.9%	54	87.1%	72	75.6%	18	67.6%	168
	Appliance Rebates	18.2%	7	18.6%	4	16.9%	13	23.2%	19	13.5%	3	19.0%	47
	Appliance Recycling	4.1%	2	0.5%	0	15.5%	12	18.9%	16	2.1%	1	12.1%	30
	Lighting Discounts	35.3%	14	16.3%	4	24.6%	19	27.8%	23	40.8%	10	28.2%	70
	Heating or Water Heating Rebates	14.8%	6	6.0%	1	11.9%	9	14.0%	11	37.6%	9	15.0%	37
	Cooling Rebates	2.7%	1	1.7%	0	9.8%	8	10.4%	9	7.1%	2	7.8%	19
	Insulation / Weatherization Incentives	15.4%	6	18.0%	4	42.8%	34	46.5%	38	40.0%	10	37.0%	92

		Stratification by Participation Rate											
		Strata 1, Less than 20.7%		Strata 2, 20.7-25.8%		Strata 3, 25.9-32.3%		Strata 4, 32.4-38.8%		Strata 5, More than 38.8%		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
	New Construction Incentives	3.4%	1	0.0%	0	0.2%	0	0.0%	0	3.3%	1	0.9%	2
	Renovation or Home Addition Incentives	6.5%	3	0.0%	0	2.0%	2	0.0%	0	0.0%	0	1.7%	4
	HEAT Loan Financing	10.4%	4	9.0%	2	10.8%	8	7.7%	6	26.0%	6	11.0%	27
	Free equipment / services through CAP Agency or LEAN	5.7%	2	12.8%	3	14.6%	12	8.2%	7	17.8%	4	11.2%	28
	Other	12.3%	5	10.8%	3	7.5%	6	1.7%	1	1.7%	0	6.1%	15
	None of these offerings	20.4%	8	36.0%	8	1.8%	1	2.9%	2	0.0%	0	8.2%	20
	Total	100.0%	40	100.0%	23	100.0%	79	100.0%	82	100.0%	24	100.0%	249

Table 32. Self-reported Other Participation in Mass Save (web/phone only)

		Stratification by Participation Rate											
		Strata 1, Less than 20.7%		Strata 2, 20.7-25.8%		Strata 3, 25.9-32.3%		Strata 4, 32.4-38.8%		Strata 5, More than 38.8%		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Self-reported participation status: I participated in a previous home I owned or rented	Checked	14.4%	15	8.5%	5	18.0%	24	13.6%	21	16.6%	7	14.6%	73
	Not Checked	85.6%	91	91.5%	55	82.0%	108	86.4%	135	83.4%	36	85.4%	425
	Total	100.0%	106	100.0%	60	100.0%	132	100.0%	156	100.0%	44	100.0%	497
Self-reported participation status: I started the application process in my current or previous home but didn't complete it	Checked	4.8%	4	7.7%	4	0.4%	0	2.8%	4	6.9%	3	3.5%	15
	Not Checked	95.2%	83	92.3%	48	99.6%	116	97.2%	137	93.1%	37	96.5%	422
	Total	100.0%	88	100.0%	52	100.0%	117	100.0%	141	100.0%	40	100.0%	438
Self-reported participation status: I looked into	Checked	14.2%	12	11.0%	6	0.5%	1	14.8%	21	5.3%	2	9.5%	42
	Not Checked	85.8%	74	89.0%	47	99.5%	116	85.2%	120	94.7%	37	90.5%	394

		Stratification by Participation Rate											
		Strata 1, Less than 20.7%		Strata 2, 20.7-25.8%		Strata 3, 25.9-32.3%		Strata 4, 32.4-38.8%		Strata 5, More than 38.8%		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
participating in my current or previous home but never signed up	Total	100.0%	86	100.0%	52	100.0%	117	100.0%	141	100.0%	40	100.0%	436
Self-reported participation status: I never participated or looked into participating	Checked	44.5%	38	47.9%	23	35.9%	42	26.3%	36	28.4%	11	35.2%	151
	Not Checked	55.5%	47	52.1%	25	64.1%	75	73.7%	102	71.6%	27	64.8%	277
	Total	100.0%	86	100.0%	49	100.0%	117	100.0%	138	100.0%	38	100.0%	428

Table 33. Why Did Not Look into or Complete Participation (web/phone only)

		Stratification by Participation Rate											
		Strata 1, Less than 20.7%		Strata 2, 20.7-25.8%		Strata 3, 25.9-32.3%		Strata 4, 32.4-38.8%		Strata 5, More than 38.8%		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Why have not looked into participating at current address (web/phone only)	It was too time consuming	0.0%	0	0.0%	0	6.3%	0	0.0%	0	0.0%	0	1.9%	0
	Amount of incentive not worth the effort	0.0%	0	100.0%	1	0.0%	0	0.0%	0	13.1%	0	10.4%	2
	Confused or needed more information about the process	30.9%	1	54.1%	1	0.0%	0	0.0%	0	26.8%	1	17.5%	3
	Too difficult to schedule an assessment	30.9%	1	54.1%	1	0.0%	0	0.0%	0	0.0%	0	12.4%	2
	Was not comfortable with an energy assessor coming into home	30.9%	1	0.0%	0	0.0%	0	0.0%	0	60.1%	2	19.6%	3

		Stratification by Participation Rate											
		Strata 1, Less than 20.7%		Strata 2, 20.7-25.8%		Strata 3, 25.9-32.3%		Strata 4, 32.4-38.8%		Strata 5, More than 38.8%		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
	Did not want to share information required through the process	0.0%	0	54.1%	1	6.3%	0	0.0%	0	0.0%	0	6.2%	1
	Did not appear I was eligible	0.0%	0	54.1%	1	89.6%	5	28.6%	1	0.0%	0	36.1%	6
	Could not get or did not want to try to get landlord's cooperation (rent only)	28.8%	1	0.0%	0	87.0%	4	71.4%	2	0.0%	0	45.6%	8
	Structural or other issues with home that needed to be fixed first	0.0%	0	45.9%	1	0.0%	0	0.0%	0	0.0%	0	3.6%	1
	Other	71.2%	3	0.0%	0	4.2%	0	0.0%	0	13.1%	0	22.6%	4
	Total	100.0%	4	100.0%	1	100.0%	5	100.0%	3	100.0%	3	100.0%	17
Why started but did not complete the process of applying (web/phone only)	It was too time consuming	22.2%	4	0.0%	0	19.8%	0	4.2%	1	23.8%	1	10.9%	6
	Amount of incentive not worth the effort	8.2%	1	0.0%	0	0.0%	0	7.5%	2	7.9%	0	6.3%	4
	Could not afford the project/purchase	8.5%	1	0.0%	0	0.0%	0	28.2%	7	0.5%	0	14.8%	8
	Confused or needed more information about the process	29.2%	5	36.2%	3	19.8%	0	13.7%	3	0.0%	0	20.6%	12
	Too difficult to schedule an assessment	3.6%	1	26.0%	2	0.0%	0	0.0%	0	0.0%	0	5.1%	3

		Stratification by Participation Rate											
		Strata 1, Less than 20.7%		Strata 2, 20.7-25.8%		Strata 3, 25.9-32.3%		Strata 4, 32.4-38.8%		Strata 5, More than 38.8%		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
	Was not comfortable with an energy assessor coming into home	12.0%	2	0.5%	0	0.0%	0	12.6%	3	44.1%	2	13.1%	7
	Did not want to share information required through the process	8.2%	1	0.0%	0	0.0%	0	0.0%	0	16.2%	1	3.8%	2
	Did not appear I was eligible	14.0%	2	33.2%	3	19.5%	0	17.7%	4	16.3%	1	19.0%	11
	Could not get or did not want to try to get landlord's cooperation (rent only)	29.6%	5	11.2%	1	8.0%	0	20.4%	5	7.9%	0	20.1%	11
	Structural or other issues with home that needed to be fixed first	12.2%	2	18.5%	2	0.0%	0	3.5%	1	0.0%	0	7.9%	5
	Other	24.1%	4	8.9%	1	41.0%	1	24.7%	6	31.2%	2	23.1%	13
	Total	100.0%	16	100.0%	9	100.0%	2	100.0%	25	100.0%	5	100.0%	57
Main reasons have not participated in any Mass Save or Income Eligible Program offers (web/phone only)	Could not afford the project/purchase	7.9%	3	2.0%	1	11.5%	4	7.2%	3	0.3%	0	7.0%	11
	House is already energy efficient	7.2%	3	15.3%	5	41.9%	16	13.8%	5	12.8%	1	19.0%	30
	House needs other maintenance first	5.5%	2	12.9%	4	4.9%	2	4.9%	2	0.0%	0	6.4%	10
	Did not have the time	15.8%	7	14.6%	4	12.5%	5	18.1%	7	40.4%	3	16.5%	26
	Did not want to deal with the hassle	25.8%	11	33.3%	10	15.0%	6	20.0%	7	19.9%	2	23.0%	36

		Stratification by Participation Rate											
		Strata 1, Less than 20.7%		Strata 2, 20.7-25.8%		Strata 3, 25.9-32.3%		Strata 4, 32.4-38.8%		Strata 5, More than 38.8%		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
	Seemed too complicated	10.3%	4	16.4%	5	17.0%	6	4.9%	2	44.2%	3	13.6%	21
	Do not need the money	13.2%	6	7.1%	2	0.0%	0	4.9%	2	5.3%	0	6.5%	10
	Do not know how to participate	20.9%	9	25.6%	8	8.7%	3	12.1%	4	25.4%	2	17.0%	27
	Do not know where to get information	16.5%	7	8.8%	3	0.8%	0	2.7%	1	0.0%	0	7.2%	11
	Did not know about the offerings	28.9%	13	28.3%	9	29.5%	11	29.7%	11	25.8%	2	28.9%	45
	Do not own the building / could not get landlord to do it	26.1%	11	18.4%	6	17.0%	6	21.9%	8	0.0%	0	20.1%	31
	Did not believe the advertisement / savings claims	4.4%	2	4.9%	2	0.8%	0	4.4%	2	0.0%	0	3.4%	5
	Did not have financing options	1.7%	1	3.3%	1	12.6%	5	9.9%	4	19.9%	2	7.5%	12
	Other	5.3%	2	13.1%	4	3.7%	1	1.7%	1	5.6%	0	5.6%	9
	Total	100.0%	43	100.0%	31	100.0%	38	100.0%	36	100.0%	8	100.0%	156

Table 34. Likelihood to Participate in Next Five Years (web/phone only)

		Stratification by Participation Rate											
		Strata 1, Less than 20.7%		Strata 2, 20.7-25.8%		Strata 3, 25.9-32.3%		Strata 4, 32.4-38.8%		Strata 5, More than 38.8%		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Likelihood to participate in the next five years	Very unlikely	11.9%	22	18.0%	17	8.1%	15	5.8%	12	17.3%	11	10.5%	78
	Somewhat unlikely	7.1%	13	5.6%	5	4.3%	8	7.9%	16	4.6%	3	6.2%	46
	Neither likely nor unlikely	19.2%	36	14.9%	14	14.1%	27	17.7%	36	14.6%	9	16.5%	122
	Somewhat likely	36.0%	68	31.7%	30	37.0%	70	36.5%	74	36.0%	23	35.8%	265
	Very likely	25.8%	49	29.8%	28	36.5%	69	32.0%	65	27.5%	17	30.9%	229
	Total	100.0%	189	100.0%	95	100.0%	190	100.0%	203	100.0%	64	100.0%	740

C.2.3 Expenses and Assistance, Trust, and Concerns and Attitudes

Table 35. Expenses and Renter Responsibility for Paying Energy Bills (web/phone only)

		Stratification by Participation Rate											
		Strata 1, Less than 20.7%		Strata 2, 20.7-25.8%		Strata 3, 25.9-32.3%		Strata 4, 32.4-38.8%		Strata 5, More than 38.8%		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Feeling about ability to meet expenses	I am easily able to pay for all expenses	23.9%	51	33.7%	38	37.1%	80	33.5%	76	58.6%	42	34.2%	286
	It is tight, but I can pay for all expenses	41.0%	87	43.4%	49	43.5%	93	49.3%	113	33.1%	24	43.6%	364
	Each month, I'm not sure if I will be able to pay for all expenses	18.1%	38	14.6%	16	8.8%	19	10.5%	24	3.4%	2	11.9%	100
	I am not able to pay for all expenses some months	9.1%	19	4.3%	5	7.9%	17	4.1%	9	2.7%	2	6.2%	52

		Stratification by Participation Rate											
		Strata 1, Less than 20.7%		Strata 2, 20.7-25.8%		Strata 3, 25.9-32.3%		Strata 4, 32.4-38.8%		Strata 5, More than 38.8%		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
	I am not able to pay for all expenses most or all months	7.9%	17	4.0%	4	2.7%	6	2.6%	6	2.2%	2	4.1%	34
	Total	100.0%	211	100.0%	112	100.0%	214	100.0%	228	100.0%	71	100.0%	837
Renter responsible for paying electric bill?	Yes	96.5%	128	93.6%	56	94.9%	47	97.9%	40	100.0%	3	95.8%	274
	No	2.5%	3	6.4%	4	5.1%	2	2.1%	1	0.0%	0	3.7%	11
	Don't know	1.0%	1	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.5%	1
	Total	100.0%	133	100.0%	60	100.0%	49	100.0%	41	100.0%	3	100.0%	286
Renter responsible for paying natural gas bill?	Yes	69.7%	93	72.1%	43	68.0%	33	71.6%	29	61.1%	2	70.1%	200
	No	11.5%	15	9.7%	6	16.7%	8	6.0%	2	0.0%	0	11.1%	32
	Don't know	3.8%	5	5.9%	4	0.0%	0	0.0%	0	0.0%	0	3.0%	9
	Do not have	15.1%	20	12.3%	7	15.2%	7	22.4%	9	38.9%	1	15.9%	45
	Total	100.0%	133	100.0%	60	100.0%	49	100.0%	41	100.0%	3	100.0%	286

Table 36. Indicate Participated an Assistance Program (SSI, Government Assistance, Assistance for Energy Bills, Food Stamps, MassHealth, and/or National School Food Program)

		Stratification by Participation Rate											
		Strata 1, Less than 20.7%		Strata 2, 20.7-25.8%		Strata 3, 25.9-32.3%		Strata 4, 32.4-38.8%		Strata 5, More than 38.8%		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Participated in at least one assistance program	Did not participate in social program	50.2%	189	62.2%	114	77.9%	323	72.5%	334	91.5%	144	69.3%	1104
	Participated in social program	49.8%	188	37.8%	70	22.1%	92	27.5%	126	8.5%	13	30.7%	489
	Total	100.0%	377	100.0%	184	100.0%	415	100.0%	460	100.0%	158	100.0%	1593

Table 37. Ranked in Top Three of Most Trustworthy to Get Information Energy Saving Offerings (web/phone only)

		Stratification by Participation Rate											
		Strata 1, Less than 20.7%		Strata 2, 20.7-25.8%		Strata 3, 25.9-32.3%		Strata 4, 32.4-38.8%		Strata 5, More than 38.8%		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Indicated in top three of most trustworthy source to get information about energy savings	Contractor	27.9%	57	22.2%	25	48.0%	105	42.9%	97	37.6%	27	37.4%	311
	Local government	42.9%	88	51.4%	57	37.4%	82	40.7%	92	48.1%	34	42.4%	353
	State government	43.5%	89	39.0%	43	36.0%	79	37.5%	85	38.4%	27	38.9%	323
	Local utility	54.8%	112	52.6%	58	45.7%	100	45.1%	102	65.9%	47	50.4%	419
	Neighbor, relative, or friend	51.0%	104	62.0%	69	57.8%	126	63.6%	144	61.4%	44	58.6%	487
	Place of worship	15.4%	32	12.8%	14	15.4%	34	11.2%	25	10.8%	8	13.5%	112
	Community Action Program agency	42.9%	88	37.0%	41	36.9%	81	35.8%	81	19.6%	14	36.6%	304
	Other community or neighborhood organization	21.8%	45	22.7%	25	18.8%	41	13.9%	31	10.3%	7	18.0%	150
	Other source (specified)	11.1%	23	1.5%	2	5.4%	12	13.7%	31	5.0%	4	8.5%	71
	None	2.9%	6	2.0%	2	1.1%	2	2.2%	5	0.6%	0	1.9%	16
Total		100.0%	204	100.0%	111	100.0%	219	100.0%	226	100.0%	71	100.0%	831

Table 38. Concerns and Attitudes About Energy Costs and Use (web/phone only)

		Stratification by Participation Rate											
		Strata 1, Less than 20.7%		Strata 2, 20.7-25.8%		Strata 3, 25.9-32.3%		Strata 4, 32.4-38.8%		Strata 5, More than 38.8%		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
I worry whether there is enough money to pay my energy bill	Do not agree	28.4%	60	20.0%	23	22.5%	49	20.8%	47	17.0%	12	22.7%	191
	2	10.2%	22	9.7%	11	7.0%	15	14.1%	32	2.0%	1	9.7%	81
	3	15.8%	33	20.7%	23	19.9%	43	14.4%	33	18.4%	13	17.4%	146
	4	16.6%	35	11.8%	13	18.4%	40	13.4%	31	21.9%	16	16.0%	135
	Completely agree	29.0%	61	37.7%	43	32.3%	71	37.4%	85	40.7%	29	34.3%	289
	Total	100.0%	211	100.0%	113	100.0%	219	100.0%	228	100.0%	71	100.0%	842
I worry that the cost of energy to run my home will increase	Do not agree	39.8%	84	36.3%	41	43.0%	94	51.9%	119	29.2%	21	42.6%	358
	2	16.7%	35	23.3%	26	23.0%	50	19.0%	43	21.4%	15	20.2%	170
	3	10.1%	21	22.2%	25	18.6%	41	12.1%	28	32.4%	23	16.4%	138
	4	14.4%	30	4.5%	5	3.2%	7	4.6%	10	8.7%	6	7.0%	59
	Completely agree	19.0%	40	13.7%	15	12.2%	27	12.4%	28	8.3%	6	13.8%	116
	Total	100.0%	210	100.0%	113	100.0%	219	100.0%	228	100.0%	71	100.0%	840
I feel guilty if I use too much energy	Do not agree	23.3%	49	27.3%	31	23.5%	51	25.7%	58	18.4%	13	24.1%	203
	2	22.5%	47	18.7%	21	24.1%	53	24.0%	55	23.0%	16	22.8%	192
	3	28.4%	59	23.3%	26	29.8%	65	24.5%	56	31.5%	22	27.3%	229
	4	7.7%	16	14.3%	16	5.5%	12	10.3%	23	13.7%	10	9.2%	77
	Completely agree	18.1%	38	16.4%	18	17.1%	37	15.6%	35	13.3%	10	16.5%	139
	Total	100.0%	210	100.0%	113	100.0%	219	100.0%	228	100.0%	71	100.0%	840
I tend to take the lead in my household to keep bills down	Do not agree	47.7%	99	44.2%	50	53.9%	118	58.4%	133	47.4%	34	51.7%	434
	2	13.1%	27	16.8%	19	21.3%	47	16.6%	38	24.7%	18	17.7%	148
	3	12.7%	26	20.4%	23	12.2%	27	15.9%	36	19.2%	14	15.0%	126
	4	8.2%	17	3.8%	4	2.3%	5	0.7%	2	1.1%	1	3.4%	29
	Completely agree	18.2%	38	14.8%	17	10.3%	23	8.4%	19	7.6%	5	12.1%	102
	Total	100.0%	208	100.0%	113	100.0%	219	100.0%	228	100.0%	71	100.0%	839

		Stratification by Participation Rate											
		Strata 1, Less than 20.7%		Strata 2, 20.7-25.8%		Strata 3, 25.9-32.3%		Strata 4, 32.4-38.8%		Strata 5, More than 38.8%		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
If my utility bill goes up, I feel like I must do something to reduce it	Do not agree	40.0%	84	38.0%	43	37.6%	82	39.0%	89	33.1%	24	38.2%	322
	2	16.3%	34	23.6%	27	23.7%	52	22.3%	51	28.8%	21	21.9%	184
	3	17.4%	37	15.8%	18	17.4%	38	23.1%	53	22.4%	16	19.2%	161
	4	8.1%	17	7.1%	8	12.2%	27	4.5%	10	8.2%	6	8.1%	68
	Completely agree	18.1%	38	15.4%	17	9.1%	20	11.2%	25	7.4%	5	12.6%	106
	Total	100.0%	210	100.0%	113	100.0%	219	100.0%	228	100.0%	71	100.0%	841
I often pay more for products that are environmentally friendly	Do not agree	19.8%	42	27.1%	30	18.5%	41	16.0%	36	15.5%	11	19.1%	160
	2	18.6%	39	19.2%	22	22.8%	50	25.0%	57	29.4%	21	22.5%	189
	3	30.2%	63	25.3%	29	35.3%	77	32.3%	74	32.6%	23	31.6%	266
	4	12.7%	27	13.9%	16	12.1%	27	9.1%	21	13.7%	10	11.8%	99
	Completely agree	18.7%	39	14.5%	16	11.2%	24	17.6%	40	8.8%	6	15.0%	126
	Total	100.0%	210	100.0%	113	100.0%	219	100.0%	228	100.0%	71	100.0%	840
I intend to conserve gas or electricity consumption in my home this winter	Do not agree	40.9%	86	39.9%	45	46.4%	101	48.6%	111	49.8%	35	45.1%	379
	2	16.8%	35	21.7%	24	20.7%	45	22.6%	52	27.5%	20	21.0%	176
	3	13.7%	29	19.1%	22	17.6%	38	13.8%	32	11.4%	8	15.3%	128
	4	5.4%	11	3.9%	4	11.1%	24	5.3%	12	4.1%	3	6.5%	55
	Completely agree	23.2%	49	15.3%	17	4.2%	9	9.7%	22	7.2%	5	12.2%	102
	Total	100.0%	210	100.0%	113	100.0%	219	100.0%	228	100.0%	71	100.0%	840
I know what actions to take to reduce my energy use	Do not agree	22.5%	47	23.1%	26	26.3%	57	27.7%	63	33.7%	24	25.9%	217
	2	22.9%	47	26.7%	30	30.2%	66	26.3%	60	31.9%	23	27.0%	226
	3	26.2%	54	22.1%	25	22.8%	50	26.4%	60	24.5%	17	24.7%	207
	4	12.5%	26	20.0%	23	12.8%	28	12.6%	29	3.9%	3	12.9%	108
	Completely agree	16.0%	33	8.1%	9	8.0%	17	6.9%	16	6.0%	4	9.5%	80
	Total	100.0%	207	100.0%	113	100.0%	219	100.0%	228	100.0%	71	100.0%	838
Paying my energy bill is priority, before things like food or clothing	Do not agree	20.5%	42	17.0%	19	19.1%	41	19.7%	45	14.5%	10	18.9%	157
	2	12.5%	26	16.5%	18	22.3%	48	17.0%	39	16.5%	12	17.2%	142
	3	24.9%	51	35.3%	39	32.0%	69	32.3%	73	36.1%	26	31.1%	258
	4	17.9%	37	8.5%	9	8.6%	18	14.5%	33	15.7%	11	13.1%	109
	Completely agree	24.2%	50	22.7%	25	18.1%	39	16.5%	37	17.2%	12	19.7%	164
	Total	100.0%	206	100.0%	111	100.0%	216	100.0%	227	100.0%	71	100.0%	830

Table 39. Mean Concerns and Attitudes About Energy Costs and Use (web/phone only)

Stratification by Participation Rate		I worry whether there is enough money to pay my energy bill	I worry that the cost of energy to run my home will increase	I feel guilty if I use too much energy	I tend to take the lead in my household to keep bills down	If my utility bill goes up, I feel like I must do something to reduce it	I often pay more for products that are environmentally friendly	I intend to conserve gas or electricity consumption in my home this winter	I know what actions to take to reduce my energy use	Paying my energy bill is priority, before things like food or clothing
Strata 1, Less than 20.7%	Mean	3.08	2.56	2.75	2.36	2.48	2.92	2.53	2.77	3.13
	N	211	210	210	208	210	210	210	207	206
	Std. Deviation	1.603	1.576	1.381	1.567	1.520	1.363	1.607	1.359	1.444
Strata 2, 20.7-25.8%	Mean	3.37	2.36	2.74	2.28	2.38	2.70	2.33	2.64	3.03
	N	113	113	113	113	113	113	113	113	111
	Std. Deviation	1.551	1.373	1.424	1.438	1.444	1.385	1.427	1.263	1.361
Strata 3, 25.9-32.3%	Mean	3.31	2.19	2.69	1.94	2.31	2.75	2.06	2.46	2.84
	N	219	219	219	219	219	219	219	219	216
	Std. Deviation	1.536	1.348	1.353	1.297	1.328	1.217	1.211	1.230	1.333
Strata 4, 32.4-38.8%	Mean	3.33	2.06	2.66	1.84	2.27	2.87	2.05	2.45	2.91
	N	228	228	228	228	228	228	228	228	227
	Std. Deviation	1.583	1.394	1.373	1.230	1.320	1.295	1.309	1.214	1.327
Strata 5, More than 38.8%	Mean	3.68	2.46	2.81	1.97	2.28	2.71	1.91	2.17	3.05
	N	71	71	71	71	71	71	71	71	71
	Std. Deviation	1.456	1.235	1.274	1.190	1.223	1.157	1.198	1.126	1.268
Total	Mean	3.30	2.29	2.71	2.07	2.35	2.81	2.20	2.53	2.98
	N	842	840	840	839	841	840	840	838	830
	Std. Deviation	1.566	1.425	1.366	1.377	1.383	1.294	1.387	1.264	1.360

C.3 Tables by Self-reported Participation in Current Home

C.3.1 Demographics

Table 40. Housing and Occupancy

		Self-reported participation in current home					
		Did not participate in current home		Participated in current home		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Residence status of location	Primary residence	94.7%	841	96.4%	476	95.3%	1318
	Secondary residence	2.5%	22	2.1%	11	2.4%	33
	Full-time rental property that you rent out to others	2.2%	19	1.4%	7	1.9%	26
	Part-time or vacation property that you rent out to others	0.4%	3	0.0%	0	0.2%	3
	Other, please specify:	0.3%	3	0.0%	0	0.2%	3
	Total	100.0%	889	100.0%	494	100.0%	1383
Own, rent, or rent this location out to others	Rent & Occupy	41.3%	371	15.2%	75	32.0%	446
	Own & Occupy	56.0%	503	83.0%	409	65.6%	913
	Rental property (do not occupy)	2.7%	24	1.8%	9	2.4%	33
	Total	100.0%	898	100.0%	493	100.0%	1391
Which best describes the building at this address?	A single-family house detached from any other house	47.2%	423	73.0%	361	56.4%	784
	A row home - a single-family house attached to one or more single-family house(s)	4.0%	36	1.7%	8	3.2%	45
	A building with 2 units	11.1%	99	8.4%	41	10.1%	141
	A building with 3 or 4 units	15.2%	136	7.4%	36	12.4%	172
	A building with 5 to 9 units	7.9%	70	2.4%	12	5.9%	82
	A building with 10 to 19 units	3.3%	29	1.6%	8	2.7%	37
	A building with 20 to 49 units	2.5%	22	1.7%	8	2.2%	30
	A building with 50 or more units	6.5%	58	1.7%	8	4.8%	66
	A mobile, manufactured, or trailer home	0.0%	0	0.0%	0	0.0%	0

		Self-reported participation in current home					
		Did not participate in current home		Participated in current home		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
	Other, please specify:	2.4%	22	2.2%	11	2.3%	32
	Total	100.0%	895	100.0%	494	100.0%	1389
To the best of your knowledge, when was this building first built?	2010 or later	3.0%	22	1.9%	9	2.6%	31
	2000 to 2009	7.3%	54	4.9%	22	6.4%	76
	1990 to 1999	5.2%	39	8.1%	37	6.3%	76
	1980 to 1989	8.1%	59	7.3%	33	7.8%	93
	1970 to 1979	10.2%	75	9.8%	45	10.0%	120
	1960 to 1969	7.4%	54	14.5%	66	10.1%	121
	1950 to 1959	11.2%	82	11.4%	52	11.3%	134
	1940 to 1949	6.8%	50	5.4%	25	6.2%	74
	1930 to 1939	3.6%	26	6.9%	32	4.9%	58
	1900 to 1930	25.1%	185	21.4%	98	23.7%	283
	1800 to 1899	10.9%	80	6.7%	31	9.3%	111
	Before 1800	0.3%	2	0.9%	4	0.5%	6
	Other, please specify:	0.8%	6	0.9%	4	0.9%	10
	Total	100.0%	734	100.0%	458	100.0%	1192
Moved in the last five years	Not moved	83.5%	754	82.6%	415	83.2%	1169
	Moved	16.5%	149	17.4%	87	16.8%	236
	Total	100.0%	903	100.0%	502	100.0%	1405
At least one child in household	No Child(ren) at home	71.1%	642	71.1%	357	71.1%	999
	Child(ren) at home	28.9%	261	28.9%	145	28.9%	406
	Total	100.0%	903	100.0%	502	100.0%	1405
Single parent household	Not single-parent household	95.4%	843	95.3%	476	95.4%	1319
	Single parent household	4.6%	40	4.7%	23	4.6%	64
	Total	100.0%	883	100.0%	499	100.0%	1382
At least one member of household fully retired	Not retired	70.2%	627	61.9%	306	67.3%	933
	Retired	29.8%	266	38.1%	188	32.7%	454
	Total	100.0%	892	100.0%	495	100.0%	1387
At least one household member has difficulty functioning due to a physical, mental, or emotional condition	Not disabled	90.2%	815	83.6%	420	87.8%	1235
	Disabled	9.8%	88	16.4%	83	12.2%	171
	Total	100.0%	903	100.0%	502	100.0%	1405

Table 41. Mean Self-Reported Participation in Current Home

Self-reported participation in current home	Mean	N	Std. Deviation
Did not participate in current home	2.53	890	1.512
Participated in current home	2.60	497	1.281
Total	2.56	1386	1.434

Table 42. Income and College

		Self-reported participation in current home					
		Did not participate in current home		Participated in current home		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Income category	Low income	42.3%	357	28.1%	134	37.2%	491
	Moderate income	12.8%	108	13.8%	66	13.1%	173
	Higher than moderate income	44.9%	380	58.1%	277	49.7%	656
	Total	100.0%	845	100.0%	476	100.0%	1321
Level of respondent education	Less than high school	6.8%	59	2.3%	11	5.2%	70
	High school graduate or equivalent (e.g., GED)	23.0%	201	15.3%	73	20.3%	274
	Attended some college, but didn't get a degree	15.6%	137	15.7%	75	15.6%	211
	Associate degree	10.1%	88	7.4%	36	9.2%	124
	Bachelor's degree	22.1%	193	29.1%	139	24.6%	332
	Master's degree	14.5%	127	22.2%	106	17.2%	233
	Professional degree	3.3%	29	3.4%	16	3.3%	45
	Doctorate degree	4.2%	37	4.5%	21	4.3%	58
	Other	0.3%	3	0.2%	1	0.3%	3
	Total	100.0%	874	100.0%	478	100.0%	1351
Respondent is a college graduate	No college	45.7%	400	33.4%	160	41.4%	559
	College	54.3%	474	66.6%	318	58.6%	792
	Total	100.0%	874	100.0%	478	100.0%	1351

Table 43. Languages spoken in home

		Self-reported participation in current home					
		Did not participate in current home		Participated in current home		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Speak languages other than English at home	Yes	26.5%	240	18.1%	91	23.5%	331
	No	73.5%	664	81.9%	411	76.5%	1075
	Total	100.0%	903	100.0%	502	100.0%	1405
Languages spoken at home besides English	Only Spanish	32.1%	77	24.3%	22	29.9%	99
	Only Portuguese	19.5%	47	22.9%	21	20.4%	67
	Only Chinese	4.1%	10	2.1%	2	3.6%	12
	Only French	5.3%	13	3.2%	3	4.7%	16
	Only Vietnamese	2.6%	6	4.0%	4	3.0%	10
	Only Russian	2.9%	7	1.7%	2	2.6%	9
	Only Arabic	0.5%	1	0.0%	0	0.3%	1
	Only Italian	3.7%	9	8.8%	8	5.1%	17
	Only Other	15.2%	36	16.4%	15	15.5%	51
	Spanish and Portuguese	1.6%	4	6.6%	6	2.9%	10
	Spanish and French	0.3%	1	1.7%	2	0.7%	2
	Two languages	10.3%	25	8.4%	8	9.8%	32

		Self-reported participation in current home					
		Did not participate in current home		Participated in current home		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
	Three languages	0.2%	1	0.0%	0	0.2%	1
	Four languages	1.7%	4	0.0%	0	1.2%	4
	Total	100.0%	240	100.0%	91	100.0%	331
How well do you speak English?	Very well	61.9%	186	78.1%	89	66.4%	274
	Well	19.7%	59	11.2%	13	17.4%	72
	Not well	12.1%	36	6.5%	7	10.5%	43
	Not at all	6.3%	19	4.2%	5	5.8%	24
	Total	100.0%	300	100.0%	114	100.0%	414
Of those who speak another language, how well speak English	Speak English well or very well	81.6%	245	89.3%	102	83.7%	346
	Speak English not at all or not well	18.4%	55	10.7%	12	16.3%	67
	Total	100.0%	300	100.0%	114	100.0%	414

C.3.2 Awareness, Participation, and Barriers to Participation

Table 44. Heard of Mass Save and/or Awareness of Energy Services Offered through CAP Agency / LEAN

		Self-reported participation in current home					
		Did not participate in current home		Participated in current home		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Before today, have you heard of Mass Save?	Yes	56.7%	511	98.2%	492	71.6%	1004
	No	43.3%	390	1.8%	9	28.4%	399
	Total	100.0%	901	100.0%	501	100.0%	1402
Before today, were you aware that energy saving programs and services are available to income qualifying households through CAP agencies or LEAN?	Yes	24.9%	110	48.9%	133	34.0%	243
	No	75.1%	333	51.1%	139	66.0%	472
	Total	100.0%	443	100.0%	272	100.0%	715
Respondent indicated aware of Mass Save and/or CAP Agency / LEAN services	Aware	59.8%	539	100.0%	501	74.2%	1040
	Not aware	40.2%	362	0.0%	0	25.8%	362
	Total	100.0%	901	100.0%	501	100.0%	1402

Table 45. Of Households Categorized Low Income, Heard of Mass Save and/or Awareness of Energy Services Offered through CAP Agency / LEAN

		Self-reported participation in current home					
		Did not participate in current home		Participated in current home		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Before today, have you heard of Mass Save?	Yes	41.5%	148	93.4%	124	55.6%	272
	No	58.5%	208	6.6%	9	44.4%	217
	Total	100.0%	356	100.0%	133	100.0%	488
Before today, were you aware that energy saving programs and services are available to income qualifying households through CAP agencies or LEAN?	Yes	18.0%	29	58.0%	42	30.4%	71
	No	82.0%	133	42.0%	30	69.6%	163
	Total	100.0%	162	100.0%	72	100.0%	234
Respondent indicated aware of Mass Save and/or CAP Agency / LEAN services	Aware	45.3%	161	100.0%	133	60.2%	294
	Not aware	54.7%	195	0.0%	0	39.8%	195
	Total	100.0%	356	100.0%	133	100.0%	488

Table 46. Of Household Categorized Moderate Income, Heard of Mass Save and/or Awareness of Energy Services Offered through CAP Agency / LEAN

		Self-reported participation in current home					
		Did not participate in current home		Participated in current home		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Before today, have you heard of Mass Save?	Yes	60.2%	65	100.0%	66	75.2%	130
	No	39.8%	43	0.0%	0	24.8%	43
	Total	100.0%	108	100.0%	66	100.0%	173
Before today, were you aware that energy saving programs and services are available to income qualifying households through CAP agencies or LEAN?	Yes	22.9%	14	40.2%	16	29.6%	30
	No	77.1%	48	59.8%	24	70.4%	72
	Total	100.0%	62	100.0%	40	100.0%	102
Respondent indicated aware of Mass Save and/or CAP Agency / LEAN services	Aware	62.4%	67	100.0%	66	76.6%	133
	Not aware	37.6%	41	0.0%	0	23.4%	41
	Total	100.0%	108	100.0%	66	100.0%	173

Table 47. Awareness of Specific Mass Save Offerings (web/phone only)

		Self-reported participation in current home					
		Did not participate in current home		Participated in current home		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Which of the following programs are you aware of?	Home Energy Assessment/Audit	83.7%	193	92.5%	247	88.4%	440
	Appliance Rebates	54.4%	126	68.7%	183	62.1%	309
	Appliance Recycling	28.2%	65	35.5%	95	32.1%	160
	Lighting Discounts	42.7%	99	58.7%	157	51.3%	255
	Heating or Water Heating Rebates	37.5%	87	59.0%	157	49.0%	244
	Cooling Rebates	24.7%	57	44.7%	119	35.4%	176
	Insulation / Weatherization Incentives	51.6%	119	71.0%	189	62.0%	309
	New Construction Incentives	13.5%	31	7.5%	20	10.3%	51
	Renovation or Home Addition Incentives	18.4%	42	10.0%	27	13.9%	69
	HEAT Loan Financing	20.8%	48	30.2%	81	25.8%	129
	Other	3.0%	7	1.4%	4	2.1%	11
	None of these offerings	6.7%	15	2.2%	6	4.3%	21
	Total	100.0%	231	100.0%	267	100.0%	498

Table 48. Source of Mass Save Awareness (web/phone survey only)

		Self-reported participation in current home					
		Did not participate in current home		Participated in current home		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
How did you learn about the offerings?	I got something in the mail	55.0%	109	52.9%	100	53.9%	209
	Through an energy bill insert	25.8%	51	31.5%	60	28.6%	111
	I got an email	10.6%	21	8.8%	17	9.7%	38
	Through talking to a contractor	5.2%	10	9.4%	18	7.2%	28
	Mass Save or other websites, including the LEAN multifamily program website	11.1%	22	24.1%	46	17.4%	68
	Through a phone call	5.7%	11	8.9%	17	7.3%	28
	Through a Community Action Program agency	6.9%	14	8.6%	16	7.7%	30

		Self-reported participation in current home					
		Did not participate in current home		Participated in current home		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
	Through another community or neighborhood organization	7.0%	14	7.4%	14	7.2%	28
	Through a newspaper or magazine ad	6.7%	13	4.1%	8	5.5%	21
	Through a radio ad	8.5%	17	2.4%	4	5.5%	21
	Saw on billboards on highways, side streets, trains, or buses	8.7%	17	3.5%	7	6.1%	24
	Social media (Twitter, Facebook, etc.)	8.0%	16	5.0%	10	6.5%	25
	From a friend or family member	33.3%	66	28.3%	54	30.8%	119
	Through a community event	1.9%	4	4.8%	9	3.4%	13
	Other	4.6%	9	10.0%	19	7.2%	28
	Total	100.0%	198	100.0%	190	100.0%	387

Table 49. When Participated in Mass Save in Current Home

		Self-reported participation in current home					
		Did not participate in current home		Participated in current home		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Length of time since participation	Within two years	22.6%	3	45.7%	226	45.2%	228
	2-5 years ago	19.6%	2	29.6%	146	29.3%	148
	6-10 years ago	30.8%	4	15.0%	74	15.4%	78
	More than 10 years ago	27.0%	3	8.5%	42	9.0%	45
	I don't know	0.0%	0	1.1%	5	1.1%	5
	Total	100.0%	12	100.0%	494	100.0%	506

Table 50. Programs Participated in Current Home (web/phone only)

		Self-reported participation in current home					
		Did not participate in current home		Participated in current home		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Which of the following offerings did you participated in at current home (web/phone only)?	Home Energy Assessment/Audit	71.8%	1	67.6%	167	67.6%	168
	Appliance Rebates	71.8%	1	18.7%	46	19.0%	47
	Appliance Recycling	71.8%	1	11.7%	29	12.1%	30
	Lighting Discounts	71.8%	1	27.9%	69	28.2%	70
	Heating or Water Heating Rebates	71.8%	1	14.7%	36	15.0%	37
	Cooling Rebates	71.8%	1	7.4%	18	7.8%	19
	Insulation / Weatherization Incentives	71.8%	1	36.8%	91	37.0%	92
	New Construction Incentives	0.0%	0	0.9%	2	0.9%	2
	Renovation or Home Addition Incentives	0.0%	0	1.7%	4	1.7%	4
	HEAT Loan Financing	0.0%	0	11.1%	27	11.0%	27
	Free equipment / services through CAP Agency or LEAN	0.0%	0	11.3%	28	11.2%	28
	Other	0.0%	0	6.1%	15	6.1%	15
	None of these offerings	28.2%	0	8.1%	20	8.2%	20
	Total	100.0%	1	100.0%	248	100.0%	249

Table 51. Likelihood to Participate in Next Five Years (web/phone only)

		Self-reported participation in current home					
		Did not participate in current home		Participated in current home		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Likelihood to participate in the next five years	Very unlikely	13.7%	49	7.2%	18	11.0%	67
	Somewhat unlikely	6.4%	23	8.5%	21	7.2%	44
	Neither likely nor unlikely	19.9%	72	10.3%	26	15.9%	97
	Somewhat likely	38.1%	137	31.3%	79	35.3%	216
	Very likely	21.9%	79	42.8%	108	30.5%	187
	Total	100.0%	360	100.0%	252	100.0%	612

C.3.3 Expenses and Assistance, Trust, and Concerns and Attitudes

Table 52. Expenses and Renter Responsibility for Paying Energy Bills (web/phone only)

		Self-reported participation in current home					
		Did not participate in current home		Participated in current home		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Feeling about ability to meet expenses	I am easily able to pay for all expenses	31.0%	128	40.5%	111	34.8%	240
	It is tight, but I can pay for all expenses	43.6%	181	41.8%	115	42.9%	296
	Each month, I'm not sure if I will be able to pay for all expenses	12.9%	53	10.3%	28	11.9%	82
	I am not able to pay for all expenses some months	7.3%	30	4.0%	11	6.0%	41
	I am not able to pay for all expenses most or all months	5.2%	22	3.4%	9	4.5%	31
	Total	100.0%	414	100.0%	275	100.0%	689
Renter responsible for paying electric bill?	Yes	96.1%	191	93.0%	46	95.5%	237
	No	3.2%	6	7.0%	3	4.0%	10
	Don't know	0.7%	1	0.0%	0	0.5%	1
	Total	100.0%	199	100.0%	49	100.0%	249
Renter responsible for paying natural gas bill?	Yes	67.4%	134	87.1%	43	71.3%	177
	No	9.9%	20	7.9%	4	9.5%	24
	Don't know	3.9%	8	0.0%	0	3.1%	8
	Do not have	18.8%	37	5.0%	2	16.0%	40
	Total	100.0%	199	100.0%	49	100.0%	249

Table 53. Indicate Participated an Assistance Program (SSI, Government Assistance, Assistance for Energy Bills, Food Stamps, MassHealth, and/or National School Food Program)

		Self-reported participation in current home					
		Did not participate in current home		Participated in current home		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Participated in at least one assistance program	Did not participate in social program	67.7%	612	74.3%	373	70.1%	985
	Participated in social program	32.3%	292	25.7%	129	29.9%	421
	Total	100.0%	903	100.0%	502	100.0%	1405

Table 54. Ranked in Top Three of Most Trustworthy to Get Information Energy Saving Offerings (web/phone only)

		Self-reported participation in current home					
		Did not participate in current home		Participated in current home		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Indicated in top three of most trustworthy source to get information about energy savings	Contractor	36.3%	150	40.2%	109	37.8%	259
	Local government	44.2%	183	41.9%	114	43.3%	297
	State government	43.6%	180	35.9%	98	40.5%	278
	Local utility	50.7%	210	53.1%	144	51.7%	354
	Neighbor, relative, or friend	58.8%	243	55.4%	151	57.5%	394
	Place of worship	13.1%	54	10.5%	29	12.1%	83
	Community Action Program agency	35.8%	148	35.3%	96	35.6%	244
	Other community or neighborhood organization	17.5%	72	18.3%	50	17.8%	122
	Other source (specified)	8.9%	37	9.4%	26	9.1%	63
	None	1.6%	6	1.3%	3	1.4%	10
	Total	100.0%	413	100.0%	272	100.0%	685

Table 55. Concerns and Attitudes About Energy Costs and Use (web/phone only)

		Self-reported participation in current home					
		Did not participate in current home		Participated in current home		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
I worry whether there is enough money to pay my energy bill	Do not agree	22.5%	94	19.6%	54	21.4%	148
	2	10.0%	42	10.7%	30	10.3%	71
	3	17.8%	75	11.0%	30	15.1%	105
	4	14.9%	63	18.5%	51	16.4%	114
	Completely agree	34.7%	145	40.1%	110	36.9%	256
	Total	100.0%	419	100.0%	275	100.0%	694

		Self-reported participation in current home					
		Did not participate in current home		Participated in current home		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
I worry that the cost of energy to run my home will increase	Do not agree	40.0%	167	40.0%	110	40.0%	277
	2	17.4%	72	22.8%	63	19.5%	135
	3	18.6%	78	15.9%	44	17.5%	121
	4	8.2%	34	7.1%	19	7.7%	54
	Completely agree	15.9%	66	14.3%	39	15.3%	106
	Total	100.0%	417	100.0%	275	100.0%	692
I feel guilty if I use too much energy	Do not agree	25.6%	107	25.5%	70	25.5%	177
	2	19.3%	80	22.8%	63	20.7%	143
	3	29.3%	122	26.7%	74	28.3%	196
	4	9.4%	39	9.8%	27	9.6%	66
	Completely agree	16.4%	68	15.2%	42	15.9%	110
	Total	100.0%	417	100.0%	275	100.0%	692
I tend to take the lead in my household to keep bills down	Do not agree	48.4%	202	54.6%	150	50.9%	352
	2	16.1%	67	18.6%	51	17.1%	118
	3	15.8%	66	14.7%	40	15.3%	106
	4	4.9%	21	1.0%	3	3.4%	23
	Completely agree	14.8%	62	11.2%	31	13.4%	92
	Total	100.0%	416	100.0%	275	100.0%	691
If my utility bill goes up, I feel like I must do something to reduce it	Do not agree	40.1%	168	31.7%	87	36.7%	255
	2	17.5%	73	26.4%	72	21.1%	146
	3	18.3%	77	24.5%	67	20.8%	144
	4	8.9%	37	5.8%	16	7.7%	53
	Completely agree	15.1%	63	11.6%	32	13.7%	95
	Total	100.0%	419	100.0%	274	100.0%	693
I often pay more for products that are environmentally friendly	Do not agree	17.3%	73	24.3%	67	20.1%	139
	2	21.9%	92	22.9%	63	22.3%	155
	3	33.5%	140	29.4%	81	31.9%	221
	4	11.8%	49	11.8%	33	11.8%	82
	Completely agree	15.4%	65	11.5%	32	13.9%	96
	Total	100.0%	419	100.0%	275	100.0%	694
I intend to conserve gas or electricity consumption in my home this winter	Do not agree	39.6%	166	50.1%	137	43.8%	303
	2	22.9%	96	20.4%	56	21.9%	152
	3	16.1%	67	13.1%	36	14.9%	103
	4	6.0%	25	6.7%	18	6.3%	44
	Completely agree	15.4%	64	9.7%	26	13.1%	91
	Total	100.0%	419	100.0%	274	100.0%	692
I know what actions to take to reduce my energy use	Do not agree	24.0%	100	31.6%	86	27.0%	186
	2	22.6%	94	33.5%	92	26.9%	186
	3	26.7%	111	16.9%	46	22.8%	157
	4	14.9%	62	10.5%	29	13.2%	91
	Completely agree	11.8%	49	7.6%	21	10.1%	70
	Total	100.0%	416	100.0%	274	100.0%	690

		Self-reported participation in current home					
		Did not participate in current home		Participated in current home		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Paying my energy bill is priority, before things like food or clothing	Do not agree	18.0%	75	16.9%	45	17.6%	120
	2	16.9%	70	19.2%	52	17.8%	122
	3	32.4%	134	30.6%	82	31.7%	216
	4	10.8%	45	14.9%	40	12.4%	85
	Completely agree	21.8%	90	18.5%	50	20.5%	140
	Total	100.0%	414	100.0%	268	100.0%	682

Table 56. Mean Concerns and Attitudes About Energy Costs and Use (web/phone only)

Self-reported participation in current home		I worry whether there is enough money to pay my energy bill	I worry that the cost of energy to run my home will increase	I feel guilty if I use too much energy	I tend to take the lead in my household to keep bills down	If my utility bill goes up, I feel like I must do something to reduce it	I often pay more for products that are environmentally friendly	I intend to conserve gas or electricity consumption in my home this winter	I know what actions to take to reduce my energy use	Paying my energy bill is priority, before things like food or clothing
Did not participate in current home	Mean	3.29	2.43	2.72	2.22	2.42	2.86	2.35	2.68	3.01
	N	419	417	417	416	419	419	419	416	414
	Std. Deviation	1.568	1.472	1.375	1.460	1.461	1.278	1.438	1.306	1.369
Participated in current home	Mean	3.49	2.33	2.66	1.96	2.39	2.63	2.05	2.29	2.99
	N	275	275	275	275	274	275	274	274	268
	Std. Deviation	1.566	1.423	1.359	1.320	1.300	1.285	1.332	1.227	1.327
Total	Mean	3.37	2.39	2.70	2.11	2.41	2.77	2.23	2.52	3.00
	N	694	692	692	691	693	694	692	690	682
	Std. Deviation	1.569	1.453	1.368	1.411	1.399	1.285	1.403	1.289	1.352

C.4 Tables by Demographics of Interest (Income, Housing Type, Other Language Spoken)

C.4.1 Awareness, Participation, and Barriers to Participation

Table 57. Heard of Mass Save and/or Awareness of Energy Services Offered through CAP Agency / LEAN by Income

		Income category							
		Low income		Moderate income		Higher than moderate income		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Before today, have you heard of Mass Save?	Yes	59.9%	330	78.3%	155	84.8%	625	74.7%	1111
	No	40.1%	221	21.7%	43	15.2%	112	25.3%	377
	Total	100.0%	552	100.0%	198	100.0%	738	100.0%	1487
Before today, were you aware that energy saving programs and services are available to income qualifying households through CAP agencies or LEAN?	Yes	26.8%	77	24.3%	30	30.6%	132	28.4%	240
	No	73.2%	210	75.7%	94	69.4%	301	71.6%	605
	Total	100.0%	287	100.0%	124	100.0%	433	100.0%	845
Respondent indicated aware of Mass Save and/or CAP Agency / LEAN services	Aware	64.7%	357	79.5%	158	86.0%	634	77.2%	1149
	Not aware	35.3%	195	20.5%	41	14.0%	103	22.8%	338
	Total	100.0%	552	100.0%	198	100.0%	738	100.0%	1487

Table 58. Heard of Mass Save and/or Awareness of Energy Services Offered through CAP Agency / LEAN by Homeownership

		Own, rent, or rent this location out to others							
		Rent & Occupy		Own & Occupy		Rental property (do not occupy)		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Before today, have you heard of Mass Save?	Yes	50.0%	248	86.3%	882	70.5%	31	74.3%	1160
	No	50.0%	248	13.7%	140	29.5%	13	25.7%	401
	Total	100.0%	496	100.0%	1022	100.0%	44	100.0%	1561
Before today, were you aware that energy saving programs and services are available to income qualifying households through CAP agencies or LEAN?	Yes	24.1%	76	31.9%	166	19.2%	7	28.6%	249
	No	75.9%	240	68.1%	355	80.8%	28	71.4%	622
	Total	100.0%	316	100.0%	522	100.0%	34	100.0%	871
Respondent indicated aware of Mass Save and/or CAP Agency / LEAN services	Aware	55.6%	276	87.3%	892	77.3%	34	77.0%	1202
	Not aware	44.4%	220	12.7%	130	22.7%	10	23.0%	360
	Total	100.0%	496	100.0%	1022	100.0%	44	100.0%	1561

Table 59. Heard of Mass Save and/or Awareness of Energy Services Offered through CAP Agency / LEAN by Other Language

		Speak languages other than English at home					
		Yes		No		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Before today, have you heard of Mass Save?	Yes	60.9%	225	78.5%	946	74.4%	1172
	No	39.1%	145	21.5%	258	25.6%	403
	Total	100.0%	370	100.0%	1205	100.0%	1575
Before today, were you aware that energy saving programs and services are available to income qualifying households through CAP agencies or LEAN?	Yes	23.9%	53	30.2%	196	28.6%	249
	No	76.1%	169	69.8%	454	71.4%	622
	Total	100.0%	222	100.0%	650	100.0%	871
Respondent indicated aware of Mass Save and/or CAP Agency / LEAN services	Aware	65.5%	243	80.5%	970	77.0%	1213
	Not aware	34.5%	128	19.5%	235	23.0%	362
	Total	100.0%	370	100.0%	1205	100.0%	1575

Table 60. Participated in Mass Save (per Tracking Data or Self-report) by Income

		Income category							
		Low income		Moderate income		Higher than moderate income		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Tracking Data Participation Flag	Nonparticipant	65.2%	362	65.3%	129	58.7%	434	62.0%	925
	Participant	34.8%	193	34.7%	69	41.3%	306	38.0%	568
	Total	100.0%	555	100.0%	198	100.0%	740	100.0%	1493
Self-reported participation in current home	Did not participate in current home	72.8%	357	62.2%	108	57.8%	380	64.0%	845
	Participated in current home	27.2%	134	37.8%	66	42.2%	277	36.0%	476
	Total	100.0%	491	100.0%	173	100.0%	656	100.0%	1321

Table 61. Participated in Mass Save (per Tracking Data or Self-report) by Homeownership

		Own, rent, or rent this location out to others							
		Rent & Occupy		Own & Occupy		Rental property (do not occupy)		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Tracking Data Participation Flag	Nonparticipant	70.2%	349	59.8%	619	38.3%	17	62.5%	985
	Participant	29.8%	148	40.2%	417	61.7%	27	37.5%	591
	Total	100.0%	497	100.0%	1036	100.0%	44	100.0%	1576
Self-reported participation in current home	Did not participate in current home	83.2%	371	55.1%	503	72.9%	24	64.6%	898
	Participated in current home	16.8%	75	44.9%	409	27.1%	9	35.4%	493
	Total	100.0%	446	100.0%	913	100.0%	33	100.0%	1391

Table 62. Participated in Mass Save (per Tracking Data or Self-report) by Other Language

		Speak languages other than English at home					
		Yes		No		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Tracking Data Participation Flag	Nonparticipant	67.9%	252	60.6%	740	62.3%	992
	Participant	32.1%	119	39.4%	482	37.7%	601
	Total	100.0%	371	100.0%	1222	100.0%	1593
Self-reported participation in current home	Did not participate in current home	72.4%	240	61.8%	664	64.3%	903
	Participated in current home	27.6%	91	38.2%	411	35.7%	502
	Total	100.0%	331	100.0%	1075	100.0%	1405

Table 63. Likelihood to Participate in Next Five Years by Income (web/phone only)

		Income category							
		Low income		Moderate income		Higher than moderate income		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Likelihood to participate in the next five years	Very unlikely	3.7%	8	9.1%	10	14.4%	56	10.2%	74
	Somewhat unlikely	3.1%	7	5.7%	6	8.4%	32	6.3%	46
	Neither likely nor unlikely	13.1%	30	20.4%	21	18.0%	70	16.8%	121
	Somewhat likely	35.2%	80	41.5%	44	34.1%	132	35.5%	256
	Very likely	44.9%	102	23.3%	24	25.1%	97	31.1%	224
	Total	100.0%	227	100.0%	105	100.0%	388	100.0%	720

Table 64. Likelihood to Participate in Next Five Years by Homeownership (web/phone only)

		Own, rent, or rent this location out to others							
		Rent & Occupy		Own & Occupy		Rental property (do not occupy)		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Likelihood to participate in the next five years	Very unlikely	11.5%	30	9.4%	43	19.6%	6	10.5%	78
	Somewhat unlikely	6.1%	16	6.0%	27	11.4%	3	6.2%	46
	Neither likely nor unlikely	16.9%	44	16.7%	76	9.8%	3	16.5%	122
	Somewhat likely	36.6%	95	35.3%	160	38.0%	11	35.8%	265
	Very likely	29.0%	75	32.6%	148	21.1%	6	30.9%	229
	Total	100.0%	259	100.0%	453	100.0%	28	100.0%	740

Table 65. Likelihood to Participate in Next Five Years by Speak Other Language (web/phone only)

		Speak languages other than English at home					
		Yes		No		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Likelihood to participate in the next five years	Very unlikely	6.6%	10	11.5%	67	10.5%	78
	Somewhat unlikely	6.4%	10	6.2%	36	6.2%	46
	Neither likely nor unlikely	16.9%	26	16.4%	96	16.5%	122
	Somewhat likely	30.3%	47	37.3%	218	35.8%	265
	Very likely	39.8%	62	28.5%	166	30.9%	229
	Total	100.0%	156	100.0%	583	100.0%	740

Table 66. Indicate Participated an Assistance Program by Income

		Income category							
		Low income		Moderate income		Higher than moderate income		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Participated in at least one assistance program	Did not participate in social program	35.1%	195	78.9%	156	91.2%	674	68.7%	1025
	Participated in social program	64.9%	361	21.1%	42	8.8%	65	31.3%	468
	Total	100.0%	555	100.0%	198	100.0%	740	100.0%	1493

Table 67. Indicate Participated an Assistance Program by Homeownership

		Own, rent, or rent this location out to others							
		Rent & Occupy		Own & Occupy		Rental property (do not occupy)		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Participated in at least one assistance program	Did not participate in social program	48.3%	240	79.6%	824	61.9%	27	69.2%	1091
	Participated in social program	51.7%	257	20.4%	212	38.1%	17	30.8%	485
	Total	100.0%	497	100.0%	1036	100.0%	44	100.0%	1576

Table 68. Indicate Participated an Assistance Program by Speak Other Language

		Speak languages other than English at home					
		Yes		No		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Participated in at least one assistance program	Did not participate in social program	60.0%	223	72.2%	882	69.3%	1104
	Participated in social program	40.0%	149	27.8%	340	30.7%	489
	Total	100.0%	371	100.0%	1222	100.0%	1593

C.4.2 Expenses and Assistance, Trust, and Concerns and Attitudes

Table 69. Ranked in Top Three of Most Trustworthy to Get Information Energy Saving Offerings by Income (web/phone only)

		Income category							
		Low income		Moderate income		Higher than moderate income		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Indicated in top three of most trustworthy source to get information about energy savings	Contractor	26.6%	66	36.3%	46	45.1%	197	38.1%	309
	Local government	35.3%	88	43.8%	55	46.8%	204	42.8%	347
	State government	35.6%	89	40.8%	51	40.4%	176	39.0%	316
	Local utility	46.6%	116	49.2%	62	53.1%	232	50.5%	409
	Neighbor, relative, or friend	54.4%	135	63.6%	80	59.2%	258	58.4%	473
	Place of worship	24.3%	60	10.3%	13	8.5%	37	13.6%	110
	Community Action Program agency	50.5%	126	32.2%	40	30.6%	134	37.0%	300
	Other community or neighborhood organization	30.6%	76	15.2%	19	11.8%	51	18.1%	146
	Other source (specified)	7.9%	20	10.3%	13	8.5%	37	8.6%	70
	None	2.8%	7	0.0%	0	1.8%	8	1.8%	14
	Total	100.0%	249	100.0%	125	100.0%	436	100.0%	810

Table 70. Ranked in Top Three of Most Trustworthy to Get Information Energy Saving Offerings by Homeownership (web/phone only)

		Own, rent, or rent this location out to others							
		Rent & Occupy		Own & Occupy		Rental property (do not occupy)		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Indicated in top three of most trustworthy source to get information about energy savings	Contractor	25.8%	76	44.3%	225	33.7%	10	37.4%	311
	Local government	45.9%	136	39.8%	202	52.9%	15	42.4%	353
	State government	41.2%	122	37.0%	187	47.9%	14	38.9%	323
	Local utility	46.1%	136	52.8%	268	52.0%	15	50.4%	419
	Neighbor, relative, or friend	57.6%	170	59.6%	302	50.6%	15	58.6%	487
	Place of worship	16.0%	47	12.7%	64	3.2%	1	13.5%	112
	Community Action Program agency	42.6%	126	33.0%	167	37.8%	11	36.6%	304
	Other community or neighborhood organization	25.4%	75	13.9%	71	13.4%	4	18.0%	150
	Other source (specified)	7.5%	22	9.3%	47	5.2%	2	8.5%	71
	None	2.2%	6	1.9%	10	0.0%	0	1.9%	16
	Total	100.0%	295	100.0%	507	100.0%	29	100.0%	831

**Table 71. Ranked in Top Three of Most Trustworthy to Get Information About Energy Saving Offerings
by Speakers of Other Languages (web/phone only)**

		Speak languages other than English at home					
		Yes		No		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Indicated in top three of most trustworthy source to get information about energy savings	Contractor	33.8%	59	38.3%	251	37.4%	311
	Local government	49.2%	86	40.6%	267	42.4%	353
	State government	52.6%	92	35.2%	231	38.9%	323
	Local utility	48.4%	85	50.9%	334	50.4%	419
	Neighbor, relative, or friend	51.0%	89	60.6%	398	58.6%	487
	Place of worship	20.1%	35	11.7%	77	13.5%	112
	Community Action Program agency	39.4%	69	35.8%	235	36.6%	304
	Other community or neighborhood organization	21.6%	38	17.0%	112	18.0%	150
	Other source (specified)	7.4%	13	8.8%	58	8.5%	71
	None	2.6%	5	1.7%	11	1.9%	16
	Total	100.0%	175	100.0%	656	100.0%	831

**Table 72. Ranked in Top Three of Most Trustworthy to Get Information Energy Saving Offerings
by English Proficiency (web/phone only)**

		Of those who speak another language, how well speak English					
		Speak English well or very well		Speak English not at all or not well		Total	
		Percent	Responses (n)	Percent	Responses (n)	Percent	Responses (n)
Indicated in top three of most trustworthy source to get information about energy savings	Contractor	34.5%	54	27.9%	7	33.6%	61
	Local government	49.8%	78	40.6%	10	48.5%	88
	State government	53.9%	85	43.0%	10	52.4%	95
	Local utility	51.1%	80	35.4%	9	49.0%	89
	Neighbor, relative, or friend	53.0%	83	37.8%	9	51.0%	92
	Place of worship	19.3%	30	20.4%	5	19.4%	35
	Community Action Program agency	41.1%	65	26.0%	6	39.1%	71
	Other community or neighborhood organization	20.9%	33	28.1%	7	21.8%	40
	Other source (specified)	8.4%	13	0.0%	0	7.3%	13
	None	3.6%	6	0.0%	0	3.1%	6
	Total	100.0%	157	100.0%	24	100.0%	181