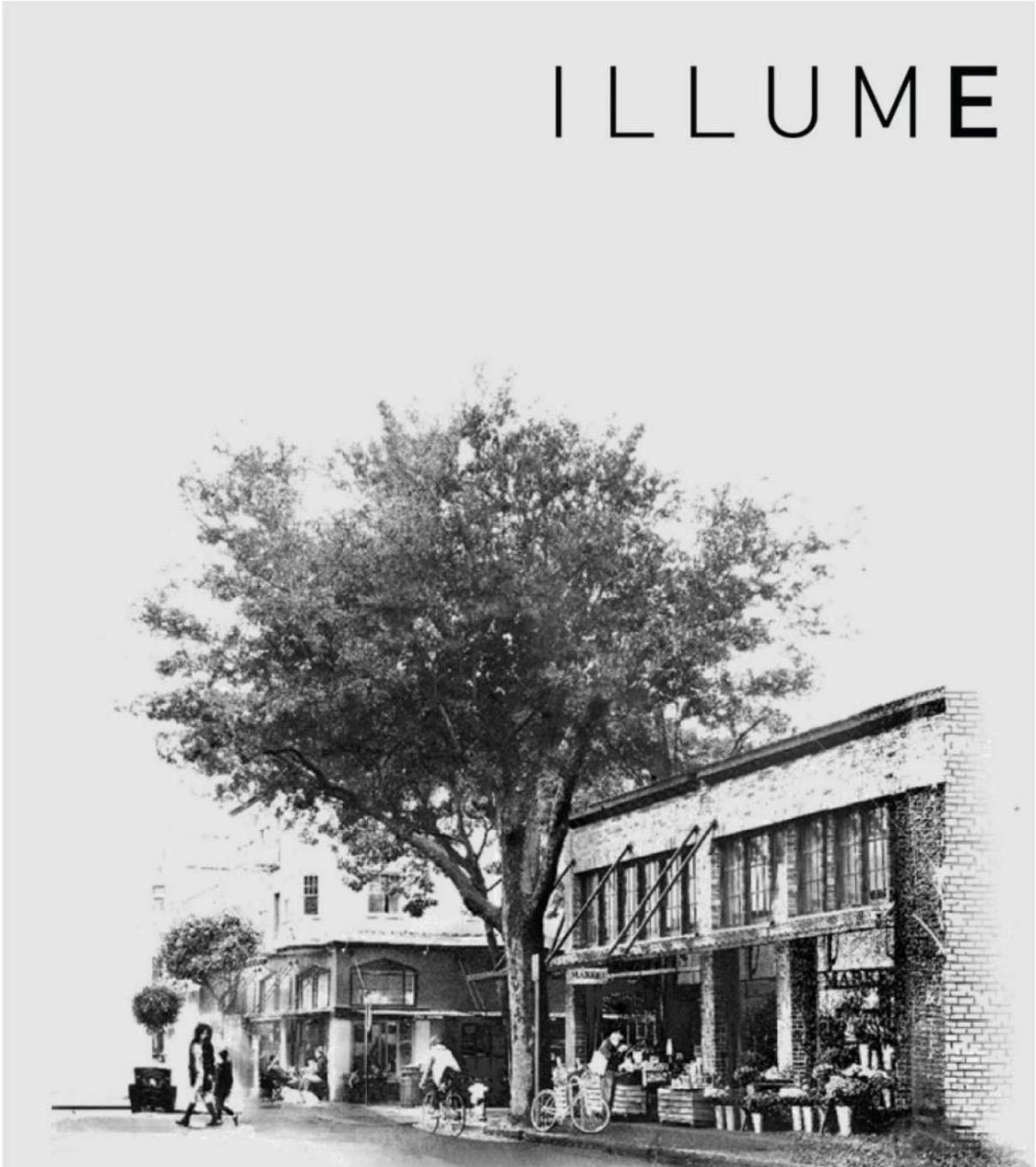


ILLUME



PROJECT:

Massachusetts Statewide
Residential and
Commercial 2018
Awareness Survey

PROJECT SPONSOR:

Electric and Gas Program
Administrators of
Massachusetts

*IN PARTNERSHIP
WITH: Ewald and
Wasserman Research
Associates*

ACKNOWLEDGMENTS

ILLUME Advising, LLC is a forward-thinking consulting company at the rare intersection of insight and execution. Founded in 2013 by industry through-leaders Anne Dougherty and Sara Conzemius, the company has quickly grown to include a deep bench of quantitative and qualitative research experts. ILLUME uses cutting-edge research strategies to help build a resilient energy future to enrich lives, improve global health, and ensure a more secure and sustainable future.

For this effort, we would like to acknowledge, first and foremost, **the Massachusetts Program Administrators**. We would also like to recognize the dedicated work of **Ewald and Wasserman Research Consultants**.

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EXECUTIVE SUMMARY

OVERVIEW

ILLUME Advising (the research team) was hired by the Massachusetts Program Administrators (“the PAs”) to conduct a statewide marketing survey of residential and commercial customers to assess the PA marketing campaign called Mass Save®. The following report presents the findings and recommendations resulting from the statewide marketing surveys.



Over the past seven years, the PAs have implemented the Mass Save campaign, serving as a statewide umbrella marketing campaign for the PA energy efficiency programs. Prior to 2017, the state’s evaluation efforts focused on tracking Mass Save brand awareness over time, capturing increases in residential customer awareness from 39% in 2012 to 64% in 2017; from 33% in 2012 to 73% in 2017.

The statewide marketing team launched a new website, MassSave.com, in mid-2017. The current marketing survey was fielded from December 2017 to February 2018.



RESEARCH METHODS & OBJECTIVES

THE GOALS

The goals of the current study were to:

1. Conduct an ongoing assessment of customer awareness of the Mass Save brand;
2. Gather feedback on the new MassSave.com website; and
3. Assess whether customers mentally link Mass Save to its funding PAs.

SURVEY OVERVIEW

Primary data collection included a general population survey of residential customers with a response rate of 21% as well as C&I customers with a response rate of 9%.



569

Response rate of 21%

RESIDENTIAL



232

Response rate of 9%

C&I



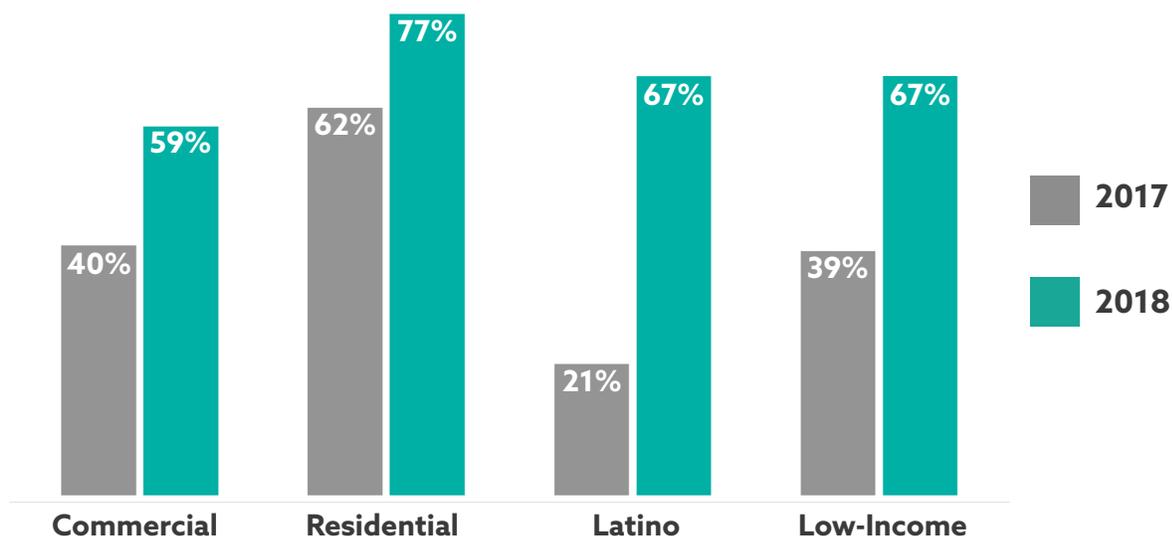
OVERALL STORY

Findings across most survey metrics indicate a continued upward trend of Mass Save awareness, familiarity, and participation in programs.

Outreach to Spanish-speaking (studied here as Latinos) and low-income groups appear to be working well, with higher-year-over-year increases in website awareness than the overall MA population. The website awareness increase—a 15% increase for residential and 19% increase for C&I—represented the largest year-over-year increase in website awareness since beginning this longitudinal study in 2012.

A sizable number of customers reported visiting the website in the six months between website redesign and our survey fielding. While not a majority of customers, the fact that about 40% visited an energy efficiency website in six months suggests a high degree of engagement with Mass Save. While customers gave similar usefulness ratings, whether they visited the website prior to or after the redesign, a survey designed for phone and web modes—without use of many visuals to help with recall—may not be the ideal method to assess receptiveness to the redesign.

Awareness of MassSave.com

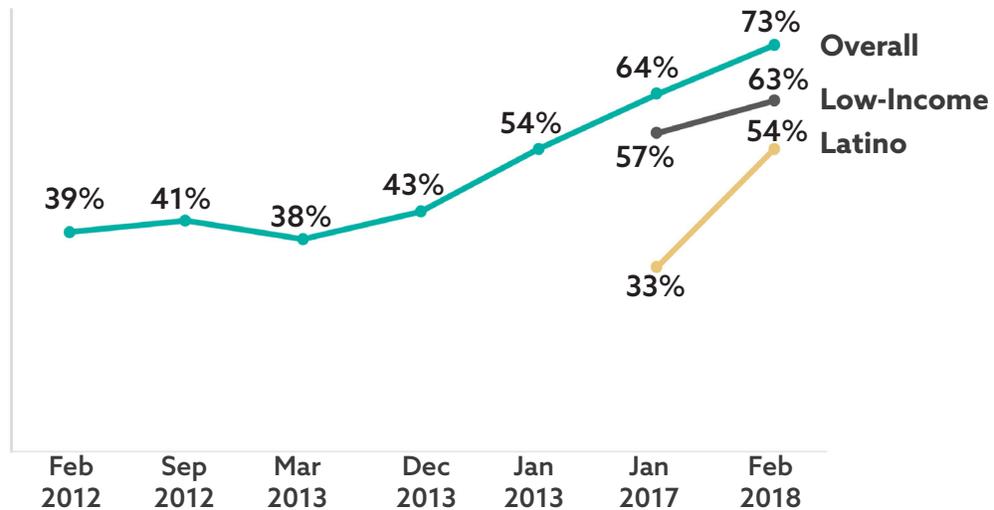


RESIDENTIAL SPECIFIC FINDINGS

OVERALL

Continued upward trend in awareness that we have seen year over year since tracking began in 2012.

Awareness of Mass Save



The majority (95%) view Mass Save favorably.

Latinos and low-income customers are more likely to call their PA for information, compared to the MA general population. However, they are also less likely to use the MassSave.com website.



Q

What do you most associate with Mass Save?

A

"Helping to reduce energy consumption through upgrades of the home like light bulbs, insulation, and shower heads."
- Residential Customer

RESIDENTIAL-SPECIFIC FINDINGS

170 telephone interviews | **399** web-based interviews

WEBSITE

More residential customers are now aware of MassSave.com (77% in 2018 compared to 62% in 2017).

Low-income and Latino customers use different ways to get information on how to lower their energy bill.

PARTICIPATION

Most respondents (69%) reported being aware of programs to help them save energy in their homes.

Of customers aware of programs, 29% are aware of having participated in a program. Most commonly, customers participate in the home energy assessment program.

AWARENESS

Awareness of Mass Save is high (73%) and increased from 2017.

Awareness of Mass Save has increased for both the low-income (63%) and Latino (54%) customer segments.

MESSAGING

The majority of residential customers who are aware of Mass Save associate the brand with energy (85%).

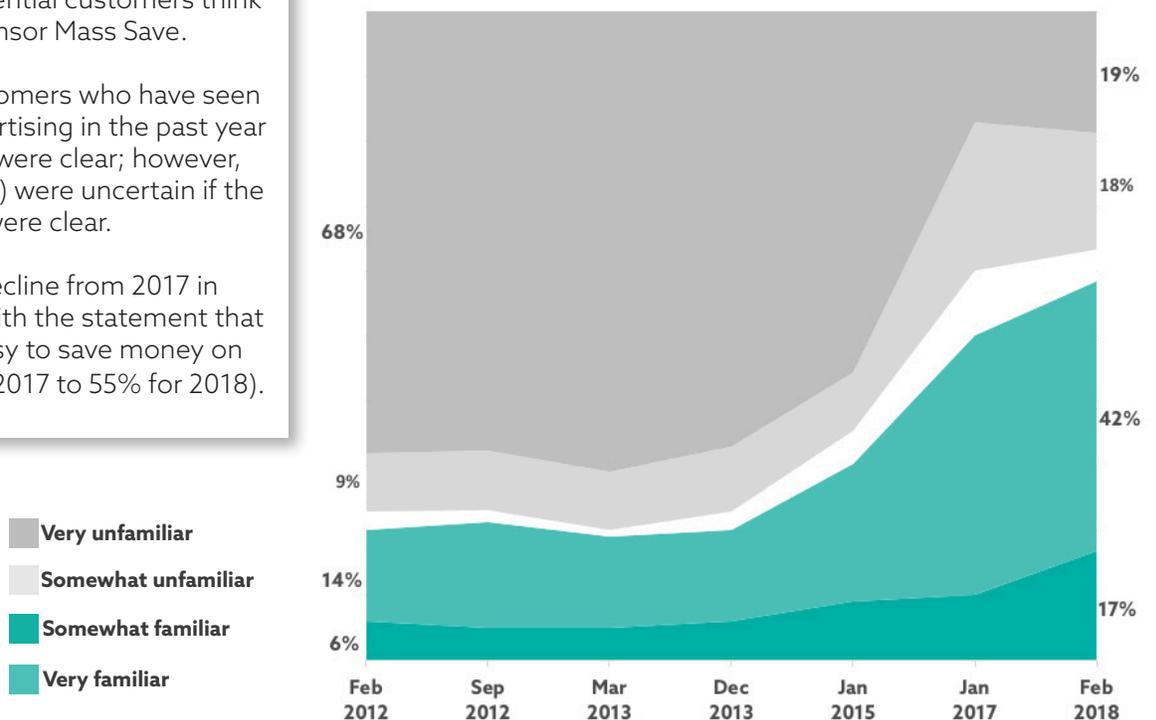
Over half (54%) of residential customers think that their PAs sponsor Mass Save.

Sixty-six percent of customers who have seen or heard Mass Save advertising in the past year believe the messages were clear; however, nearly one-quarter (24%) were uncertain if the messages were clear.

There was a slight decline from 2017 in respondents agreeing with the statement that Mass Save makes it easy to save money on your energy bill (63% in 2017 to 55% for 2018).

Familiarity with MassSave.com continues to rise

for those who are aware of Mass Save from 2012-2018





129 telephone interviews

103 web-based interviews



COMMERCIAL-INDUSTRIAL SPECIFIC FINDINGS

WEBSITE

Over half of aware C&I respondents (59%) reported knowledge of MassSave.com, and 40% of these customers reported visiting the website since June 2017.

C&I customers look to a variety of sources for information on energy efficiency, like Google searches (26%), their utility or service provider (24%), and MassSave.com (17%).

Most C&I customers that have visited the website find it useful (69% give it a usefulness rating of 7 to 10 on a 0-10 scale).

PARTICIPATION

Over half of C&I respondents are aware that there are programs to help their businesses save energy (57%), over half of those respondents are aware of having participated in such programs (53%).

Customers are most likely to be aware of, and participate in, incentives for energy efficient lighting.

AWARENESS

C&I customer awareness of Mass Save is high (higher than the residential group).

Eighty-one percent of C&I customers reported seeing or hearing the term *"Mass Save."*

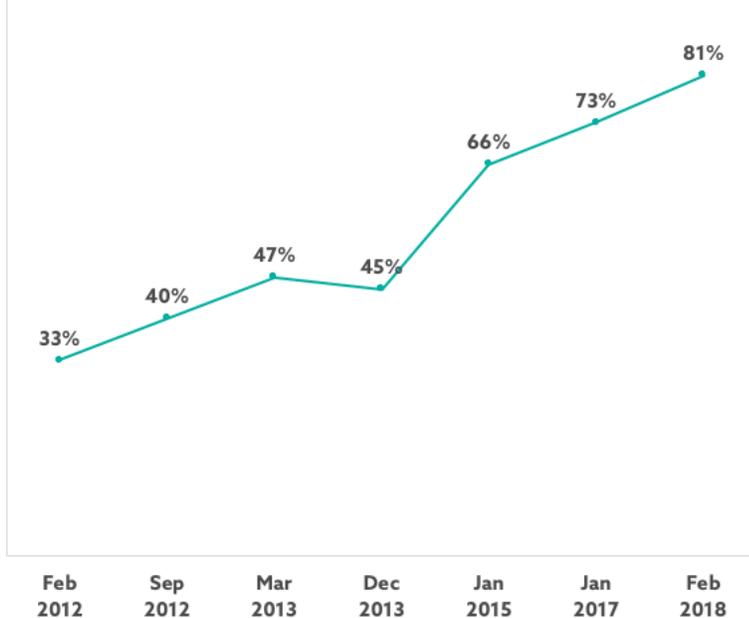
CROSS POLLINATION

C&I customers appear to understand messages that Mass Save is for their businesses (and homes). Most associate Mass Save with energy assessments; we don't know if these customers are referring to the business or home assessment programs.

This finding may indicate that there is some cross-pollination across the residential and C&I sectors.

COMMERCIAL-INDUSTRIAL SPECIFIC FINDINGS

Overall Awareness of Mass Save



OVERALL

**Highest level
of Mass Save
awareness among
C&I customers
since tracking
began**

MESSAGING

C&I customers are exposed to all Mass Save outreach channels and appear to understand messaging, including that Mass Save offers solutions for businesses and is associated with energy.

Over half of respondents (54%) believe Mass Save offers solutions for both their home and business.

Eighty-seven percent of C&I respondents familiar with Mass Save associate it with energy.

Eighty-five percent of C&I respondents that have seen or heard Mass Save messaging believe those messages were clear.

Forty-five percent of C&I customers aware of Mass Save first learned of it through their utility.

C&I respondents associate Mass Save most commonly with energy assessments, ways to obtain information to lower energy bills, and lighting programs.

Survey responses indicate C&I customers have high Mass Save brand awareness (87%) and high awareness of commercial energy efficiency programs (57%), yet C&I customers may not associate Mass Save with these programs. Among C&I customers, 42% state that their utilities and service providers offer efficiency programs. A total of 18% state Mass Save offers these programs.

**These findings indicate a
potential opportunity for
enhanced messaging to
drive customers to
MassSave.com**

1. INTRODUCTION

This section provides an overview of the 2017 Mass Save® campaign and a description of key survey research activities.

2017 CAMPAIGN OVERVIEW

During 2017, the Massachusetts energy efficiency Program Administrators (PAs) implemented the seventh year of a statewide marketing campaign called Mass Save. The primary objective of the Mass Save campaign is to increase residential and commercial customer awareness of energy efficiency programs and solutions, offered jointly by the Massachusetts PAs, and to drive customers to the Mass Save website.

The 2017 Mass Save campaign ran from January through November 2017. The 2017 campaign, like the 2016 campaign, targeted specific residential customer segments, including low-income customers and Spanish and Portuguese-speaking customers, to increase awareness among these groups. The campaign also targeted outreach to commercial and industrial (C&I) customers. Messaging for both residential and C&I customers focused on the ease with which customers can save money and energy.

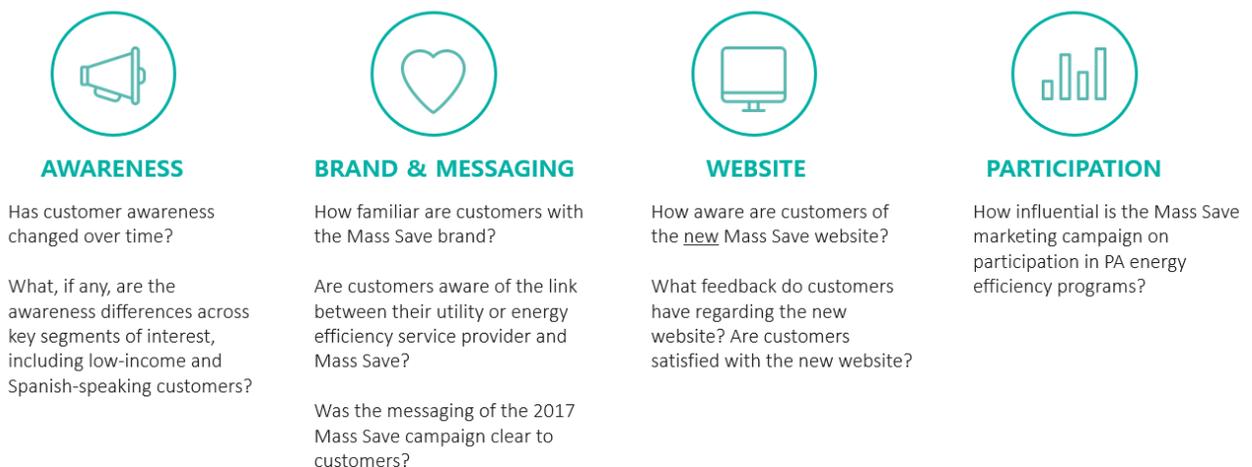
Like recent campaign years, the 2017 campaign used a mix of digital, radio, out-of-home, and print channels to reach customers across the residential and C&I sectors. Within each media channel, PAs used several tactics to reach customers. To reach Spanish and Portuguese-speaking customers, the PAs translated select media pieces into Spanish and Portuguese. The campaign also placed radio and out-of-home media in specific geographic areas to reach low-income customers.

RESEARCH OBJECTIVES AND ACTIVITIES

To support the Mass Save campaign, the research team fielded general population surveys of residential and C&I customers using a mixed-mode approach that included both telephone and web-based surveys. The overarching objective of these statewide surveys was to assess customer awareness of the Mass Save brand. The key research questions are summarized in Figure 1 below.

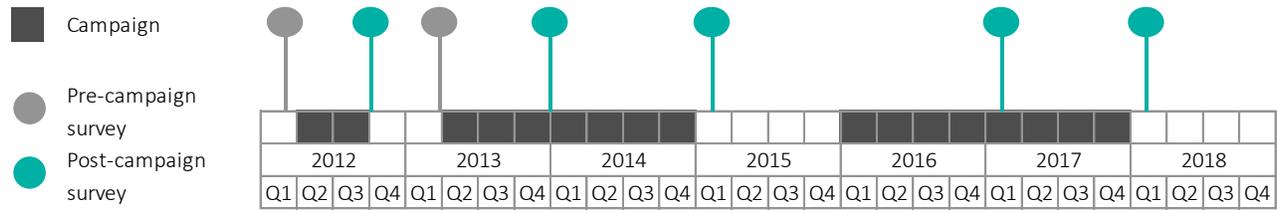
The research team fielded surveys in January and February 2018. In total, 569 residential and 232 C&I customers completed surveys. This survey effort constitutes the seventh wave in a series of surveys conducted since February

FIGURE 1: KEY RESEARCH QUESTIONS



2012. Figure 2 shows the timing of Mass Save campaigns and surveys from 2012 to 2018. Appendix A provides an overview of the Mass Save marketing campaign, including a review of campaign objectives across time.

FIGURE 2: MASS SAVE CAMPAIGN AND SURVEY EFFORTS FROM 2012 TO 2018



To provide insight and background to our analysis, the ILLUME team also reviewed 2017 statewide marketing materials, including Mass Save’s 2017 Media Plan, 2017 creative marketing materials, and the Mass Save website.

2. RESEARCH METHODS

To address the research objectives defined in Section 1, the research team conducted general population surveys of residential and C&I customers, both of which were fielded between January–February 2018. We provide a high-level overview of our research methods in this section. We provide a more detailed description of our methods in Appendix B.

RESIDENTIAL SURVEY METHODS

The design goals for the residential survey were to:

- Gauge brand and website awareness across the general MA population;
- Measure customers' knowledge of who sponsors Mass Save;
- Test whether customers who visited the redesigned website were more satisfied with it;
- Assess differences in these three metrics across time; and
- Assess differences in these three metrics by populations of interest (low-income customers, and Spanish speakers).

To meet these goals and ensure valid longitudinal comparisons with prior survey data, the research team adapted the 2016 survey designed by Opinion Dynamics (ODC) and attempted to mirror ODC's sampling strategy. Consistent with prior survey efforts, we fielded the survey in English and Spanish and covered key topics to assess awareness of the Mass Save brand. Since Mass Save redesigned their website in June 2017, we developed additional survey questions to identify possible changes in website satisfaction and behaviors taken as a result.

SAMPLING STRATEGY

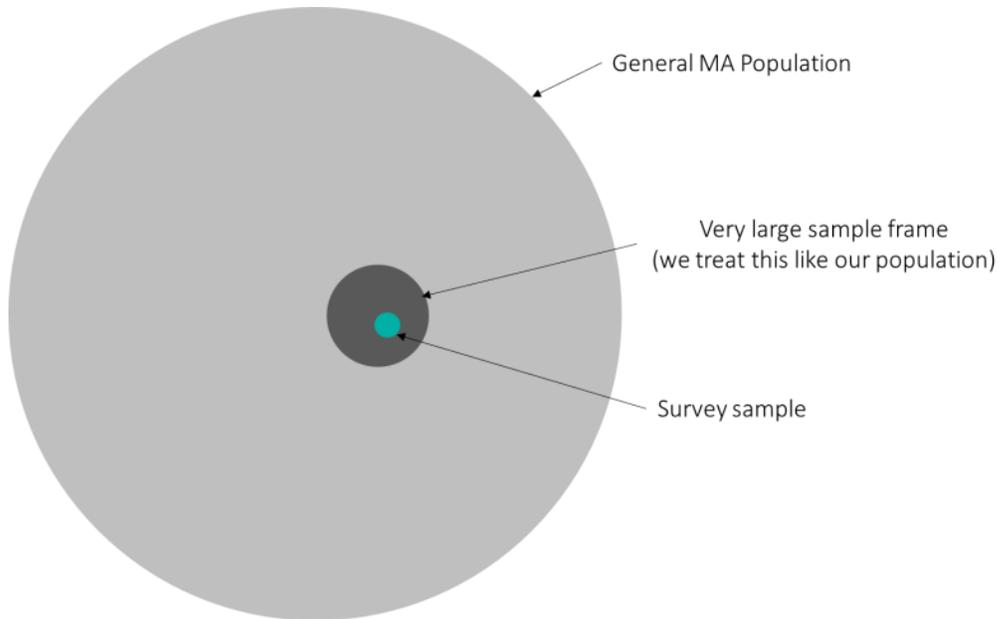
Beginning in 2017, MA evaluation contractors no longer had access to full residential population data. While we were able to imitate the sampling steps used in prior surveys, this shift in data access made it impossible for our team to verify the matched data to the full population data, as had been done in prior years. We described how we adjusted for this in the following sections.

ESTIMATING THE MASSACHUSETTS POPULATION

Since we could not use the full population data as a check to ensure we had a representative survey sample, we asked DNV-GL, the new data warehouse managers, for a very large random data pull from the 2017 population data—a total sample frame of 30,000 customers. Using the law of large numbers,¹ we assumed there would be no difference between these 30,000 customers and the general population of MA customers. This allowed us to use the large sample frame as our population reference for our weighting schemes. Figure 3 shows a visual schematic of this approach.

¹ Ross, Sheldon (2009). A first course in probability (8th ed.). Prentice Hall press. ISBN 978-0-13-603313-4.

FIGURE 3: RESIDENTIAL POPULATION AND SAMPLE FRAME SCHEMATIC



DNV-GL pulled the large sample by proportionally sampling by PA and by low-income customers. Since we use the large sample frame as our population reference, we refer to this as our population frame. To ensure a high response rate and avoid response bias, we pulled a smaller sample frame from this population frame to field our survey.

To identify customers who potentially speak Spanish, we used a list of 1,500 last names associated with Hispanic respondents from the 2010 U.S. Census. We searched the population frame, using this list, and flagged customers associated with these last names for our Spanish-speaking strata. To identify low-income customers, we asked DNV-GL to flag all customers on income qualified rates. We then oversampled both low-income and Hispanic customers to ensure we obtained sufficient data from each group of interest in our analysis.

WEIGHTING STRATEGY

Since the research team oversampled the Latino and low-income populations, we developed three separate weighting schemes to reflect the MA general population:

- **General Population.** These weights allow for estimates that reflect the general MA population.
- **Income Comparison.** These weights allow for comparisons between income-qualified customers (low-income) and standard-income customers.
- **Latino Comparison.** These weights allow for comparisons between Latino and non-Latino customers. These estimates are meant to approximate, using known data, the Spanish-speaking population in MA.

We calculated weights as follows:²

² As noted earlier, we used the population frame to estimate these weights, and as such, there is a potential measurement error that we cannot observe or correct for.

% of population frame / % of survey respondents

Table 1 presents our estimated weights for each of the weighting schemes.

TABLE 1. RESIDENTIAL SURVEY WEIGHTS

		POPULATION FRAME		SURVEY RESPONDENTS		WEIGHT
		n	%	n	%	
GENERAL POPULATION WEIGHTS						
Standard-income	Non-Latino	24,704	83%	355	62%	1.34
	Latino	1,253	4%	65	11%	0.37
Low-income	Non-Latino	3,014	10%	96	17%	0.6
	Latino	636	2%	53	9%	0.23
INCOME COMPARISON WEIGHTS						
Standard-income	Non-Latino	24,704	95%	355	85%	1.13
	Latino	1,253	5%	65	15%	0.31
Low-income	Non-Latino	3,014	83%	96	64%	1.28
	Latino	636	17%	53	36%	0.49
LATINO COMPARISON WEIGHTS						
Standard-income	Non-Latino	24,704	89%	355	79%	1.13
	Latino	1,253	66%	65	55%	1.2
Low-income	Non-Latino	3,014	11%	96	21%	0.51
	Latino	636	34%	53	45%	0.75

FIELDING METHODOLOGY

In line with the 2016 survey methodology, we used a mixed-mode approach that included both telephone and web-based surveys, including:

- A mailed invitation letter containing a web address for the survey, a description of the survey, and the potential to win one of twenty-five \$20 gift cards;
- A subsequent email invitation, if customers had email addresses available; and
- Follow-up phone calls for non-responders.

We mailed the invitation letter to 3,411 residential customers and obtained 569 survey completes for a response rate of 21.1%. See Appendix B for details on our sampling approach and fielding outcomes.

C&I SURVEY METHODS

The key goals for the C&I survey were to:

- Gauge brand and website awareness across the C&I MA population;
- Measure customers’ knowledge of who sponsors Mass Save;
- Test whether customers who recently visited the website were more satisfied with it; and
- Assess differences in these three metrics longitudinally.

Like the residential survey, the research team adapted ODC’s 2016 survey and sampling strategy to meet these goals and ensure valid longitudinal comparisons with prior survey data. Also consistent with prior survey efforts, we covered key topics to assess awareness of the Mass Save brand. Since Mass Save redesigned their website in

June 2017, we developed additional survey questions to identify possible changes in website satisfaction and behaviors taken as a result. The research team fielded the full C&I survey from January 17–February 21, 2018, and ultimately, we collected survey data from 232 C&I customers.

ESTIMATING THE MASSACHUSETTS POPULATION

As with the residential data, the research team did not have access to the full PA C&I 2017 customer population data and instead relied on DNV-GL to provide a large simple random sample of 15,000 2017 C&I customers for our population frame. We worked with DNV-GL to identify and exclude managed accounts from the population frame, as well as C&I entries associated with street lights, water pumps, and cell towers.

The ILLUME team then used a random sample of the population frame to survey. Since we used a simple random sample, we did not weight the final survey results.

FIELDING METHODOLOGY

Prior to 2017, all C&I surveys were fielded via telephone. Beginning with the 2017 survey research, we used a mixed-mode approach to conduct the C&I surveys, largely due to declining response rates for telephone-based surveys. Like the residential survey, our approach included:

- A mailed invitation letter containing a web address for the survey, a description of the survey, and the potential to win one of fifteen \$20 gift cards;
- A subsequent email invitation, if customers had email addresses available; and
- Follow-up phone calls for non-responders.

We mailed the invitation letter to 3,464 C&I customers and obtained 232 survey completes for a response rate of 9%. Table 2 shows the number of 2017 respondents according to PA. See Appendix B for details on our sampling approach and fielding outcomes.

TABLE 2. POPULATION FRAME ESTIMATES AND SURVEY COMPLETES BY PA

	POPULATION FRAME		SURVEY COMPLETES		PERCENT DIFFERENCE
	n	%	n	%	
ESTIMATED GAS PA					
Berkshire Gas	1,078	3.7%	9	5.0%	-1.3%
Columbia Gas	5,836	20.1%	26	14.5%	5.5%
Eversource	10,438	35.9%	56	31.3%	4.6%
Liberty Gas	866	3.0%	13	7.3%	-4.3%
NGrid	10,401	35.8%	71	39.7%	-3.9%
Unitil	473	1.6%	4	2.2%	-0.6%
Sub-Total	29,092		179		
<i>No information on Gas PA</i>			53		
<i>Grand total of completes</i>			232		
	POPULATION FRAME		SURVEY COMPLETES		PERCENT DIFFERENCE
	n	%	n	%	
ESTIMATED ELECTRIC PA					
CLC	1,510	6.7%	14	6.3%	0.5%
Eversource	10,747	47.8%	88	39.3%	8.5%
NGrid	9,977	44.4%	116	51.8%	-7.4%
Unitil	243	1.1%	6	2.7%	-1.6%
Sub-Total	22,477		224		
<i>No information on Electric PA</i>			8		
<i>Grand total of completes</i>			232		

ANALYTICAL APPROACH

We analyzed the survey data using appropriate parametric and non-parametric statistics, such as t-tests, Analysis of Variance (ANOVAs), chi-squares and z-tests, for proportion statistics. We also ran several exploratory factor and Chi-Square Automatic Interaction Detector (CHAID) analyses to identify trends in survey responses for both residential and commercial C&I and residential surveys. In the body of this report, we discuss both statistically significant and, where relevant, anecdotal findings.

To ensure valid statistical comparisons, we compared segments of interest to their statistical counterparts; for example, Latinos to non-Latinos, low-income customers to standard-income customers, as well as emergent, segments like those familiar with Mass Save to those who are not. This approach avoids flouting the independence of observations required to statistically assess differences among groups. However, while it is not statistically valid to assess group differences between the general population, Latino, and low-income metrics, in Chapter 3 we highlight Latino, low-income, and general population responses and may not always report non-Latino and standard-income responses. Appendix C provides full frequencies by segments of interest for both the residential and C&I surveys.

3. SURVEY FINDINGS

This chapter describes findings from both the residential and C&I surveys. We structure our survey findings by five major findings.



Residential and C&I customer awareness and familiarity of the Mass Save brand continues to increase.

Low-income and Latino customer awareness of Mass Save, while lower than the general population, increased at a higher rate than the general population from 2016 to 2017.

FINDING 1. BRAND AWARENESS CONTINUES TO INCREASE

Based on the year-over-year increases in awareness metrics, the 2017 Mass Save campaign was among the most successful campaigns since it was first assessed in 2012.

AWARENESS OF MASS SAVE

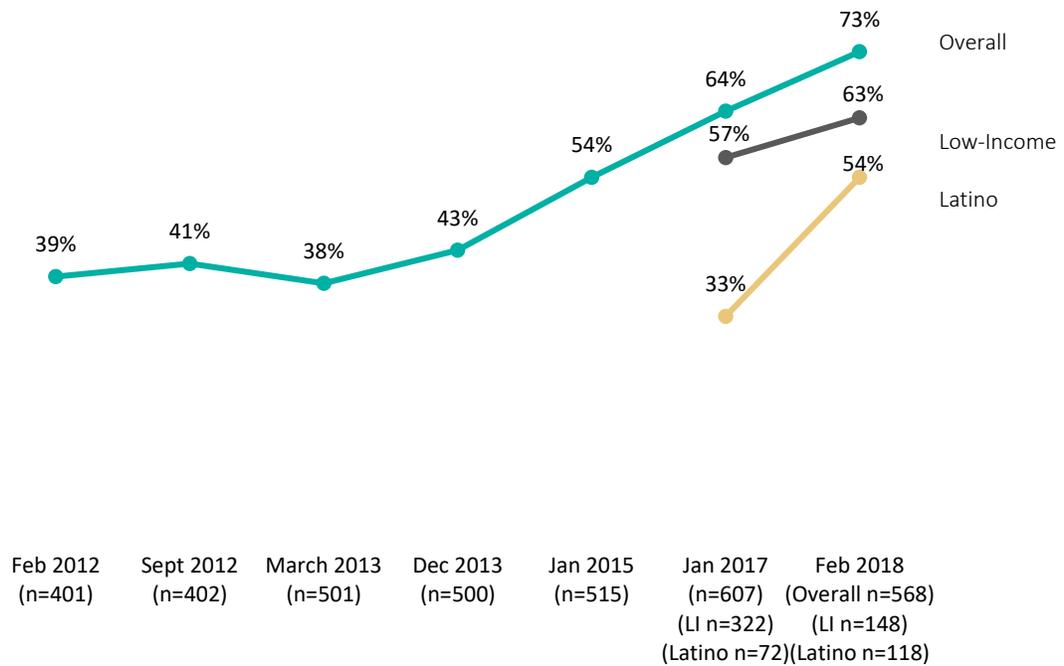
Residential customers. As seen in Figure 4, awareness of the Mass Save brand has continued to increase since 2012, reaching an all-time high this year, with 73% reporting they have seen or heard the term Mass Save.³ This increased nine percentage points from last year (64% in 2017). Further, more than half of residential survey respondents (57%) named Mass Save as an organization that promotes energy efficiency.⁴

Awareness of the Mass Save brand among low-income and Latino populations has increased since the survey began measuring their awareness in January 2017. In 2018, 63% of low-income respondents reported having seen or heard the term Mass Save, compared to 57% in 2017—an increase of 6%. Indicating successful Latino targeting, 54% of Latino respondents reported being aware of the term Mass Save in 2018, compared to 33% in 2017, an increase of 21%. While both Latino and low-income groups reported significantly lower awareness of Mass Save than their counterparts, the increase for Latinos from 2017 to 2018 measurements is marked, considering both groups are often viewed as hard-to-reach customers.

³ Survey question C1: Have you seen or heard the term, “Mass Save?”

⁴ Survey question B1. What organizations are you aware of that promote energy efficiency?

FIGURE 4. RESIDENTIAL AWARENESS OF MASS SAVE (AIDED, NAME ONLY)



In 2017, and in years past, renters consistently reported lower brand awareness than home owners. Our findings suggest a more complex picture of awareness and familiarity for renters and homeowners. Specifically, in the 2018 survey, more renters than homeowners reported having seen or heard about Mass Save (86% and 64% respectively); however, when we asked customers to rate their familiarity with the brand, fewer renters rated they were familiar with the brand than homeowners (46% and 67% respectively).⁵

To investigate whether there were regional differences in awareness, we divided up respondents into four regions, western, central, northeastern, and southeastern, according to respondents' self-reported county of residence. We used the mass.gov homeland security map to identify four main regions of MA. We include the Boston metro area in the northeastern region. Respondents across all regions reported similar levels of brand awareness and familiarity (Table 3).⁶

⁵ We recoded the 5-option Likert familiarity question (C3. How familiar are you with Mass Save?) into 2-options, "familiar" or "not familiar," with Mass Save. Respondents who rated being somewhat familiar or very familiar were coded as "familiar," while respondents who rated either very unfamiliar, somewhat unfamiliar, neither familiar or unfamiliar, or not sure were coded as "not familiar."

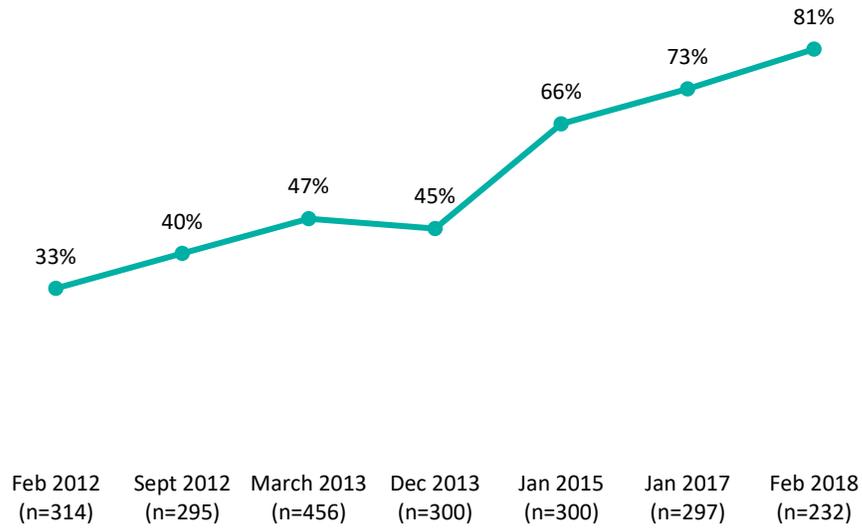
⁶ Both chi-square tests resulted in nonsignificant differences between region and either awareness or familiarity ($p > 0.1$).

TABLE 3. AWARENESS BY REGION

REGION	% AWARE	% FAMILIAR
Western	64%	51%
Central	77%	58%
Northeast	70%	56%
Southeast	67%	68%

C&I customers. As seen in Figure 5, awareness of the Mass Save brand among C&I respondents has continued to increase since 2012, reaching a study high of 81% this year.⁷

FIGURE 5 C&I CUSTOMER AWARENESS OF MASS SAVE (AIDED, NAME ONLY)



Awareness of the Mass Save brand is also high, regardless of business type (Table 4).

⁷ Survey question C1: Have you seen or heard the term, “Mass Save?”

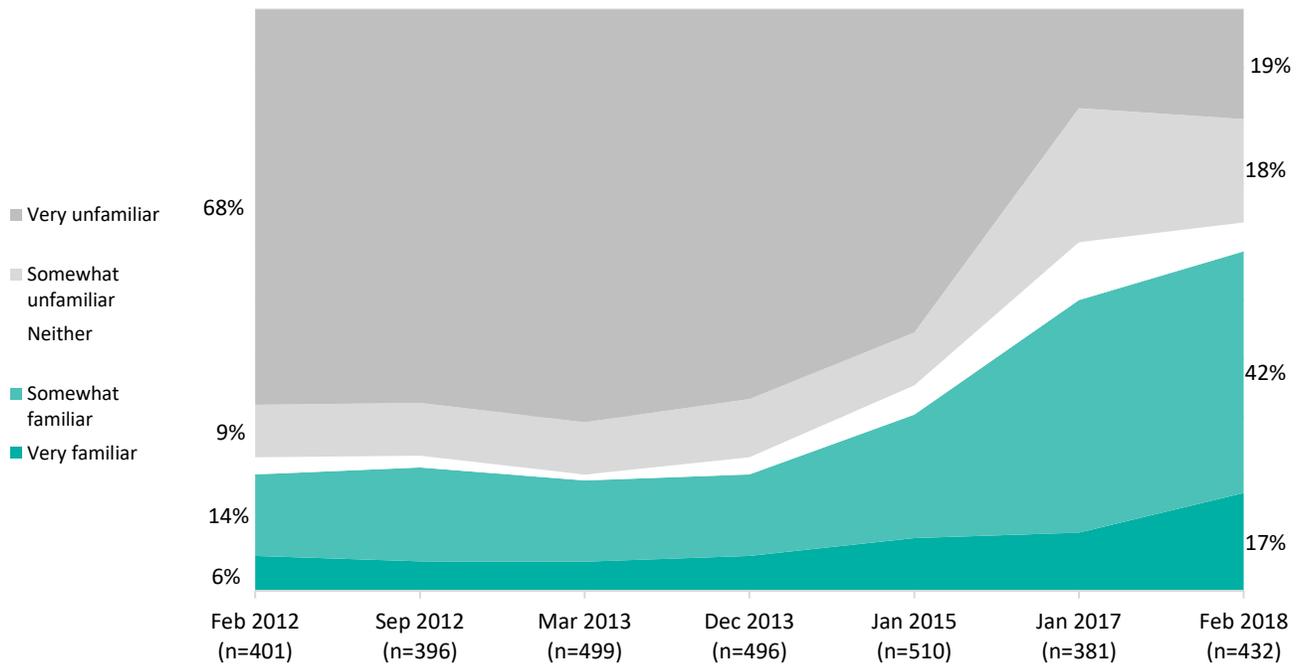
TABLE 4. AWARENESS OF MASS SAVE BY BUSINESS TYPE

BUSINESS TYPE	COUNT	PERCENT
Healthcare or hospital	11	100%
School, gov't, or nonprofit	35	89%
Hospitality or grocery	42	79%
Office or property management	64	78%
Industrial or manufacturing	29	76%
Restaurant or food service	24	75%

FAMILIARITY WITH MASS SAVE

Residential customers. To assess Mass Save brand familiarity, we asked customers aware of Mass Save to rate, “How familiar are you with Mass Save?” Customers were then able to provide a familiarity response, ranging from very unfamiliar to familiar. Mass Save brand familiarity is high among residential respondents who have seen or heard the term Mass Save, and this has increased over time. Overall, 59% of 2018 residential respondents aware of Mass Save reported that they were either somewhat or very familiar with the brand (Figure 6).

FIGURE 6. RESIDENTIAL CUSTOMER FAMILIARITY WITH MASS SAVE

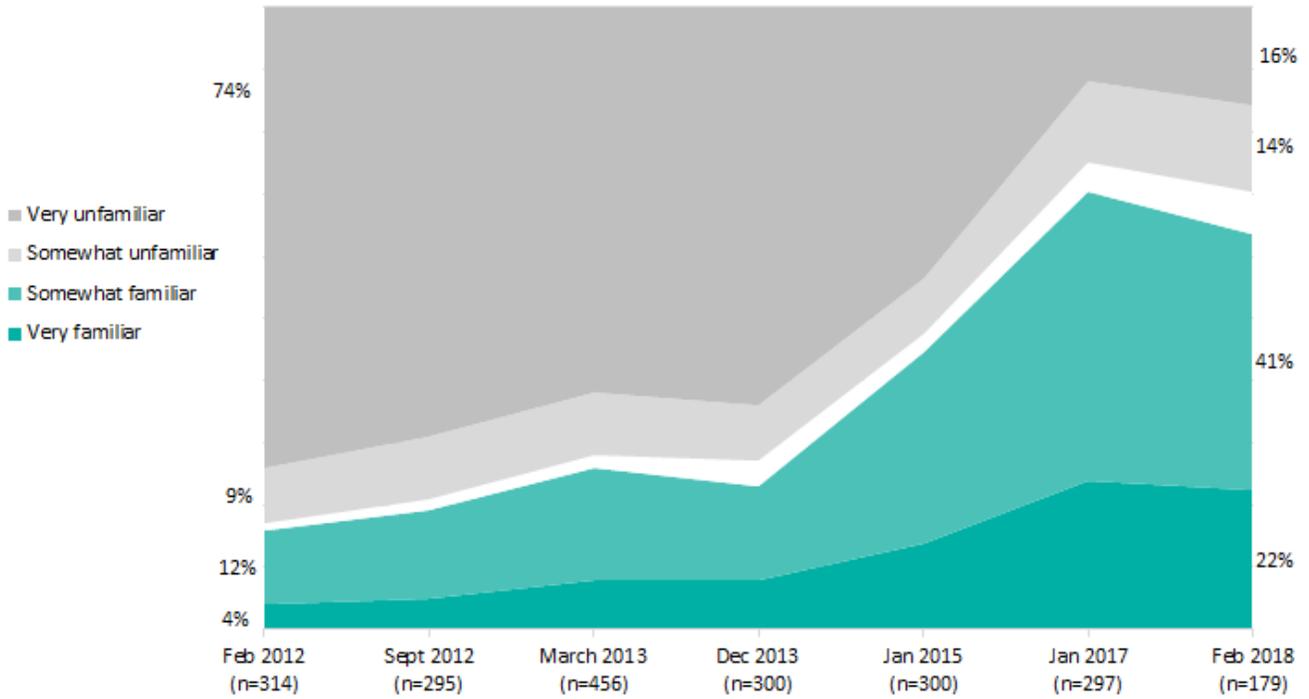


Familiarity with the Mass Save brand is also similar across key residential customer segments, with 54% of low-income respondents and 50% of Latinos rating their familiarity as somewhat or very familiar. These findings suggest that, while low-income and Latino customers may have slightly lower aided awareness of Mass Save, once engaged, they display similar levels of familiarity with Mass Save as general MA customers.⁸

⁸ Statistical comparisons between Latino and non-Latino and Low-income and standard-income were not significant (p>0.1).

C&I customers. Overall, almost two-thirds of 2018 C&I respondents reported they were either somewhat or very familiar with the brand (Figure 7). Fewer C&I customers this year reported they were familiar with Mass Save than in 2017, a drop of eight points, from 71% to 63%. However, familiarity ratings remain high compared to 2015 and earlier. We saw no differences in familiarity ratings by region or industry type. Further, 54% of respondents reported being aware that Mass Save offers both business and home solutions, a similar proportion to prior years.

FIGURE 7. C&I CUSTOMER FAMILIARITY WITH MASS SAVE



FINDING 2. WEBSITE AWARENESS AND USE IS HIGH, INDICATING HIGH ENGAGEMENT WITH WEBSITE



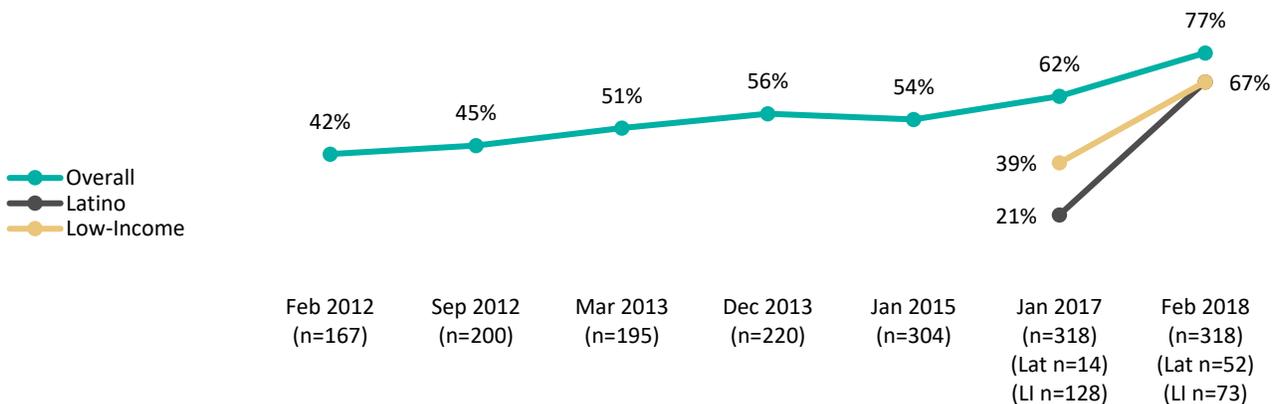
Most customers were aware of the MassSave.com website, and many visited the website since its redesign in June 2017. Overall, customers gave similar ratings of website usefulness and likeliness to recommend the site, whether they had visited the site before or after the redesign.

CUSTOMER AWARENESS OF MASSSAVE.COM

Residential customers. Awareness of the MassSave.com website has increased over time among residential customers who also report that they are aware of the Mass Save brand. This year’s survey saw another consecutive increase in awareness of MassSave.com, from 62% of residential survey respondents in 2017 to 77% of in 2018. This 15% increase represented the largest year-over-year increase in website awareness since beginning this longitudinal study in 2012.

Compared to standard-income respondents, low-income respondents were less aware of MassSave.com (78% vs. 67%, respectively).⁹ Latino respondents were also less aware than non-Latinos (67% vs. 77%), but these differences were not statistically significant.¹⁰ However, while both low-income and Latino respondents reported lower website awareness than their counterparts, awareness for both these groups increased dramatically from 2017 to 2018 (see Figure 8).

FIGURE 8. RESIDENTIAL AWARENESS OF MASSSAVE.COM AMONG THOSE AWARE OF MASS SAVE



C&I customers. Like findings among the residential population, this year’s survey saw another consecutive increase in awareness of MassSave.com from among those aware of Mass Save, from 40% of C&I respondents in 2017 to 59% in 2018. This 19% increase represents the largest year-over-year increase in website awareness since beginning this longitudinal study in 2012.

⁹ Z-test for proportions test was statistically significant difference at the $p < .01$ level.

¹⁰ Z-test for proportions test was not significant ($p = 0.13$).

Awareness of the MassSave.com website varies slightly by business type, with the highest levels of website awareness among healthcare facilities and hospitals.

TABLE 5. AWARENESS OF MASSSAVE.COM BY BUSINESS TYPE

BUSINESS TYPE	COUNT	PERCENT
School, gov't, or nonprofit (n=35)	21	60%
Healthcare or hospital (n=10)	7	70%
Hospitality or grocery (n=41)	23	56%
Industrial or manufacturing (n=29)	18	62%
Office or property management (n=62)	35	56%
Restaurant or food service (n=22)	12	55%

CUSTOMER ENGAGEMENT WITH UPDATED WEBSITE

Massachusetts PAs recently conducted a redesign of MassSave.com in June 2017. To identify potential differences in customer satisfaction with the updated website, we asked residential and C&I customers whether they had visited the website, how many times, and when they had visited. Then we asked them customers to rate the site’s usefulness and their willingness to recommend the site to others.

Residential customers. Indicating a high level of engagement with MassSave.com, 38% of residential customers aware of the website reported having visited the website at least once since its redesign.¹¹ Among those who had visited the updated website, about half (53%) did so one time, while 47% visited more than once since June 2017.

TABLE 6. FREQUENCY OF WEBSITE VISITS SINCE WEBSITE REDESIGN IN JUNE 2017

WEBSITE VISITS	COUNT	PERCENT
None	191	58%
Once	66	20%
2-5 times	55	17%
6-10 times	2	1%
11 or more times	1	0%
Not sure	12	4%

When visiting MassSave.com, customers most often looked for information about rebates, followed by information on energy assessments for their home. Marginally, more low-income customers (25%) reported going onto MassSave.com to look for energy efficiency tips than their standard-income counterparts (Table 7).

TABLE 7. TYPE OF INFORMATION SEARCHED ON WEBSITE

¹¹ There was about six months between the time the website was redesigned, and we fielded the survey.

	OVERALL (n=174)	LOW-INCOME (n=47)	LATINO (n=41)
TYPE OF INFORMATION SEARCHED			
Rebates and incentives for my home	55%	51%	60%
Energy assessments for my home	26%	20%	23%
Energy efficiency tips	15%	25%	11%
Mass Save blog	1%	2%	4%

C&I customers. More than one-third of C&I respondents (41%) had visited the Mass Save website at least once since the redesign in June 2017. Further, over a quarter of C&I customers visited the website more than once in the six months between the website redesign and fielding of this survey (29%). Noting consistent engagement with MassSave.com across time, 45% of respondents reported having visited the website prior to the redesign.

Most C&I respondents (56%) went to the Mass Save website to look for incentives for their business. C&I customers also visited the Mass Save website to look for information on energy efficiency tips (23%) and information on energy assessments for their business (17%).

TABLE 8. TYPES OF INFORMATION SOUGHT FROM MASSSAVE.COM

INFORMATION SOUGHT	COUNT	PERCENT
Rebate and incentives	49	56%
Energy efficiency tips	20	23%
Energy assessments	15	17%
Residential offerings	12	14%
Information in the Mass Save blog	2	2%
Not sure	10	11%
Total	87	

CUSTOMER PERCEPTIONS OF WEBSITE

Residential customers. Most residential customers reported the website was useful (74% provided a rating between seven and ten on a zero-to-ten-point scale, with an average usefulness rating of 7.3 across all respondents, Table 9). Likewise, many respondents reported they were likely to recommend the website to friends and family (68% provided a rating between seven and ten, with an average rating of 7.6). We found little differences in ratings based on the website redesign. Specifically, respondents rated both the usefulness and likelihood to recommend questions similarly, irrespective of whether they visited the website prior to, or after the redesign. The lack of difference in usefulness ratings may not necessarily indicate that customers found the original and redesigned site equally useful. Rather, customers may not have been able to recall and distinguish nuances of the site, particularly for those who visited the original site more than six months before being surveyed.

TABLE 9. RESIDENTIAL CUSTOMER RATINGS OF WEBSITE BY TIME VISITED

WEBSITE RATINGS	VISITED PRIOR TO REDESIGN			VISITED AFTER REDESIGN			ALL WHO VISITED WEBSITE		
	COUNT	AVG. RATING	% RATED 8 TO 10	COUNT	AVG. RATING	% RATED 8 TO 10	COUNT	AVG. RATING	% RATED 8 TO 10
Usefulness of information on website	46	7.4	78%	118	7.3	73%	164	7.3	74%
Likelihood of recommending website to friend or family	50	7.7	66%	124	7.6	69%	174	7.6	68%

C&I customers. Among those C&I customers who had visited the website, most reported that the information on the website was useful (68% provided a rating between seven and ten on a zero-to-ten-point scale, with an average rating of 7.4). About three quarters (74%) of respondents noted they would recommend the website to friends or family (with an average rating of 8.1).

WHEN COMPARING RESPONDENTS WHO VISITED THE WEBSITE POST-REDESIGN TO THOSE WHO VISITED BEFORE, WE SEE INDICATIONS THAT C&I CUSTOMERS VIEWED THE REDESIGN POSITIVELY (Table 10). While not statistically significant, more recent web visitors provided a higher usefulness rating (between seven and ten) than those who had visited before the redesign (71% compared to 61%, with average ratings of 7.5 and 7, respectively).¹² Further, recent web visitors had marginally higher average likelihood to recommend ratings than customers who visited prior to the redesign (8.3 versus 7.4).¹³ Viewed categorically, the proportion of recent-visit-customers with a high likelihood to recommend rating was 9% higher than those who had visited the website prior to the redesign (77% versus 68%).

TABLE 10. COMMERCIAL CUSTOMER RATINGS OF WEBSITE BY TIME VISITED

WEBSITE RATINGS	VISITED PRIOR TO REDESIGN			VISITED AFTER REDESIGN			ALL WHO VISITED WEBSITE		
	COUNT	AVG. RATING	% RATED 8 TO 10	COUNT	AVG. RATING	% RATED 8 TO 10	COUNT	AVG. RATING	% RATED 8 TO 10
Usefulness of information on website	23	7.0	61%	52	7.5	71%	75	7.4	68%
Likelihood of recommending website to friend or family	22	7.4	68%	48	7.6	77%	70	8.3	74%

When asked for recommendations on what to include on the website, some respondents suggested including a deeper breakdown of rebate information. A few noted the information on the website made it seem like applying for rebates was too much work: *“It was informative but didn't grab my interest. They broke down the rebate process and assessment, but it seemed too much work for results.”* Finally, some C&I respondents noted that they were looking for lists of vetted and approved contractors with whom they could work.

SOURCES CUSTOMERS USE TO LEARN ABOUT EFFICIENCY

Residential customers. We asked customers, “If you wanted to know more about how to lower your energy bills, where would you look for information?” Overall, customers most commonly (47% of those aware) cited MassSave.com as a resource, demonstrating that customers look to the website for this type of information. Further, a much higher proportion of respondents this year noted they would go to masssave.com than in prior years (46% compared to 10% in 2017).

¹² Z-test for proportions statistic was nonsignificant at .1 level; however, the sample of respondents who had visited the website prior to the redesign was small (n=23).

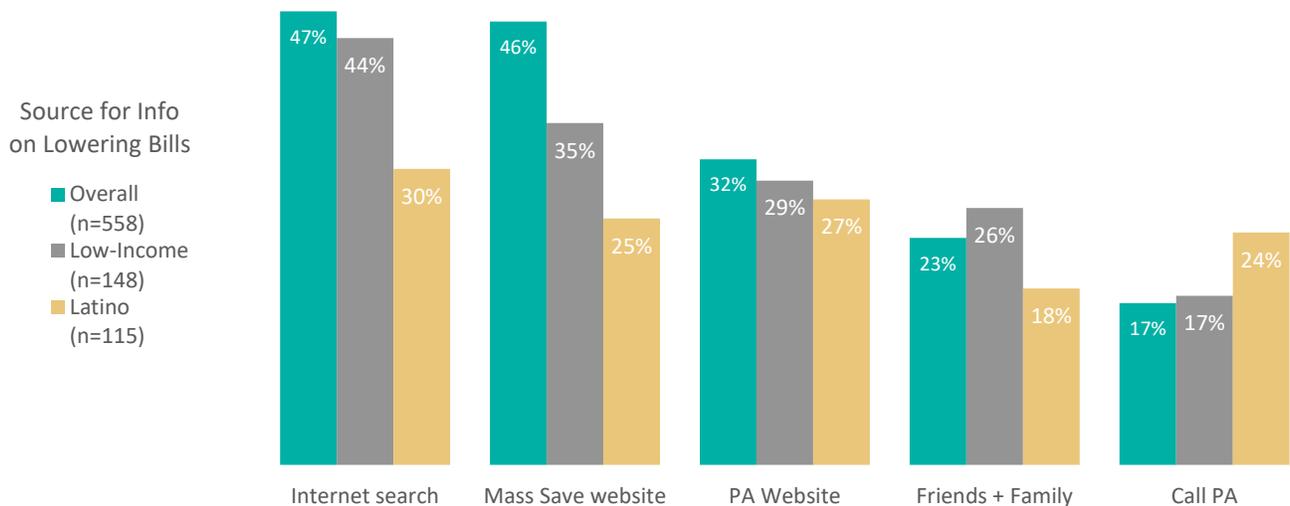
¹³ T-test was marginally significant, with a p-value of 0.06.

TABLE 11. SOURCE OF ENERGY SAVING INFORMATION AMONG RESIDENTIAL CUSTOMERS

INFORMATION SOURCE	COUNT	PERCENT
Internet search	261	47%
MassSave.com	255	46%
PA website	176	32%
Friends or family	130	23%

Our analysis found notable differences in sources customer groups used when looking for information about saving energy (Figure 9). Low-income respondents more commonly opted to use general internet searches to find energy saving information (52%) and less likely to look for energy saving information on the Mass Save website, compared to their standard-income counterparts (35% vs. 48%, respectively)¹⁴. The Latino respondents were also less likely to look for energy saving information on the Mass Save website, compared to their non-Latino counterparts (27% vs. 47%),¹⁵ but more likely to call their PA to obtain energy saving information than non-Latinos (24% and 16%, respectively).¹⁶

FIGURE 9. SOURCE FOR INFORMATION ON LOWERING BILLS (MULT. RESPONSE)



C&I customers. We also asked C&I customers where they go for information about lowering their energy bills. Over a third (36%) noted they would go to their utility to learn how to lower their business’s energy bills. This included utility sources in general, utility websites, and utility 1-800 numbers.

¹⁴ Z-test for proportions was statistically significant at the p<.05 level.
¹⁵ Z-test for proportions was statistically significant at the p<.001 level.
¹⁶ Z-test for proportions was statistically significant at the p<.05 level.

C&I customers continue to be less likely to visit MassSave.com than residential customers to find information on how to reduce energy bills; however, 2018 showed 16% of C&I customers looking to MassSave.com—an increase of 8% over January 2017.

TABLE 12. C&I CUSTOMER SOURCES FOR ENERGY SAVING INFORMATION

INFORMATION SOURCE	COUNT	PERCENT
Utility Reference	84	38%
Non-utility source	64	29%
Mass Save	24	11%
Not sure	49	22%
Total	220	

FINDING 3. CUSTOMERS RECALL A VARIETY OF OUTREACH AND CONSIDER THE MESSAGING CLEAR



Most customers recall seeing Mass Save outreach and noted those messages were clear. Recall of outreach for residential customers and a deeper knowledge of Mass Save for C&I customers led to increased perception that Mass Save can help save money on energy bills.

CAMPAIGN OUTREACH RECALL

Residential customers. Most (65%) residential customers recall seeing some type of Mass Save outreach. Latino and low-income respondents report similar levels of recall (65%, and 71%, respectively). Of those who recall having seen some type of outreach, 38% recall seeing messaging about Mass Save within the past year, and 53% of respondents recall seeing Mass Save messaging prior to one year ago.

Latino and low-income customers show no differences when they reported hearing about Mass Save when compared to their counterparts. Nearly half (46%) of low-income respondents recalled seeing Mass Save messages during the past year, compared to 36% of standard-income respondents. Among Latino respondents, 40% recalled seeing Mass Save messages during the past year, compared to 37% of non-Latino respondents.

Residential customers report that they see Mass Save messaging through a variety of channels, which aligns with the Mass Save marketing campaign strategy (Table 13). In the past year, a quarter of respondents noted seeing an online ad, infographic, or video about Mass Save, and seven percent recall seeing one more than a year ago. Customers reported similar rates of recall for radio ads, information while shopping for an appliance, and ads on public transport.

TABLE 13. RESIDENTIAL RECALL RATES FOR MASS SAVE OUTREACH

RECALL OUTREACH	IN PAST YEAR	MORE THAN A YEAR AGO
Online ad (n=402)	25%	7%
Radio (n=402)	21%	6%
When shopping for appliance (n=404)	20%	12%
Public transportation (n=404)	18%	7%
Social media (n=402)	16%	3%
Billboard (n=404)	12%	5%

When we asked more generally, how customers had heard about Mass Save, respondents reported having seen or heard about Mass Save through word of mouth most often (44%, Table 14). Similar proportions of Latino and low-income customers reported having heard about Mass Save from these additional sources when compared to their counterparts (non-Latinos and standard-income respondents).

TABLE 14. ADDITIONAL SOURCES CUSTOMERS HAVE LEARNED OF MASS SAVE

ADDITIONAL SOURCES	OVERALL (n=454)	LOW-INCOME (n=92)	LATINO (n=51)
Word of mouth	44%	34%	37%
Energy bill	40%	38%	35%

In the mail	38%	37%	30%
Not sure	14%	13%	7%
Other	8%	10%	17%
Nowhere else	6%	9%	9%

Many residential respondents noted that the Mass Save messages they recall are clear (65%). More low-income respondents (75%) reported the message was clear than their standard-income counterparts (64%).¹⁷ However, similar proportions of Latinos (63%) and non-Latinos (65%) reported the message was clear.

C&I customers. Over half (56%) of C&I customers recall seeing some type of Mass Save outreach. Of those, 42% recall having seen the outreach within the last year, and almost half (46%) recalled having seen or heard about Mass Save more than a year ago.

Like residential customers, C&I customers report they have seen Mass Save messaging through a variety of channels (Table 15). However, unlike residential customers, more C&I respondents recalled having seen this outreach more than a year ago, with a quarter recalling hearing radio ads more than a year ago compared to 20% this past year. This trend continues for all types of outreach we asked about.

TABLE 15. C&I RECALL RATES FOR MASS SAVE OUTREACH

RECALL OUTREACH	IN PAST YEAR	MORE THAN A YEAR AGO
Radio (n=187)	20%	25%
Online ad (n=187)	19%	23%
Business journal ad or article (n=188)	14%	19%
Email (n=186)	14%	19%
Public transportation (n=187)	11%	14%
Billboard (n=188)	10%	14%

When we asked how else respondents had heard about Mass Save, 44% said they had heard about Mass Save through some kind of ad, without noting the mode of the ad. Respondents also noted having heard about Mass Save from a contractor (19%) and from their utility (19%).

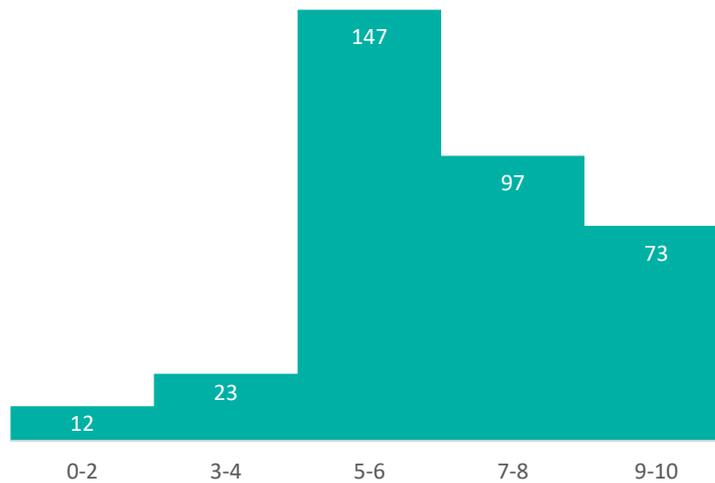
Suggesting C&I customers understand Mass Save’s outreach, 85% of those C&I respondents who had seen Mass Save messages noted those messages were clear.

¹⁷ Z-test for proportions was statistically significant at the $p < .05$ level.

PERCEPTIONS OF MASS SAVE TAGLINE

Residential customers. Over half (55%) of respondents agreed the campaign tagline, “Mass Save makes it easy to save money on your energy bill,” was clear (ratings from 6 to 10), with an average rating of 6.5. Figure 10 shows a histogram of responses, with the majority of responses falling in the middle of the rating scale. Customers who recalled any type of outreach from Mass Save had marginally higher ratings, agreeing the tagline was clear (6.7 average rating), compared to those who did not recall seeing any Mass Save marketing (6.2 average rating).¹⁸

FIGURE 10. HISTOGRAM OF MESSAGE CLARITY RATINGS (RESIDENTIAL)



The current tagline has been in use by Mass Save for three years. Throughout that time, the proportion of customers agreeing the tagline, “Mass Save makes it easy to save money on your energy bill,” has declined slightly from 2015 to 2018 (Table 16).

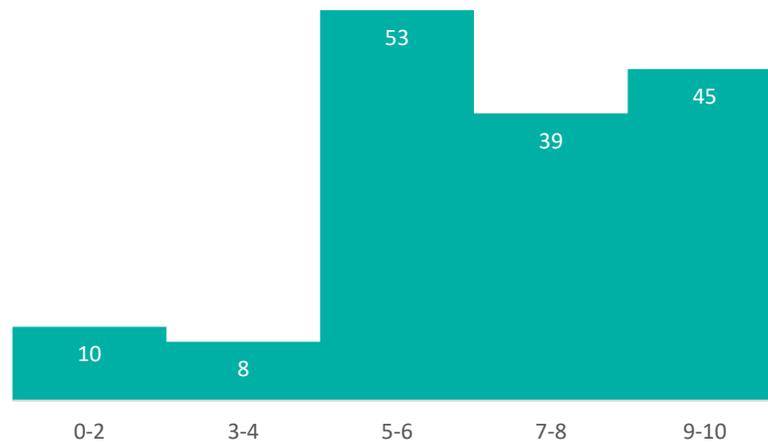
TABLE 16. LONGITUDINAL COMPARISON OF MESSAGE CLARITY RATINGS (RESIDENTIAL)

YEAR	PERCENT AGREEING THAT TAGLINE IS CLEAR	
	2015	67%
2017	63%	<div style="width: 63%; background-color: #444; height: 10px;"></div>
2018	55%	<div style="width: 55%; background-color: #444; height: 10px;"></div>

¹⁸ T-test comparison marginally significant with a p-value of 0.07

C&I customers. About three-quarters (73%) of respondents agreed the campaign tagline, “Mass Save makes it easy to save money on your energy bill,” was clear (ratings from 6 to 10), with an average rating of 6.6. Figure 11 shows a histogram of responses, with most responses falling in the middle-high end of the rating scale. C&I respondents who were unsure whether Mass Save offered both residential and C&I options to save energy had lower ratings agreeing the tagline was clear (5.4 average rating), compared to those who report Mass Save offered residential and C&I options (7.3 average rating).¹⁹

FIGURE 11. HISTOGRAM OF MESSAGE CLARITY RATINGS (C&I)



Like the residential ratings, the proportion of C&I customers agreeing the tagline, “Mass Save makes it easy to save money on your energy bill,” has declined slightly from 2015 to 2018 (Table 17).

TABLE 17. LONGITUDINAL COMPARISON OF MESSAGE CLARITY RATINGS (C&I)

PERCENT AGREEING THAT TAGLINE IS CLEAR		
YEAR		
2015	82%	
2017	80%	
2018	73%	

¹⁹ T-test comparison significant with a p-value <.01

CUSTOMER FAVORABILITY OF MASS SAVE



Almost all customers reported having a favorable view of Mass Save. The proportion of customers with a favorable view of Mass Save continues to increase for both residential and C&I sectors.

Residential customers. Like the last residential statewide marketing survey, we provided respondents with a description of Mass Save and asked about their favorability of the brand, based on that description. Most residential respondents reported they have a favorable opinion of Mass Save. Among all residential respondents, 95% said they view Mass Save either very favorably or somewhat favorably, an 11% increase from 2017 in the number of respondents expressing favorability toward Mass Save.

Low-income and Latino respondents are also equally likely to give Mass Save high favorability ratings, as compared to non-low-income and non-Latino respondents.

C&I customers. As with residential customers, almost all C&I respondents (96%) rated Mass Save favorably, a 17% increase in customers' expressed favorability. Finding 4. Customer Knowledge of PA Sponsorship Remains Complex

FINDING 4. KNOWLEDGE OF BRAND SPONSORSHIP

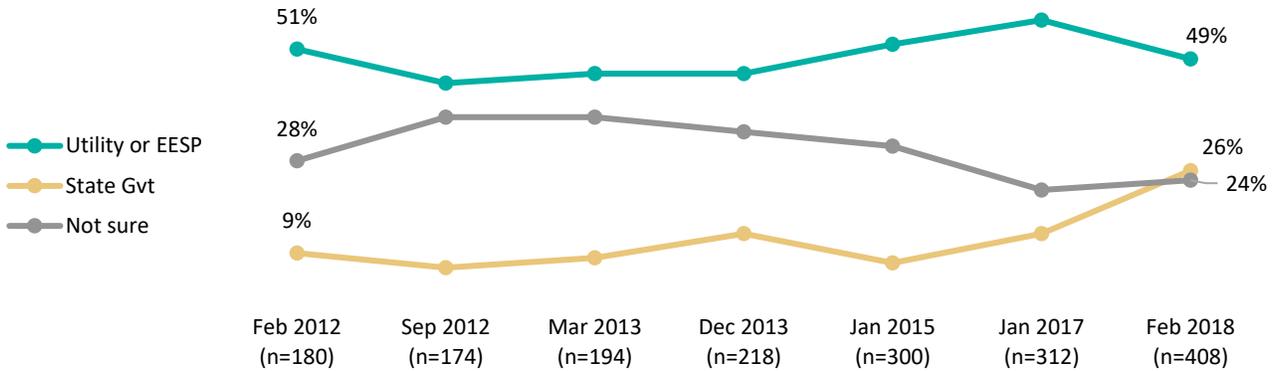


Half of both residential and C&I customers perceive that PAs sponsor Mass Save. The proportion of residential customers reporting state government sponsors the brand continues on an upward trend.

C&I customers who have participated in efficiency programs are more likely to mention PAs sponsor Mass Save, while residential customers rating they are familiar with the brand are more likely to mention state government sponsors Mass Save.

Residential customers. Nearly half of all residential survey respondents noted the PAs sponsor Mass Save (49%). This decreased from the prior year, when 57% of respondents reported knowledge of PA sponsorship of the Mass Save brand but is consistent with prior survey proportions. About a quarter of respondents this year reported Mass Save was sponsored by state government (26%), an increase from prior years and now equal to the proportion of respondents who reported they were not sure who sponsored Mass Save (Figure 12).

FIGURE 12. OVERALL RESIDENTIAL PERCEPTIONS OF MASS SAVE SPONSORSHIP



Suggesting that targeted outreach to segments has effectively communicated Mass Save sponsorship, more low-income and Latino respondents named their utility as a Mass Save sponsor (62% and 69%, respectively) compared to their counterparts.²⁰ Similar proportions of customers by segment noted state government as a sponsor, but fewer low-income and Latino customers said they did not know who sponsored Mass Save (Table 18).

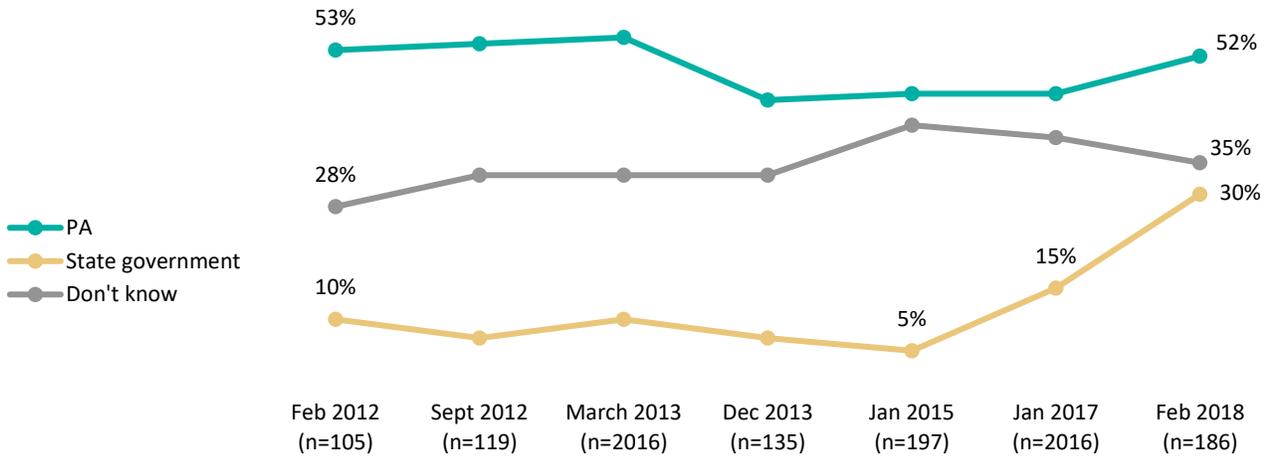
TABLE 18. PERCEIVED SPONSORSHIP BY SEGMENT

	PA	STATE GOVERNMENT	DON'T KNOW
SEGMENT			
Overall (n=408)	49%	26%	24%
Latino (n=89)	62%	24%	14%
Low-income (n=109)	69%	21%	9%

Commercial customers. Like residential findings, about half (52%) of C&I respondents believe the PAs at least partially sponsor Mass Save, 30% noted state government as a sponsor, and 35% were not sure who sponsored Mass Save. The percent of respondents for each major response category shifted this year from last year, and the increase in the proportion of respondents who mentioned state government as a sponsor of Mass Save is notable. However, this increase could be due to differences in the sample frame or in the fielding of the survey—both of which have changed in this current research effort.

²⁰ Z-test for proportions significant at the p<.001 level.

FIGURE 13. OVERALL C&I PERCEPTIONS OF MASS SAVE SPONSORSHIP



One explanation for the increased proportion of customers, both residential and commercial, who perceive state government sponsors Mass Save is the inclusion of “Mass” in the name. One commercial customer, when asked whether he had heard of Mass Save noted “Yes, its *government* money to help people like myself to flip over to energy efficiency.” This respondent went on to note that he associated anything with “Massachusetts” in the name with state government.

RELATIONSHIP BETWEEN PERCEIVED SPONSORSHIP AND MASS SAVE ENGAGEMENT METRICS

To identify potential relationships between brand awareness, familiarity, program participation, and knowledge of Mass Save sponsorship, we used data mining techniques, such as exploratory factor analysis (EFA)²¹ and Chi-square Automatic Interaction Detector (CHAID).²² These techniques allow us to identify relationships between the various questions we asked in the survey. CHAID models are helpful in showing how we can partition responses to certain questions to explain a certain outcome; in this case, what predicts respondents’ perception of Mass Save sponsorship. For both residential and C&I respondents, we ran several CHAID models to understand what could best predict customers’ understanding of who sponsors Mass Save. For both residential and C&I models, we included a combination of survey questions ranging from brand awareness and familiarity questions, program awareness and participation, recall of outreach, brand associations, and firmographic/demographic questions.

²¹ We ran several EFA models on both residential and C&I data; however, the categorical nature of the survey data we collected is not ideally suited to EFAs. None of the models we ran provided outcomes with suitable model fit indices.

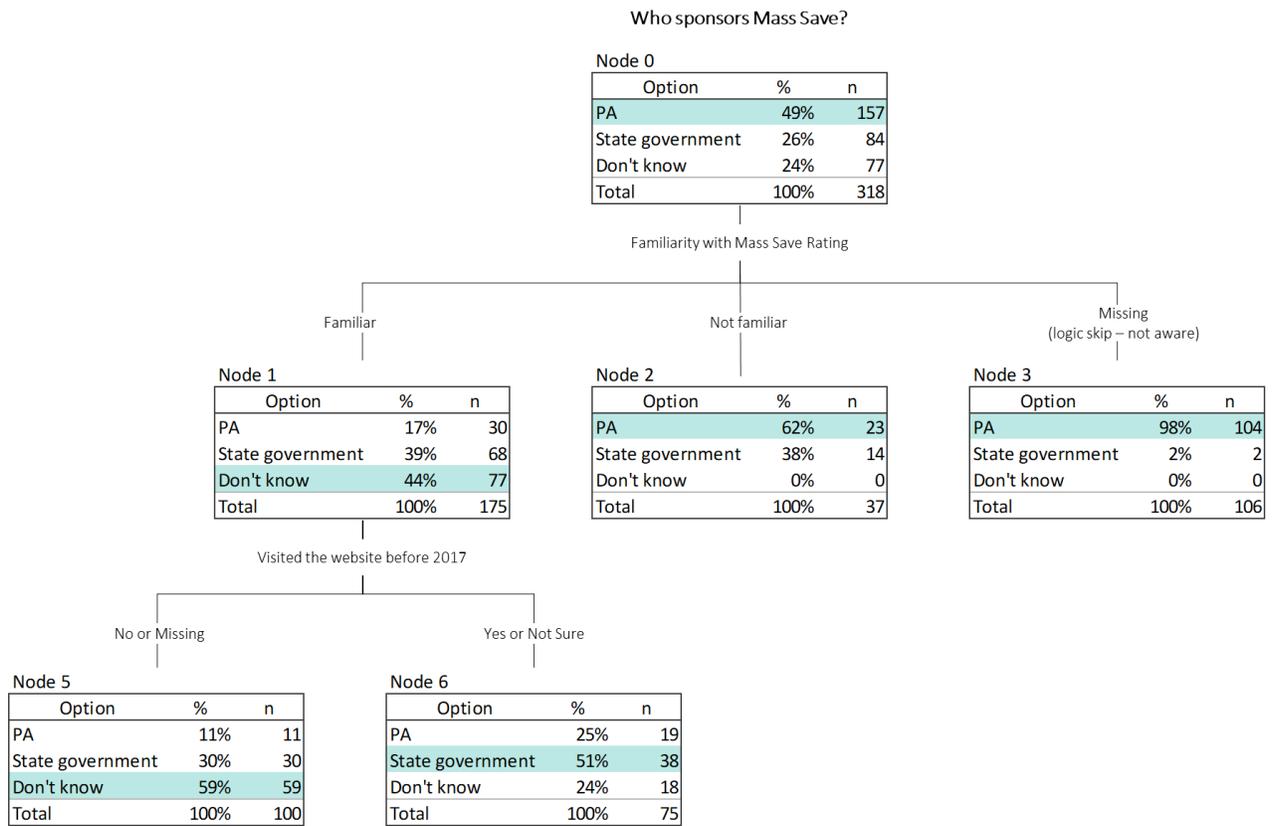
²² CHAID models function much like Classification and Regression Tree (CART) models but are used with categorical data. All CHAID partitions must be statistically significant. Thus, the final solution of a CHAID model is a nested crosstab where all comparisons are statistically significant at the p<.05 level.

Since we used skip logic in the survey, we allowed missing responses into the models as a response option, much like “not sure” responses, to ensure we included as many respondents in our model as possible.

CHAID models showed diverging patterns for residential and C&I customers. The final residential model first partitioned the data based on whether respondents were familiar with Mass Save, and the model further divided the data based upon whether respondents had visited the MassSave.com website before 2017 (Figure 14).²³ The model suggests that a higher proportion of respondents who rated themselves as familiar with Mass Save reported state government sponsors Mass Save. In contrast, a higher proportion of those who did not rate themselves as familiar with Mass Save reported their PA sponsored Mass Save.

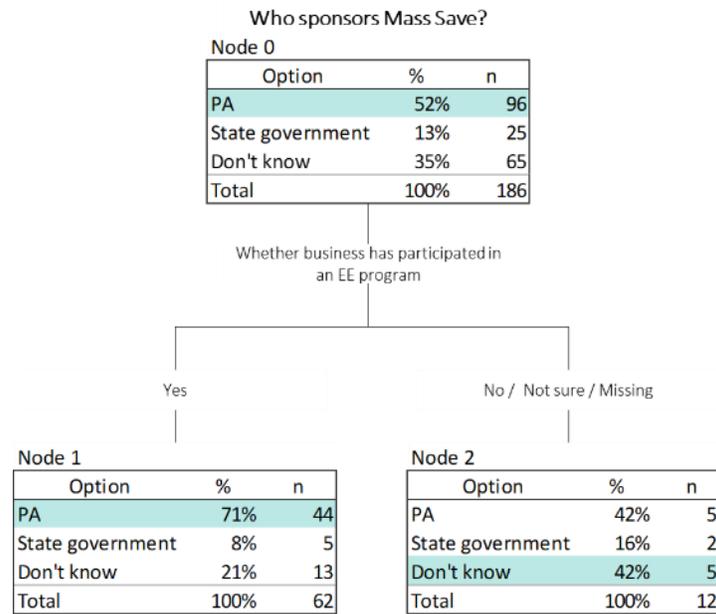
²³ In this case, the model divided output based on whether they had seen the question, so “yes” and “no” responses were grouped together, but “missing” responses were separate. Because this question relied upon showing a visual logo, we asked this question only to web respondents.

FIGURE 14. OPTIMAL CHAID PREDICTION OF PERCEPTION OF MASS SAVE SPONSORSHIP (RESIDENTIAL)



In contrast to the residential model, where customers who were more familiar with Mass Save were less likely to attribute sponsorship to PAs, the C&I model indicates that a higher proportion of commercial customers that have participated in any efficiency program attribute sponsorship of Mass Save to PAs (Figure 15). While this model seems contradictory, some customers anecdotally noted they associate the word “Mass” with state government. We suggest using a qualitative research approach to understand how customers view Mass Save sponsorship.

FIGURE 15. OPTIMAL CHAID PREDICTION OF PERCEPTION OF MASS SAVE SPONSORSHIP (C&I)



These results align with other findings reported in this document; specifically, C&I respondents were more likely to reach out to their PA for energy-saving information and were also more likely to go to their PA for energy-saving information when compared to residential customers. However, CHAID models, while useful in identifying comparisons we would not normally examine, such as perceived sponsorship and familiarity ratings, may not tell the full story of these interactions. Ethnographic in-home and in-business research may provide more insights into results such as these by allowing researchers to freely probe into a customer's thinking.

BRAND ASSOCIATIONS

Residential customers. Most residential customers aware of Mass Save associate the brand with energy (84%). Latino and low-income responded similarly to the MA general population, with 86% and 87% of respondents associating Mass Save with energy.

When asked about the types of programs and solutions that respondents associate with Mass Save, about a quarter of respondents, including low-income and Latino respondents, report they associate the brand with home energy assessments (Table 19). This may be because the Mass Save website emphasizes messaging specifically related to the home energy assessment offering as one of the key residential offerings. About five percent of respondents noted they associate Mass Save with free or reduced appliances. A higher proportion of low-income respondents mentioned Mass Save as a resource for energy information when compared to standard-income respondents (17% compared to 7%, respectively).²⁴ Otherwise, Latino and low-income customers' associations mirror the MA general population.

²⁴ Z-test for proportions significant at the p<.05 level.

TABLE 19. RESIDENTIAL BRAND ASSOCIATIONS (UNAIDED, MULTIPLE RESPONSE)

	OVERALL (n=417)	LATINO (n=65)	LOW-INCOME (n=93)
UNAIDED ASSOCIATIONS			
Home energy assessment	28%	28%	23%
Makes it easy to save energy	26%	19%	20%
Saving money on my energy bill	20%	22%	25%
Rebates on high-efficiency products/equipment	15%	10%	16%
Resource for energy information	8%	3%	17%
Utility companies or EESPs	6%	2%	5%
Other, Specify	20%	26%	21%
Not Sure	7%	17%	7%

When asked which of the phrases listed in Table 20 respondents most associated with Mass Save, about a third selected “home energy assessments.” Low-income and Latino customers responded similarly to survey respondents overall. A similar proportion of respondents in the 2017 survey selected “home energy assessments” as their primary association with Mass Save (32%).

TABLE 20. RESIDENTIAL BRAND ASSOCIATIONS (AIDED, SINGLE RESPONSE)

	OVERALL (n=417)	LATINO (n=65)	LOW-INCOME (n=97)
AIDED ASSOCIATIONS			
Home energy assessments	36%	35%	32%
A way to lower your energy bills	21%	25%	23%
A resource for EE information and services	17%	9%	20%
Rebates for a variety of equipment and products	15%	18%	15%
Making saving energy easy	4%	6%	7%
Not Sure	6%	6%	3%

C&I customers. Like findings for the residential sector, the majority of C&I respondents associate Mass Save with energy. This association varies minimally by business type. Healthcare facilities/hospitals and industrial/manufacturing business types associate Mass Save with energy most frequently (both at 91%). By comparison, hospitality and grocery store businesses associate Mass Save with energy slightly less frequently (78%).

When asked about the types of programs and solutions that respondents most associate with Mass Save, most C&I respondents said energy assessments (27%). It is unknown if respondents are specifically referring to business or home energy assessments.

One quarter of C&I respondents (25%) most associate Mass Save with a way to lower energy bills, and 22% most associate Mass Save with rebates for a variety of high-efficiency appliances.

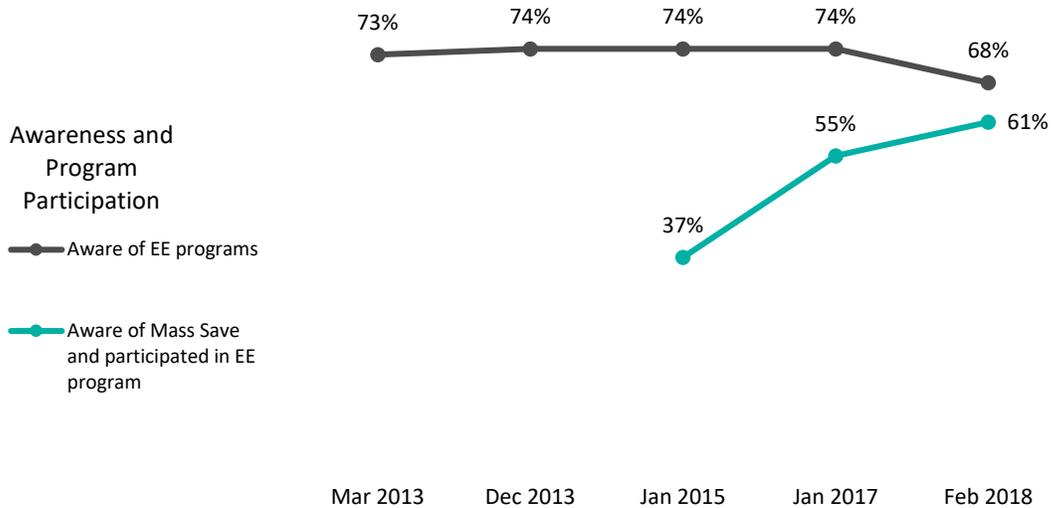
FINDING 5. THE MORE AWARE OF MASS SAVE CUSTOMERS ARE, THE MORE LIKELY THEY ARE TO PARTICIPATE IN PROGRAMS



Residential and C&I customers aware of Mass Save were more likely to be aware of energy saving programs, and residential customers familiar with Mass Save were more likely to participate in these programs.

Residential customers. Over two-thirds of all residential respondents were aware there are programs to help them save energy in their home (68%). This declined slightly from the last statewide marketing survey results, which demonstrated that 74% of residential respondents were aware of such programs (Figure 16). However, self-reported program participation rates among those customers who *are aware* of Mass Save are increasing.

FIGURE 16. OVERALL RESIDENTIAL CUSTOMER AWARENESS OF AND PARTICIPATION IN EE PROGRAMS



More residential customers who reported they were familiar with Mass Save also reported being aware of, and participating in, energy-saving programs (Table 21 and Table 22).²⁵

²⁵ Both group differences are statistically significant at the p<.05 level.

TABLE 21. OVERALL PROGRAM AWARENESS BY FAMILIARITY²⁶ WITH MASS SAVE

	AWARE OF EE PROGRAMS	WAS NOT AWARE OF EE PROGRAMS
Familiar (n=248)	68%	32%
Unfamiliar (n=178)	56%	44%

TABLE 22. OVERALL PROGRAM PARTICIPATION BY FAMILIARITY WITH MASS SAVE

	PARTICIPATED IN EE PROGRAM	DID NOT PARTICIPATE IN EE PROGRAM
Familiar (n=189)	29%	71%
Unfamiliar (n=107)	17%	83%

Low-income and Latino customers. Low-income respondents were marginally less likely to be aware of efficiency programs compared to standard-income respondents (61% vs. 69%, respectively).²⁷ Latino customers showed a similar level of program awareness compared to non-Latino customers (23% vs. 24%).

C&I customers. More than half of C&I respondents were aware of Mass Save programs for both home and business (54%). Nearly 20% of C&I customers thought Mass Save only offered efficiency programs for the home (18%). Of those who were aware of business offerings, the top program associations were rebates/incentives and cost sharing (46%), rebates/incentives specifically for lighting (36%), and energy assessments (26%). When asked about specific programs, respondents noted they were aware of incentives for energy efficient lighting (58%), incentives for energy efficient HVAC (30%), and energy assessments (28%). Half (52%) of these respondents had participated in one of the programs.

Suggesting possible cross-pollination of residential and C&I marketing outreach for C&I customers, commercial customers with a comprehensive understanding of Mass Save offerings—those that knew Mass Save offered both residential and commercial offerings—were more likely to have participated in energy efficiency programs than customers with a less comprehensive understanding (Table 23).

TABLE 23. C&I UNDERSTANDING OF MASS SAVE OFFERINGS AND PROGRAM PARTICIPATION RATES

	PARTICIPATED IN EE PROGRAM	DID NOT PARTICIPATE IN EE PROGRAM
Both Residential and C&I (n=80)	63%	38%
Either Residential or C&I (n=13)	31%	69%
Don't know (n=22)	41%	59%

²⁶ Here, “Familiar” represents the sum of customers who indicated they were “very familiar” or “somewhat familiar” when asked the question, “How familiar are you with Mass Save? Would you say you are very familiar, somewhat familiar, neither familiar nor unfamiliar, somewhat unfamiliar, or very unfamiliar?”

²⁷ Z-test for proportions was marginally significant at the $p < .10$ level.

4. CONCLUSIONS

Findings across most survey metrics indicate a continued upward trend of Mass Save awareness, familiarity, and participation in programs. Outreach to Spanish-speaking (studied here as Latinos) and low-income groups appear to be working well, with higher-year-over-year increases in website awareness than the overall MA population.

A sizable number of customers reported visiting the website in the six months between website redesign and our survey fielding. While not a majority of customers, the fact that about 40% visited an energy efficiency website in six months suggests a high degree of engagement with Mass Save. While customers gave similar usefulness ratings, whether they visited the website prior to or after the redesign, a survey designed for phone and web modes—without use of many visuals to help with recall—may not be the ideal method to assess receptiveness to the redesign.

While half of surveyed customers perceive PAs sponsor Mass Save, the interplay between Mass Save brand familiarity, program participation, and program sponsorship is complex. While we observed a logical connection for C&I customers—customers who have participated in programs are more likely to perceive PAs sponsor Mass Save, residential customers showed a different pattern. Specifically, residential customers who reported they are familiar with Mass Save were less likely to assign Mass Save sponsorship to PAs. To tease apart these nuances, we suggest conducting in-home and in-business ethnographic research to identify the nuances of these associations of sponsorship of Mass Save, affiliation of Mass Save as a provider of energy efficiency programs, visits to the masssave.com website, and participation in Mass Save and PA programs.

5. APPENDICES

APPENDIX A. CAMPAIGN OVERVIEW

Similar to 2016 campaign objectives, the 2017 campaign objectives focused on continuing to increase awareness of the Mass Save brand and driving traffic to the MassSave.com website. The MassSave.com website was redesigned in June 2017. Table 24 shows the year-by-year Mass Save campaign objectives since its inception.

TABLE 24. MASS SAVE CAMPAIGN OBJECTIVES (2010-2017)

CAMPAIGN YEAR	CAMPAIGN OBJECTIVES
2010	<ul style="list-style-type: none"> • Educate customers about the need for, and benefits of, energy efficiency • Increase awareness of Mass Save • Drive MA residents to participate in sponsored energy efficiency programs
2011	<ul style="list-style-type: none"> • Educate customers about the need for, and benefits of, energy efficiency • Increase awareness of Mass Save • Drive MA residents to participate in sponsored energy efficiency programs
2012	<ul style="list-style-type: none"> • Educate customers about Mass Save • Create awareness and understanding of Mass Save as a statewide resource for energy efficiency needs
2013	<ul style="list-style-type: none"> • Convey the following messages to the target audience: <ul style="list-style-type: none"> ○ Anyone can lower his or her monthly energy bill. ○ The first step to lowering energy bills is to visit MassSave.com.
2014	<ul style="list-style-type: none"> • Convey the following messages to the target audience: <ul style="list-style-type: none"> ○ Anyone can lower his or her monthly energy bill. ○ The first step to lowering energy bills is to visit MassSave.com.
2015	<ul style="list-style-type: none"> • Continue to increase awareness of the Mass Save brand • Drive traffic to MassSave.com by conveying how easy it is to find ways to save money and energy with MassSave.com
2016	<ul style="list-style-type: none"> • Continue to increase awareness of the Mass Save brand • Drive traffic to MassSave.com by conveying how easy it is to find ways to save money and energy with MassSave.com • Increase awareness among low-income, and Spanish- and Portuguese-speaking customers
2017	<ul style="list-style-type: none"> • Continue to increase awareness of the Mass Save brand • Drive traffic to MassSave.com by conveying how easy it is to find ways to save money and energy with MassSave.com • Increase awareness among low-income, and Spanish- and Portuguese-speaking customers

Overall, the 2017 Mass Save budget remained consistent with the 2016 campaign budget, with nearly 50% of the total budget spent on radio media.

TABLE 25. MASS SAVE CAMPAIGN BUDGET BY CHANNEL

MEDIA CHANNEL	2016	2017 ²⁸
Digital	\$644,349	\$552,489
Radio	\$942,064	\$980,097
Out-of-Home	\$547,095	\$548,666
Print	\$55,519	\$54,904
Budget Total	\$2,189,026	\$2,136,157

CAMPAIGN STRATEGY

The campaign targeted residential customers, including low-income and Spanish- and Portuguese-speaking customers, as well as C&I customers, using digital, radio, out-of-home, and print media channels. Within each media channel, several different tactics were used; for example, digital media included mobile ads, digital radio, and Facebook ads, among others. Geographic coverage of tactics ranged from select markets to statewide.

TABLE 26. MASS SAVE CAMPAIGN CHANNELS, TACTICS, TARGET POPULATIONS, & COVERAGE

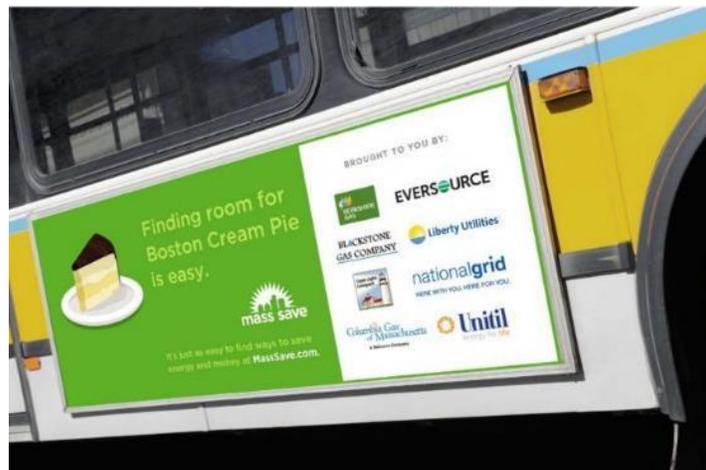
CHANNEL	TACTIC	TARGET POPULATION	COVERAGE
Digital	Cross-device display	Residential English	Statewide
	Mobile ad/network	Residential Spanish & Portuguese	
	Network/direct publisher display	Residential English, Spanish, Portuguese	
	Mobile geo-fencing	Residential	
	Digital radio	Residential	
	Native advertising	Residential	
	Pre-roll video	Residential, Spanish, Portuguese	
	Facebook	Residential	
	Paid search	Residential	
	Cross-device display & video	C&I	
	Network/direct publisher display	C&I	
	Native advertising	Spanish, Portuguese	
	Paid search	C&I	
	Radio	Boston	Residential
Cape Cod		Spanish	
New Bedford-Fall River		Portuguese	:60 and :30 spots
Berkshires		Income-eligible	
Springfield		C&I	
Worcester			

²⁸ 2017 Mass Save Connections Plan.

Out-of-Home	Billboards	Residential	Select markets
	Commuter rail & MBTA	Income-eligible	Boston
	Bus sides	C&I	Select markets
Print	Berkshire Trade & Commerce		¼ and ½ 4C
	Boston Business Journal		¼ and ½ 4C
	Business West		¼ and ½ 4C
	Cape & Plymouth Business		¼ and 1/3 4C
	Worcester Business Journal		¼ and ½ 4C
	Fall River Chamber		½ pg 4C
	New Bedford Chamber		½ pg 4C
	Greater Springfield Chambers		½ pg 4C
	South Shore Chamber		½ pg 4C
North Central Mass Chamber		½ pg 4C	

Media directed customers to the Mass Save website, with messaging focused on how easy it is for customers to save energy and money at MassSave.com.

FIGURE 17. CAMPAIGN MESSAGING EXAMPLE²⁹



CAMPAIGN WEBSITE

The MassSave.com landing page contains the same messaging included in other media—that customers can find easy ways to save energy and money with Mass Save.

The landing page allows customers to choose solutions for their home, business, or multi-family properties. Once customers choose one of these three property types, pop-up menus appear to allow them to choose the types of efficiency solutions in which they are interested.

²⁹ From Final Creative, 2017.

TABLE 27. MASS SAVE WEBSITE SOLUTIONS BY PROPERTY TYPE

PROPERTY TYPE	SOLUTIONS
Home	Rebates & Incentives Energy Assessments Income-Eligible Programs Low-Rise New Construction
Business	Rebates & Incentives Services & Financing
Multi-Family	Energy Assessments High-Rise New Construction Income-Eligible Multifamily

The website also contains links to direct customers to specific resources. For example, residential customers can navigate through the website to find:

- Specific rebate and incentive programs, including heating and cooling, weatherization, and lighting and appliance programs;
- Rebate forms that can be printed and submitted by mail;
- Online rebate submissions (customers are directed to the MA Rebates Landing page);
- Information on no-cost energy assessments, which includes customer testimonials; and
- Information and eligibility criteria for new home construction, including a link to certified Home Energy Rating System (HERS) raters.

C&I customers can navigate to resources, including, but not limited to:

- Specific rebate and incentive programs;
- Case studies of businesses that have invested in energy efficiency;
- Forms and documents, including applications for adding or replacing end-of-life equipment; and
- Mass Save Financing for Business Program.

APPENDIX B. DETAILED METHODOLOGY

DETAILED RESIDENTIAL SURVEY METHODS

This section provides detailed information about the residential population frame provided by DNV-GL, the survey sample frame developed by ILLUME, the survey fielding, and the characteristics of survey respondents.

SAMPLING STRATEGY

Population Frame. As mentioned in the Survey Methods section, the ILLUME team used a random sample of residential PA customers provided by DNV-GL as our population frame because MA evaluation contractors no longer have access to full residential population data. DNV-GL provided population data in two waves. The first wave was a random sample of the residential PA customers and served as our population in developing the post-stratification survey weights explained in the Residential Survey Methods section. The second wave of data oversampled the subgroups of interest (low-income and Latino) to ensure we had adequate sample for these groups.

DNV-GL prepared the initial random sample as follows:

- DNV-GL pulled the random sample proportionally by PA and by low-income customers.
- To identify low-income customers, DNV-GL used low-income rate codes provided by the PAs.
- Each customer record in the sample was that of the last account at each premise.
- Records were excluded for customers that were not eligible to be contacted for the survey, including:
 - Those on “Do Not Contact” lists provided by the PAs
 - Customers participating in, or solicited for, other research samples and surveys
- All PA customers were assigned random numbers, and a sample was selected based on a sort by random number function.

Upon review of the random customer sample, the ILLUME team made a subsequent data request to DNV-GL and the PAs for an additional Latino and low-income customer sample to ensure adequate survey completes among these customer segments. Oversampling these two customer groups allowed the research team to provide results for Latino and low-income customers, thus enabling comparisons with the 2016 survey results. We did not include any other stratification (e.g., by PA-specific populations) in the sampling strategy.

To identify potential Spanish-speaking respondents, DNV-GL used a list of approximately 1,500 Hispanic last names generated from the United States Census list of Hispanic names and the list of 300 Hispanic last names that was used for the 2016 survey research. In addition, we used the following parameters to identify the Latino population:

- Spaces were removed from Hispanic last names that have them (e.g., De La Torre versus Delatorre).³⁰

³⁰ DNV-GL used the last name, “De la Torre” versus “Delatorre” as an example and confirmed that approximately two-thirds of PA customers with this last name are spelled without spaces in the PA billing data, while approximately one-third of customers with this last name are

- Composite names included those with a space or hyphen (e.g., Sanchez Lopez or Sanchez-Lopez), but did not include those without a space or hyphen (e.g., SanchezLopez).³¹

Table 28 shows the number of members of each subgroup of interest from each wave of DNV-GL population data.

TABLE 28. POPULATION DATA PROVIDED BY DNV-GL³²

	WAVE 1	WAVE 2	TOTAL
GROUP			
Low-income Latino	636	1,326	1,962
Standard-income Latino	1,256	2,642	3,898
Low-income, Non-Latino	3,014	5,974	8,988
Standard-income, Non-Latino	25,293	-	25,293
Total	30,199	9,942	40,141

Survey Sample Frame. For the final residential survey sample frame, the research team cleaned the data provided by DNV-GL and over-sampled both Latino and low-income populations. The research team used the sample drawn by DNV-GL as the population from which to draw a sample for the survey.

The research team excluded the following accounts in the final residential sample:

- **Non-residential accounts.** We identified these by the rate code (“General – Annual”), the presence of numbers in the customer name, or the presence of terms indicating a non-residential name (HSG AUTH, HOUSING AUTH, ASSOC, LLC, CONDO, TRUST, REALTY, INC). The data file contained a number of condo and housing associations such as “DEL REALTY PARTNERSHIP” and “10 GLENDALE CONDO TRUST” that we identified this way.
- **Closed rate code accounts.** We eliminated the rate codes of “Water Htg. - Annual (Closed)” and “Water Htg. - Dummy (Closed).”
- **Seasonal homes with mailing addresses outside the state of Massachusetts.** We excluded any accounts with rate codes of "Residential - Seas. Optional" or "Residential - Seasonal" that had mailing addresses located outside of Massachusetts.
- **Customers with a “Do Not Mail” designation.** While DNV-GL removed customers with a “Do not call” designation from the population frame they provided, they did include some with a “Do not Mail” designation, which we excluded from our sample.

spelled with the spaces. This means that last name matches to the list (which does not include spaces) misses identifying approximately one-third of customers with this last name.

³¹ This may result in under-identifying those customers whose composite last names do not contain a space.

³² We used wave one distributions when we created the survey weighting scheme since these numbers reflected the MA population across these four groups.

- **Duplicate addresses.** We found eleven duplicated residential addresses in the population frame. In these cases, we retained the first record in the file with the duplicated address for possible inclusion in the sample frame.

As explained above, DNV-GL provided population data to the ILLUME team in two waves. **Error! Reference source not found.** displays the number of records available for sampling from each wave and in total, before and after cleaning and removing duplicates.

TABLE 29: NUMBER OF RESIDENTIAL ACCOUNTS IN POPULATION BEFORE AND AFTER DATA CLEANING

GROUP	WAVE 1		WAVE 2		WAVE 3	
	Before	After	Before	After	Before	After
Low-income Latino	636	635	1,326	1,316	1,962	1,951
Standard-income Latino	1,256	1,240	2,642	2,617	3,898	3,857
Low-income, Non-Latino	3,014	2,979	5,974	5,938	8,988	8,917
Standard-income, Non-Latino	25,293	24,345	-	-	25,293	24,345
Total	30,199	29,199	9,942	9,871	40,141	39,070

The research team used random sampling to generate the sample for the following three customer strata: (1) Low-income, non-Latino; (2) Standard-income, non-Latino; and (3) Standard-income, Latino. The research team used a census of customers to generate the final low-income, Latino sample. The team divided the sample into two replicates, or sample groups, before providing it to the survey house to ensure they would have an adequate sample to achieve the targeted number of responses. The purpose of dividing the sample into multiple sample groups is to maximize response rate and minimize non-response bias by exhausting the first sample group before using the second sample group. Table 30 displays the sample the research team provided for each of our strata.

TABLE 30. FINAL SAMPLE FRAME PROVIDED TO SURVEY HOUSE

GROUP	SAMPLE GROUP 1	SAMPLE GROUP 2	TOTAL
Low-income Latino	1,951	-	1,951
Standard-income Latino	1,360	907	2,267
Low-income, Non-Latino	2,000	1,333	3,333
Standard-income, Non-Latino	6,640	4,427	11,067
Total	11,951	6,667	18,618

FIELDING

We conducted a pre-test of the residential survey beginning on December 20 to test for customer response to the introductory outbound phone script, customer understanding of the survey, and to identify any errors in survey skip-logic programming. Based on this pre-test, we made minor changes to enhance customer responsiveness to the survey. The research team fielded the residential surveys from January 16 – February 21, 2018.

We mailed an invitation letter to 5,921 residential customers. Customers receiving this letter were directed to the web survey but were also given the option to call in to complete the survey. Residential customers who did not

respond to the mailed invitation letter were then sent an email invitation, directing them to the web-based survey. Like the mail invitation letter, the email invitation also provided an option for completing the survey via telephone. The research team directly called those residential customers who did not respond to either the mail or email invitations.

The ILLUME team entered all customers who completed the survey into a drawing to win one of twenty-five \$20.00 Amazon gift cards. Gift cards were mailed to all drawing winners at the end of February 2018. Table 31 shows how the 569 completed residential surveys were distributed across the populations of interest.

TABLE 31. RESIDENTIAL SURVEY COMPLETES

	LOW-INCOME	STANDARD-INCOME	TOTAL
GROUP			
Non-Latino	96	355	451
Latino	53	65	118
Total	149	420	569

SURVEY COMPLETES

The research team did not set quotas for survey completes by survey mode; however, the research team monitored the distribution of completes by survey mode during fielding. Table 32 shows the number of completed interviews by survey mode.

TABLE 32. RESIDENTIAL SURVEY COMPLETES BY SURVEY MODE

	COMPLETED INTERVIEWS 2016	COMPLETED INTERVIEWS 2017
SURVEY MODE		
Telephone	220	170
Web-based	387	399
Total	607	569

The research team calculated a survey response rate of 21.1%, using the standards and formulas set forth by the American Association for Public Opinion Research (AAPOR). Table 33 provides a detailed disposition for the residential survey sample.

$$(I+P)/(I+P) + (R+NC+O) + e(UH+UO)^{33}$$

³³ The “e” denotes an estimate. This estimate is based on the proportion of eligible households among all numbers for which a definitive determination of status was obtained. Note that this is a conservative estimate.

TABLE 33. AAPOR OUTCOMES

		RESIDENTIAL
AAPOR RESPONSE RATES		
Total phone numbers used		3,411
I=Complete Interviews (1.1) phone and online		569
P=Partial Interviews (1.2)		4
R=Refusal or break off (2.1)		438
NC=Non-Contact (2.2)		1,270
O=Other (2.3)		85
UH=Unknown household (3.1)		315
UO=Unknown other (3.2, 3.9)		124
Response Rate		21%
Cooperation Rate		56%

Like in the past ODC report, we found a statistically significant difference in awareness of Mass Save between the telephone mode and online survey mode. Significantly more online respondents were aware of the Mass Save brand compared to the telephone respondents. We consider these differences appropriate since we are accessing different parts of the MA population via the phone or online. As such, we do not analyze or report differences by mode in the report.

TABLE 34. AWARENESS BY SURVEY MODE

		TELEPHONE	ONLINE
AWARENESS			
Aware of Mass Save*		51%	81%

*Statistically significant difference at $p < .01$.

DETAILED C&I SURVEY METHODS

This section provides detailed information about the C&I population frame provided by DNV-GL, the survey sample frame developed by ILLUME, the survey fielding, and the number of completed surveys.

SAMPLING STRATEGY

Population Frame. Like with the residential population, the ILLUME team used a random sample of PA C&I customers provided by DNV-GL as our population frame because MA evaluation contractors no longer have access to full customer population data. DNV-GL again provided population data in two waves. DNV-GL prepared the random sample of C&I customers as follows:

- Customer accounts were excluded if they were considered very large electric or gas accounts, including³⁴:
 - Electric: accounts with greater than 10,000,000 annual kWh usage
 - Gas: accounts with greater than 200,000 annual therm usage
- Customer accounts with specific rates codes were excluded, including street lights, water pumps, and cell towers³⁵
- Records were excluded for customers that were not eligible to be contacted for the survey, including:
 - Do not contact lists provided by the PAs
 - Customers participating in, or solicited for, other research samples and surveys
- Generated random sample across electric and gas

The ILLUME team endeavored to reflect the population of C&I accounts in Massachusetts. However, we did not have access to full C&I population data. As such, we used the 2017 survey report and results to estimate the total desired sample size by PA and provided this information to DNV-GL for the sample draw.

Because of the high number of missing and duplicated phone numbers, ILLUME requested a subsequent random sample of C&I customers, totaling 30,000 small- and medium-business records. ILLUME generated the final survey sample from this second sample of 30,000 records. Based on our request, DNV-GL provided the representative sample displayed in Table 35.

TABLE 35. RANDOM SAMPLE PROVIDED BY DNV-GL

		COUNT			PERCENT		
		FULL POP	REQUESTED POP	POP FRAME	FULL POP	REQUESTED POP	POP FRAME
FUEL & PA							
Electric	CLC	25,842	22,939	1,510	6.8%	7.0%	6.7%
	EVERSOURCE	149,764	137,328	9,441	39.2%	42.0%	42.0%
	EVERSOURCE	21,031	19,173	1,306	5.5%	5.9%	5.8%
	NGRID	181,869	144,092	9,977	47.6%	44.1%	44.4%
	UNITIL	3,810	3,539	243	1.0%	1.1%	1.1%
	Total	382,316	327,071	22,477	100.0%	100.0%	100.0%
Gas	BERKSHIRE	5,328	5,196	346	4.8%	4.8%	4.6%
	COLUMBIA	34,332	33,645	2,298	30.8%	30.8%	30.5%
	EVERSOURCE	30,246	29,403	2,032	26.9%	26.9%	27.0%
	LIBERTY	4,216	4,031	289	3.7%	3.7%	3.8%
	NGRID	81,117	35,302	2,431	32.3%	32.3%	32.3%

³⁴ The PA databases do not have a systemic flag for managed accounts across the PAs. In addition, the PAs have varying definitions of what constitutes a large account. As such, the research team decided to exclude all electric accounts with greater than 10,000 annual kWh usage and all gas accounts with greater than 200,000 annual therm usage. We did not exclude accounts where the PA rate code indicated “large.”

³⁵ The PA databases do not have a systemic “customer” ID that is 100% filled or guaranteed to be comparable across the PAs. DNV-GL was able to exclude lighting, water pumps, cell towers, etc., but it is possible that some of these types of accounts were not excluded, since this identification is not treated consistently across the PA databases.

UNITIL	1,790	1,738	127	1.6%	1.6%	1.7%
Total	157,029	109,315	7,523	100.0%	100.0%	100.0%

Survey sample frame. The ILLUME team cleaned the original sample data of 15,000 small- and medium-business records provided by DNV-GL to remove records without phone numbers and duplicated phone numbers. This left a sample of 10,006 total records from which the ILLUME team selected a random sample of 200 records for the survey pre-test.

Because of the high number of missing and duplicated phone numbers, ILLUME requested a subsequent random sample of C&I customers, totaling 30,000 small- and medium-business records. After again removing duplicated phone numbers and addresses and customers included in the pre-test sample, a total of 26,362 records remained. Table 36 displays the number of records available for sampling from each wave and in total, before and after cleaning and removing duplicates.

TABLE 36. NUMBER OF C&I ACCOUNTS IN POPULATION BEFORE AND AFTER DATA CLEANING

FUEL & PA		POPULATION FRAME	
		Before Cleaning	After Cleaning
Electric	CLC	1,510	6.7%
	EVERSOURCE	9,441	42.0%
	EVERSOURCE	1,306	5.8%
	NGRID	9,977	44.4%
	UNITIL	243	1.1%
	Total	22,477	100.0%
Gas	BERKSHIRE	346	4.6%
	COLUMBIA	2,298	30.5%
	EVERSOURCE	2,032	27.0%
	LIBERTY	289	3.8%
	NGRID	2,431	32.3%
	UNITIL	127	1.7%
Total	7,523	100.0%	

From the 26,362 records, the ILLUME team selected a random sample of 15,000 for the C&I survey. It should be noted that phone numbers were not available in the PA records supplied to DNV-GL for Eversource/WMECO, Columbia, or Liberty Gas. However, it is likely that through the other PAs (e.g., the electric PA of Liberty Gas customers), we included customers of each of these utilities in our sample. **Error! Reference source not found.** displays the sample frame provided to the survey house.

TABLE 37: FINAL SAMPLE FRAME PROVIDED TO SURVEY HOUSE

FUEL & PA		POPULATION FRAME		SAMPLE
		Before Cleaning	After Cleaning	
Electric	CLC	1,510	6.7%	1,426
	EVERSOURCE	9,441	42.0%	8,557
	EVERSOURCE	1,306	5.8%	1,294
	NGRID	9,977	44.4%	8,550
	UNITIL	243	1.1%	205
	Total	22,477	100.0%	20,032
	BERKSHIRE	346	4.6%	307

Gas	COLUMBIA	2,298	30.5%	2,241
	EVERSOURCE	2,032	27.0%	1,699
	LIBERTY	289	3.8%	269
	NGRID	2,431	32.3%	1,714
	UNITIL	127	1.7%	100
	Total	7,523	100.0%	6,330

FIELDING

We conducted a pre-test of the C&I survey beginning on January 8 to test for customer response to the introductory outbound phone script, customer understanding of the survey, and to identify any errors in survey skip-logic programming. Based on this pre-test, we made minor changes to enhance customer responsiveness to the survey. The research team fielded the C&I surveys from January 16 – February 21, 2018.

We mailed 7,495 C&I customers a survey invitation letter. The letter described the survey and potential for respondents to win one of the fifteen \$20 gift cards and provided instructions for completing the survey via telephone or online. C&I customers who did not respond to the mail invitations were then called directly via telephone to complete an interview.

SURVEY COMPLETES

The research team did not set quotas for survey completes by PA. This is because we monitored survey completes to ensure proportional representation by PA, and the simple random sample performed well in this regard. The research team achieved 232 completed surveys.

In addition to the PA supplying the customer record, DNV-GL identified the “likely” other utility based on customer locations. For example, for customers of Columbia Gas, DNV-GL supplied the “likely” electric PA. Table 38 displays the number of completes by the likely PA.

TABLE 38. C&I CUSTOMER SAMPLE FRAME AND SURVEY COMPLETES

	POPULATION FRAME		SURVEY COMPLETES		PERCENT DIFFERENCE
	n	%	n	%	
ESTIMATED GAS PA					
Berkshire Gas	1,078	3.7%	9	5.0%	-1.3%
Columbia Gas	5,836	20.1%	26	14.5%	5.5%
Eversource	10,438	35.9%	56	31.3%	4.6%
Liberty Gas	866	3.0%	13	7.3%	-4.3%
NGrid	10,401	35.8%	71	39.7%	-3.9%
Unitil	473	1.6%	4	2.2%	-0.6%
Sub-Total	29,092		179		
<i>No information on Gas PA</i>			53		
<i>Grand total of completes</i>			232		
	POPULATION FRAME		SURVEY COMPLETES		PERCENT DIFFERENCE
	n	%	n	%	
ESTIMATED ELECTRIC PA					
CLC	1,510	6.7%	14	6.3%	0.5%
Eversource	10,747	47.8%	88	39.3%	8.5%

NGrid	9,977	44.4%	116	51.8%	-7.4%
Unitil	243	1.1%	6	2.7%	-1.6%
Sub-Total	22,477		224		
<i>No information on Electric PA</i>			8		
<i>Grand total of completes</i>			232		

The research team calculated a C&I survey response rate of 9.0%, using the standards and formulas set forth by the American Association for Public Opinion Research (AAPOR). This is higher than the 2016 reported response rate of 3.5% among C&I customers. Specifically, the response rate was calculated using the following:

$$(I+P)/(I+P) + (R+NC+O) + e(UH+UO)^{36}$$

TABLE 39. AAPOR OUTCOMES

COMMERCIAL	
AAPOR RESPONSE RATES	
Total phone numbers used	3,468
I=Complete Interviews (1.1) phone and online	232
P=Partial Interviews (1.2)	5
R=Refusal or break off (2.1)	560
NC=Non-Contact (2.2)	1,308
O=Other (2.3)	172
UH=Unknown household (3.1)	372
UO=Unknown other (3.2, 3.9)	109
Response Rate	9%
Cooperation Rate	29%

³⁶ The “e” denotes an estimate. This estimate is based on the proportion of eligible households among all numbers for which a definitive determination of status was obtained. Note that this is a conservative estimate.

APPENDIX C. SURVEY FREQUENCIES

See Excel spreadsheets.

APPENDIX D. SURVEY GUIDES

SURVEY

JANUARY 12, 2018 | SWM01 - RESIDENTIAL GENERAL POPULATION SURVEY INSTRUMENT

TO: Massachusetts Program Administrators and Energy Efficiency Advisory Council Consultants

FROM: ILLUME ADVISING

Reviewer Note: Many questions within this survey are drawn from two previously fielded survey instruments: the Massachusetts Statewide Energy Efficiency Consumer Study (Opinion Dynamics and Shelton Group) and the Massachusetts Energy Efficiency Programs Non-Participant Panel Survey (Residential Retrofit Evaluation Group). In some cases, the wording of the questions or response categories has changed slightly.

Answer responses in parenthesis will **not be read** during the phone survey and will not appear as options on the online survey. If all answer choices are in parenthesis, the question will be an open end for the web survey. For the web survey, “Don’t know” and “Refused” will be excluded in the answer choices, however, respondents can go to the next question without answering.

RESIDENTIAL SURVEY GUIDE

PHONE OUTBOUND INTRODUCTION

Hi, this is *[Interviewer Name]* from Ewald and Associates and I’m calling to conduct a brief survey on behalf of a statewide research initiative. Upon completion of this survey you will be entered into a drawing to win one of 25 \$20 Amazon Gift Cards. Please note that this is not a sales call.

[IF NAME IS AVAILABLE] May I please speak with **<NAME>**?

[IF NAME IS NOT AVAILABLE OR IF NEEDED] May I please speak with someone who is involved in making decisions about your home? *(If needed: Improvements such as replacing heating equipment or purchasing appliances.)*

(IF NEEDED: We’re conducting a survey to gather information about advertisements you and other residents in the state are exposed to. My questions should take about 10 minutes to complete and your responses will be kept anonymous.)

PHONE INBOUND INTRODUCTION

Can you please verify your PIN number is **<SURVEYPIN>**? *(IF INCORRECT PIN, DISPO AS 95 AND INPUT CORRECT PIN/RECORD)*

Thank you very much for calling to participate in this important study. My name is [Interviewer Name]. The questions should take about 10 minutes of your time.

PHONE INTRODUCTION

Thank you for your interest in this survey. Your participation is very important to us and the state of Massachusetts. Upon completion of this survey, you will be entered into a drawing to win one of 25 \$20 Amazon gift cards.

We're conducting this survey to gather information about advertisements you and other residents in the state are exposed to. The survey should take about 15 minutes to complete and your responses will be kept anonymous. Thank you very much for calling to participate in this important study. My name is [Interviewer Name]. The questions should take about 10 minutes of your time.

WEB INTRODUCTION

Thank you for your interest in this survey. Your participation is very important to us and the state of Massachusetts. Upon completion of this survey, you will be entered into a drawing to win one of twenty \$25 Amazon Gift Cards.

We're conducting this survey to gather information about advertisements you and other residents in the state are exposed to. The survey should take about 10 minutes to complete and your responses will be kept anonymous.

LANGUAGE

Do you want to continue in English or Spanish?

¿Quiere usted continuar en inglés o español?

English/Inglés

Spanish/Español [Switch to Spanish survey]

A. SCREENER

A1. Do you or anyone in your household work for an advertising agency or a market research firm?

1. Yes [Thank and Terminate]

2. No

98. [Not Sure] [Thank and Terminate]

99. [Refused] [Thank and Terminate]

A2. Do you or anyone in your household work for a natural gas or electric company or an energy efficiency service provider?

1. Yes [Thank and Terminate]

2. No

98. [Not Sure] [Thank and Terminate]

99. [Refused] [Thank and Terminate]

B. SECTION 1: EXPOSURE TO INFORMATION SOURCES

B1. What organizations are you aware of that promote energy efficiency?

[MULTIPLE RESPONSE]

[OPEN END]

1. (Mass Save)
2. (Utility companies or Energy Efficiency Service Providers)
3. (Manufacturers – ex. Cree, General Electric)
4. (ENERGY STAR®)
5. (Renewable energy organizations/representatives/companies i.e. Cape Wind)
6. (Non-profit/non-governmental organization dedicated to environmental Issues – i.e. CET)
7. (Non-profit/non-governmental organization not specifically dedicated to environmental issues (i.e. churches)
8. (State or federal government)
96. (None)
97. [Other][Specify]
98. [Not Sure]
99. [Refused]

B2. If you wanted to know more about how to lower your energy bills, where would you look for information?

[MULTIPLE RESPONSE]

[OPEN END]

1. (Mass Save website)
2. (Website for Utility/Energy Efficiency Service Provider)
3. (Call utility/Energy Efficiency Service Provider 800 number)
4. (Internet Search/Online (i.e., Google, Yahoo))
5. (Utility Bill, NOT website or phone number)
6. (Social Media (i.e., Facebook, Twitter, etc.))
7. (Friends, family, coworkers)
8. (State/local/federal government agency or their website)
97. [Other][Specify]
98. [Not Sure]
99. [Refused]

B3. What websites, if any, would you visit to find information on energy saving tips or practices? [MULTIPLE RESPONSE]

1. (Utility / Energy Efficiency Service Provider Website)
2. (Mass Save website)
3. (Internet Search Engine (i.e., Google, Yahoo))
4. (Local/state/federal government-affiliated website)
5. (ENERGY STAR website)
96. (None)
97. [Other][Specify]
98. [Not Sure]
99. [Refused]

C. SECTION 2: AWARENESS OF MASS SAVE

C1. Have you seen or heard the term, "Mass Save"?

1. Yes
2. No
98. [Not Sure]
99. [Refused]

[ASK C2 after C9 IF C1=1; ELSE ASK C2 after C1]

C2. C2_1:[WEB ONLY][IF C1 > 1]

Before taking this survey, had you seen this logo?



1. Yes
2. No
98. [Not Sure]
99. [Refused]

[Create Mass Save Variable=1 IF B1=1 OR B2=1 OR B3=2 OR C1=1 OR C2=1]

[IF MASS_SAVE=0, SKIP TO F1]

C3. How familiar are you with Mass Save? Would you say you are...?

1. Very unfamiliar
2. Somewhat unfamiliar
3. Neither familiar nor unfamiliar
4. Somewhat familiar
5. Very familiar
98. [Not Sure]
99. [Refused]

C4. What do you associate with Mass Save?

[MULTIPLE RESPONSE; UP TO 5]

[OPEN END]

1. (Home energy assessment)
2. (Resource for energy information)
3. (Utility companies or energy efficiency service providers)
4. (Saving money on my energy bill)
5. (Rebates/Discounts on high-efficiency equipment and products)
6. (Makes it easy to save energy)
97. [Other][Specify]
98. [Not Sure]
99. [Refused]

C5. Do you associate Mass Save with energy?

(If needed: This includes electricity, natural gas, oil or propane)

1. Yes
2. No
98. [Not Sure]
99. [Refused]

C6. Which of the following do you MOST associate with Mass Save?

[ROTATE]

1. Home energy assessments
2. Rebates for a variety of equipment and products
3. A resource for energy efficiency information and services
4. A way to lower your energy bills
5. Making saving energy easy
98. [Not Sure]
99. [Refused]

C7. How did you first learn about Mass Save?

[ROTATE]

1. Utility company or energy efficiency service provider
2. State government
3. Friend, family member, or colleague

97. [Other][Specify]

98. [Not Sure]

99. [Refused]

C8. Please name any organizations that you think sponsor Mass Save. A best guess is fine.

Select all that apply.

1. (Utility company or energy efficiency service provider)
2. (State government)

97. [Other][Specify]

98. [Not Sure]

99. [Refused]

[ASK IF C8=1]

C9. On a 0 to 10 scale, with 0 being not at all important and 10 being extremely important, how important is it that your utility or energy efficiency service provider sponsors Mass Save? [Record 0-10, DK, Refused]

C2_ 2. [WEB ONLY] [IF C1=1]

Before taking this survey, had you seen this logo?



1. Yes

2. No

98. [Not Sure]

99. [Refused]

[IF B2=1 OR B3=2, SKIP C10]

C10. Did you know there is a website called MassSave.com?

- 1. Yes
- 2. No
- 98. [Not Sure]
- 99. [Refused]

[IF (C10=2, 98 OR 99) AND (B2<>1) AND (B3<>2), SKIP TO NEXT SECTION]

C11. Since June 2017, how many times have you visited the MassSave.com website?

- 1. None
- 2. Once
- 3. 2-5 times
- 4. 6-10
- 5. 11 or more
- 98. [Not Sure]
- 99. [Refused]

C12. Did you visit the MassSave.com website before June 2017?

- 1. Yes
- 2. No
- 98. [Not Sure]
- 99. [Refused]

[ASK IF C12=1]

[IF C11=1 AND C12=2, SKIP TO D1]

C13. How frequently did you visit the MassSave.com website prior to June 2017? Would you say...

- 1. Only once
- 2. 2-5 times
- 3. 6-10 times
- 4. 11 or more times
- 98. [Not Sure]
- 99. [Refused]

C14. When you visited the MassSave.com website, what information were you searching for? **[SELECT ALL THAT APPLY; ROTATE]**

- 1. Information on rebates and incentives for my home
- 2. Information on energy assessments for my home
- 3. Information in the Mass Save blog
- 4. Information on energy efficiency tips
- 97. [Other][Specify]
- 98. [Not Sure]
- 99. [Refused]

C15. On a scale of 0 to 10, with 0 being not at all useful and 10 being extremely useful, how useful was the information you found on the MassSave.com website when you last visited it?

[RECORD 0-10 SCALE, DK, REFUSED]

[ASK IF C15<3, ELSE SKIP TO C17]

C16. Why do you say that?

[OPEN END; RECORD VERBATIM]

C17. Is there anything missing on the MassSave.com website that you would have liked to see when you visited?

1. Yes

2. No

98. [Not Sure]

99. [Refused]

[ASK IF C17=1, ELSE SKIP TO C19]

C18. What information would you have liked?

[OPEN END; RECORD VERBATIM]

C19. On a scale from 0 to 10, where 0 is “not at all likely” and 10 is “extremely likely”, how likely are you to recommend the MassSave.com website to a friend or family member based on your last visit?

[RECORD 0-10 SCALE, DK, REFUSED]

D. SECTION 3: EXPOSURE TO MASS SAVE MESSAGING (AIDED)

[IF MASS_SAVE=0, SKIP TO F1]

D1. We’re interested in all of the places where you may have heard about Mass Save. Have you ever ...

[ROTATE]

a. Seen a Mass Save billboard?

b. Heard about Mass Save on the radio?

c. Seen online advertising, videos, or infographics for Mass Save?

d. Seen an advertisement for Mass Save on public transportation (e.g. the T, commuter rail or bus)?

e. Seen information about Mass Save when shopping for appliances?

f. Seen information about Mass Save on social media sites (e.g., Facebook or Twitter)?

1. Yes

2. No

98. [Not Sure]

99. [Refused]

D2. Where else have you seen or heard about Mass Save?

[RANDOMIZE]

Select all that apply

1. (Energy Bill)
2. (In the mail)
3. (Word of Mouth, friends/family/coworkers)
96. (Nowhere else)
97. [Other][Specify]
98. [Not Sure]
99. [Refused]

[ASK IF D2=1, 2, 3, 97]

D3. Was it within the past year or before that that you saw or heard about Mass Save?

1. (Past year)
2. (Before that/longer than 1 year ago)
98. [Not Sure]
99. [Refused]

[If ALL D1a-f > 2 AND D2 = 96/98/99, SKIP TO E1]

D4. Do you think the messages you heard were clear?

1. Yes
2. No
98. [Not Sure]
99. [Refused]

E. BASELINE FOR 2016 CAMPAIGN

E1. On a scale from 0 to 10 where 0 is “not at all agree” and 10 is “completely agree”, how much do you agree with the following statement?

Mass Save makes it easy to save money on your energy bill.

[SCALE OF 0-10, 98=DK, 99=REF]

F. ACTIONS BASED ON MASS SAVE MESSAGING

F1. Prior to this call, did you know that there are programs, solutions, and rebates to help you save energy in your home?

1. Yes
2. No
98. [Not Sure]
99. [Refused]

[SKIP TO F5 IF F1<>1]

F2. What type of help or assistance do these programs, solutions, and rebates offer?

[OPEN END]

1. (Home energy audits/assessments/Home Energy Assessments)
2. (Rebates/Incentives/loans/cost savings for efficient equipment (general))
3. (ENERGY STAR® lighting and products)
4. (Saving energy or general efficiency tips)
5. (Income-Eligible Programs/Budget Programs)
6. (Tax incentives)
7. (Rebates/Programs – Specific Program)
8. Refrigerator or freezer recycling
96. (None)
97. [Other][Specify]
98. [Not Sure]
99. [Refused]

F3. What groups or organizations offer these programs, solutions, and incentives?

[OPEN END]

1. (Mass Save)
2. (Utility companies/energy efficiency service providers)
3. (State government)
4. (Contractors/Trade allies/Electricians/etc.)
97. [Other][Specify]
98. [Not Sure]
99. [Refused]

F4. What programs are you aware of?

1. (Home Energy Assessment)
2. (Appliance Rebates)
3. (Appliance Recycling)
4. (Heating & Water Heating Rebates)
5. (Cooling Rebates)
6. (Insulation/Air Sealing Incentives)
97. [Other][Specify]
98. [Not Sure]
99. [Refused]

- F5. In the past year, have you made any of the following changes to your home? Have you...
- a. Installed an energy saving furnace, boiler, water heater, thermostat, or central air conditioner?
 - b. Added square footage to your home?
 - c. Added insulation, performed air or duct sealing, or replaced windows?
1. Yes
 2. No
 98. [Not Sure]
 99. [Refused]

[SKIP TO F9 Intro IF F1=2]

- F6. In the past year, have you utilized an energy saving program, service, or rebate sponsored by your utility or energy efficiency service provider?

This might include participating in a home energy assessment or applying for rebates or discounts for energy saving lighting, appliances, heating, water heating, and cooling equipment.

1. Yes
2. No
98. [Not Sure]
99. [Refused]

[GEN VAR <PART>: IF F6=1, <PART>=1; ELSE <PART>=0]

[IF <PART>=0, SKIP]

- F7. What program(s), services, or rebates did you utilize?

[ACCEPT MULTIPLE RESPONSES; INTERVIEWER NOTE ORDER OF REPORTING]

[OPEN END]

1. (Home Energy Assessment/Audit)
2. (Appliance Rebates)
3. (Appliance Recycling)
4. (Heating & Water Heating Rebates)
5. (Cooling Rebates)
6. (Insulation Incentives)
97. [Other][Specify]
98. [Not Sure]
99. [Refused]

[SKIP IF <PART>=1, OR IF (<PART>=0 AND F5a AND F5b AND F5c <>1)]

- F8. Why didn't you utilize any of the energy saving programs, services, or rebates when you completed recent work on your home?

[OPEN END]

98. [Not Sure]
99. [Refused]

[ASK ALL]

[F9 INTRO] I appreciate your feedback. Mass Save is in fact a statewide energy efficiency partnership between utilities, energy efficiency service providers and the state of Massachusetts to provide programs for ALL Massachusetts homes and businesses to save energy. These programs include home energy assessments and rebates and incentives for installing energy efficient lighting, appliances, heating and cooling systems, home insulation, air sealing or improving the energy performance of your home.

F9. Were you aware of this before this call?

1. Yes
2. No
98. [Not Sure]
99. [Refused]

F10. And based on this general description, do you have a very favorable, somewhat favorable, somewhat unfavorable opinion, or a very unfavorable opinion of Mass Save?

1. (Very favorable)
2. (Somewhat favorable)
3. (Somewhat unfavorable)
4. (Very unfavorable)
98. [Not Sure]
99. [Refused]

G. MEDIA USE

Next, I'd like to ask a few questions about your media usage.

G1. On average how often do you listen to the radio?

1. Every Day
2. Often
3. Occasionally
4. Never
98. [Not Sure]
99. [Refused]

[ASK IF G1 <> 4]

G2. What time are you most likely to listen to the radio?

1. Morning (Breakfast/Morning Drivetime)
2. Mid-morning/Afternoon (Daytime)
3. Early evening (Evening Drivetime)
4. Late evening
98. [Not Sure]
99. [Refused]

G3. About how often do you use the internet?

1. Several times a day
2. About once a day
3. 3-5 days a week
4. 1-2 days a week
5. Every few weeks
6. Less than every few weeks
7. Never
98. [Not Sure]
99. [Refused]

H. DEMOGRAPHICS

H1. Do you own or rent your home?

1. (Own)
2. (Rent)
97. [Other][Specify]
98. [Not Sure]
99. [Refused] [FOR WEB: PREFER NOT TO ANSWER]

H2. What type of residence do you live in?

[READ CATEGORIES] [ROTATE]

1. Single-family
2. Duplex or two-family
3. Apartment/condo in a 2-4-unit building
4. Apartment/condo in a 5+ unit building
5. Townhouse or row house (shared/adjacent walls to another house)
6. Mobile home, house trailer
97. [Other][Specify]
98. [Not Sure]
99. [Refused] [FOR WEB: PREFER NOT TO ANSWER]

H3. In what year were you born?

[NUMERIC OPEN END] [1890-1996, 9999 REFUSED]

H4. Which of the following best represents your annual household income from all sources in 2016, before taxes? Including yourself, how many people reside in this home for each of the age categories listed (the total number will be calculated for you)? Please remember to include yourself in the count.

1. ____ Number of children 6 and younger
2. ____ Number of children 7 to 17
3. ____ Number of adults 18 to 34
4. ____ Number of adults 35 to 50
5. ____ Number of adults 51 to 64
6. ____ Number of adults 65 and older
7. ____ Total household members including yourself
98. [Not Sure]
99. [Refused] [FOR WEB: PREFER NOT TO ANSWER]

[PROGRAMMING NOTE: H4.5 SHOULD EQUAL THE SUM OF H4.1 TO H4.4, OTHERWISE SHOW MESSAGE: "THE TOTAL NUMBER OF HOUSEHOLD MEMBERS IS NOT CORRECT BASED ON THE INFORMATION PROVIDED. PLEASE CORRECT TOTAL HOUSEHOLD MEMBERS OR NUMBER OF MEMBERS WITHIN EACH AGE GROUP CATEGORY."]

H4VERIFY:

BASED ON THE INFORMATION YOU JUST ENTERED, INCLUDING YOURSELF THERE ARE %H4_7% PEOPLE IN YOUR HOUSEHOLD.

IS THAT CORRECT? IF THAT NUMBER IS INCORRECT, YOU WILL RETURN TO THE PREVIOUS PAGE SO YOU CAN UPDATE YOUR ANSWERS.

YES, THAT IS CORRECT

NO, THAT IS INCORRECT (SKP H4)

H5. What was your total annual reported household income in 2016 before any taxes?

1. Less than \$34,000
2. \$34,001-\$39,700
3. \$39,701-\$45,300
4. \$51,001-\$56,700
5. \$56,701-\$62,300
6. Greater than \$68,000
7. Don't know
8. Refused

PROGRAMMING NOTE: USE TABLES PROVIDED IN EXCEL FILE TO PROVIDE RANGES BASED ON RESPONSE TO A1, ROUNDING UP TO THE NEAREST HUNDREDS FOR READABILITY.

AS AN EXAMPLE, IF H4.5=1 (SINGLE HOUSEHOLD MEMBER), SHOW THE FOLLOWING AND THEN CATEGORIZE AS NOTED:

	<i>Maximum SMI (DO NOT SHOW, REFERENCE ONLY)</i>	<i>Categorization (DO NOT SHOW, CODE FOR SURVEY SKIPS AND ANALYSIS)</i>
1. Less than \$34,000	<= 60%	LI
2. \$34,001-\$39,700	61%-70%	MI1
3. \$39,701-\$45,300	71%-80%	MI1
4. \$45,301-\$51,000	81%-90%	MI2
5. \$51,001-\$56,700	91%-100%	MI2
6. \$56,701-\$62,300	101%-110%	MI3
7. \$62,301-\$68,000	111%-120%	MI3
8. Greater than \$68,000	>120%	HES
9. I want to exit the survey	See below	

H6. What is the highest level of education you have completed?

- 1. Less than high school
- 2. High school graduate or equivalent (e.g., GED)
- 3. Attended some college (includes junior/community college)
- 4. Bachelor’s degree
- 5. Advanced degree
- 97. [Other][Specify]
- 98. [Not Sure]
- 99. [Refused] [FOR WEB: PREFER NOT TO ANSWER]

H7. What county do you currently live in?

[PHONE SURVEY = DO NOT READ CATEGORIES]

1. (Barnstable)
2. (Berkshire)
3. (Bristol)
4. (Dukes)
5. (Essex)
6. (Franklin)
7. (Hampden)
8. (Hampshire)
9. (Middlesex)
10. (Nantucket)
11. (Norfolk)
12. (Plymouth)
13. (Suffolk)
14. (Worcester) (*Pronounced Wuh-ster*) **[PRONUNCIATION NOTE IN PHONE SURVEY ONLY]**
96. (None of the above)
97. [Other][Specify]
98. [Not Sure]
99. [Refused] **[FOR WEB: PREFER NOT TO ANSWER]**

H8. Which utility or energy efficiency service provider currently provides your home's electric services?

(READ IF NECESSARY)

1. Cape Light Compact
2. National Grid (formerly KeySpan)
3. Liberty Utilities (formerly New England Gas)
4. Eversource (formerly NSTAR or WMECO) **[NOTE FOR INTERVIEWER FOR PHONE SURVEY ONLY: Pronounced as Weh-mee-ko]**
5. Unitil **[NOTE FOR INTERVIEWER FOR PHONE SURVEY ONLY: Pronounced, You-nih-til]**
96. (None of the above)
97. [Other][Specify]
98. [Not Sure]
99. [Refused] **[FOR WEB: PREFER NOT TO ANSWER]**

H9. Which utility or energy efficiency service provider currently provides your home's natural gas services?

1. Columbia Gas (formerly Bay State Gas)
2. Berkshire Gas
3. National Grid (formerly KeySpan)
4. Liberty Utilities (formerly New England Gas)
5. Eversource (formerly NSTAR or WMECO) *[NOTE FOR INTERVIEWER FOR PHONE SURVEY ONLY: Pronounced as Weh-mee-ko]*
6. Unitil *[NOTE FOR INTERVIEWER FOR PHONE SURVEY ONLY: Pronounced, You-nih-til]*
7. Blackstone Gas
96. (None of the above)

[FOR WEB: PREFER NOT TO ANSWER]

[ASK IF H9=96, 98, OR 99, ELSE SKIP H10]

H10. Our records show that your home zip code is <ZIP>. Is that correct?

6. Yes
7. No
98. [Not Sure]
99. [Refused] [FOR WEB: PREFER NOT TO ANSWER]

[ASK IF H10 = 2]

H11. What is your zip code?

[NUMERIC OPEN END]

98. [Not Sure]
99. [Refused] [FOR WEB: PREFER NOT TO ANSWER]

H12. Is <PHONE> the best phone number to reach you if you are a winner in the Amazon gift card drawing? This number will only be used to contact you regarding the prize.

[IF NEEDED: We are giving away twenty \$25 Amazon gift cards to individuals who complete this survey.]

8. Yes, <PHONE> is the best number.
9. A better number would be: [NUMERIC OPEN END]
98. [Not Sure]
99. [Refused]

H13. *[RECORD GENDER; DO NOT ASK]*

10. Male
11. Female
98. [Not Sure]
99. [Refused] [FOR WEB: PREFER NOT TO ANSWER]

Those are all of the questions. We appreciate your time and participation. Thank you on behalf of the sponsors of Mass Save.

SURVEY

JANUARY 12, 2018 | SWM01 - C&I CUSTOMER SURVEY INSTRUMENT

TO: Massachusetts Program Administrators and Energy Efficiency Advisory Council Consultants

FROM: ILLUME ADVISING

Reviewer Note: This survey will be administered via telephone to Commercial and Industrial (C&I) customers in Massachusetts. The goal of the survey is to gain sector specific insight into customer awareness of Mass Save, exposure to and perceptions of Mass Save marketing efforts, information-seeking behavior, and information about past program participation.

Many questions within this survey are drawn from a previously fielded survey instrument from Opinion Dynamics. Answer responses in parenthesis will **not be read** during the phone survey.

C&I SURVEY GUIDE

PHONE INTRODUCTION

Hi, my name is [Interviewer Name] and I'm calling from Ewald and Associates on behalf of a statewide research initiative. This is not a sales call. We are conducting a survey to gather information about advertisements you and other businesses in the state are exposed to. May I please speak with the person responsible for making decisions about improvements in your business' facility? Upon completion of this survey, you will be entered into a drawing to win one of 15 \$20 Amazon gift cards. (IF NECESSARY: I am looking to speak with someone who might be involved in any decisions to improve or replace the systems in your facility, such as lighting or air conditioning.)

My questions should take about 10 minutes and your responses will be kept anonymous.

[Interviewer Note: If customer asks about how their information is kept secure, please use the following response, "We do not record the audio of these calls and we maintain safeguards to protect survey responses. These include, for example, physical security of our facilities, technical safeguards to protect electronic data, and manager supervision."]

WEB INTRODUCTION

Thank you for your interest in this survey. Your participation is very important to us and the state of Massachusetts.

Upon completion of this survey, you will be entered into a drawing to win one of 15 \$20 Amazon gift cards.

We are conducting this survey to gather information about advertisements you and other businesses in the state are exposed to.

The survey should take about 10 minutes to complete and your responses will be kept anonymous.

Click 'Next' to begin the survey

A. SCREENER

A1. Do you operate your business in a residential or commercial space?

1. (Residential)
2. (Commercial)
3. (Both)
97. [Other][Specify]
98. [Not Sure]
99. [Refused]

A2. Is your business located in Massachusetts?

1. Yes
2. No, no locations or facilities are in Massachusetts [Thank and Terminate]
3. Some locations or facilities are in Massachusetts
98. [Not Sure] [Thank and Terminate]
99. [Refused] [Thank and Terminate]

[ASK IF A2 = 3]

A3. What state do you work in?

1. Massachusetts
97. [Other][Specify]
98. [Not Sure]
99. [Refused]

A4. What is your position within the business?

1. (Business owner)
2. (Office Manager)
3. (Receptionist/Administrative Assistant/Clerical)
4. (Facilities/energy manager)
97. [Other][Specify]
98. [Not Sure]
99. [Refused]

B. AWARENESS OF MASS SAVE CAMPAIGN

B1. If you wanted to know more about how to lower your business's energy bills, where would you look for information?

SELECT ALL THAT APPLY

[MULTIPLE RESPONSE]

[WEB: ROTATE]

1. (Utility or energy efficiency service provider in general)
2. (Utility or energy efficiency service provider website)
3. (Utility or energy efficiency service provider 800 number)
4. (Mass Save website/MassSave.com)
5. (Search engine such as Google or Yahoo)
6. (Friends, family, coworkers)
7. (Contractor)
8. (Architect/Engineer)
9. (Energy bill)
10. (Mass Save General/Not Website)
11. (Trade Allies/Associations)
96. (I wouldn't look up any information)
97. [Other][Specify]
98. [Not Sure]
99. [Refused]

[IF B1=4 AND/OR 10, SKIP TO B3]

B2. Have you seen or heard the term, "Mass Save"?

1. Yes
2. No
98. [Not Sure]
99. [Refused]

[GENERATE VARIABLE B2_REC: IF B2 = 1 OR IF B1=4, 10, OR OTHER "MASS SAVE" OPEN END, THEN B2_REC=1, ELSE B2_REC=0]

[IF B2_REC<>1 SKIP TO B11]

B3. Do you associate Mass Save with energy?

(If needed: This includes electricity, natural gas, oil or propane)

1. Yes
2. No
98. [Not Sure]
99. [Refused]

B4. How familiar are you with Mass Save? Would you say you are...?

1. Very unfamiliar
2. Somewhat unfamiliar
3. Neither familiar nor unfamiliar
4. Somewhat familiar
5. Very familiar
98. [Not Sure]
99. [Refused]

B5. What do you associate with Mass Save?

[MULTIPLE RESPONSE; UP TO 5]

[OPEN END]

1. (Energy assessment or audit)
2. (Resource for energy information)
3. (Rebates/incentives for lighting or lighting controls)
4. (Rebates/incentives for heating equipment)
5. (Rebates/incentives for cooling equipment)
6. (Rebates/incentives for motors and VSDs)
7. (Rebates/incentives for compressed air projects)
8. (Rebates/incentives for Custom projects)
9. (Website)
10. (Technical assistance/advice)
11. (Utility companies and energy efficiency service providers)
12. (State government)
97. [Other][Specify]
98. [Not Sure]
99. [Refused]

B6. To the best of your knowledge, does Mass Save offer solutions for your business, your home or both?

1. (My business ONLY)
2. (My home ONLY)
3. (Both)
98. [Not Sure]
99. [Refused]

B7. Which of the following do you MOST associate with Mass Save?

[ROTATE]

1. An energy assessment program
2. Rebates for a variety of high-efficiency equipment
3. A campaign for change
4. A website that provides resources for energy efficiency information, services, and rebates
5. A way to lower your energy bills
6. Making saving energy easier

97. [Other][Specify]

98. [Not Sure]

99. [Refused]

B8. How did you first learn about Mass Save?

[ROTATE]

1. Utility company or energy efficiency service provider
2. State government
3. Friend, family member, or colleague

97. [Other][Specify]

98. [Not Sure]

99. [Refused]

B9. Please name any organizations that you think sponsor Mass Save. A best guess is fine.

SELECT ALL THAT APPLY

1. (Utility company or energy efficiency service provider)
2. (State government)

97. [Other][Specify]

98. [Not Sure]

99. [Refused]

[ASK IF B9=1; ELSE SKIP TO B11]

B10. On a 0 to 10 scale, with 0 being not at all important and 10 being extremely important, how important is it that your utility or energy efficiency service provider sponsors Mass Save? [RECORD 0-10, DK, REFUSED]

- 0. [NOT AT ALL IMPORTANT]
- 1. [NEITHER UNIMPORTANT OR UNIMPORTANT]
- 10. [EXTREMELY IMPORTANT]

[SKIP IF B1=4]

B11. Did you know there is a website called MassSave.com?

- 1. Yes
- 2. No
- 98. [Not Sure]
- 99. [Refused]

[IF B11<>1 AND B1<>4, SKIP C1]

B12. Since June 2017, how many times have you visited the MassSave.com website?

- 1. None
- 2. Once
- 3. 2-5 times
- 4. 6-10
- 5. 11 or more
- 98. [Not Sure]
- 99. [Refused]

B13. Did you visit the MassSave.com website before June 2017?

- 1. Yes
- 2. No
- 98. [Not Sure]
- 99. [Refused]

[ASK IF B13=1]

B14. How frequently did you visit the MassSave.com website prior to June 2017? Would you say...

- 1. Only once
- 2. 2-5 times
- 3. 6-10 times
- 4. 11 or more times
- 98. [Not Sure]
- 99. [Refused]

B15. When last you visited the MassSave.com website, what information did you search for?

[SELECT ALL THAT APPLY; ROTATE]

1. Information on rebates and incentives for my business
2. Information on energy assessments for my business
3. Information in the Mass Save blog
4. Information on energy efficiency tips
97. [Other][Specify]
98. [Not Sure]
99. [Refused]

B16. On a scale of 0 to 10, with 0 being not at all useful and 10 being extremely useful, how useful was the information you found on the MassSave.com website when you last visited it?

[RECORD 0-10 SCALE, DK, REFUSED]

11. [NOT AT ALL IMPORTANT]
5. [NEITHER UNIMPORTANT OR UNIMPORTANT]
6. [EXTREMELY IMPORTANT]

[ASK IF B16<3, ELSE SKIP TO B18]

B17. Why do you say that?

[OPEN END; RECORD VERBATIM]

B18. Is there anything missing on the MassSave.com website that you would have liked to see when you visited?

1. Yes
2. No
98. [Not Sure]
99. [Refused]

[ASK IF B18=1, ELSE SKIP TO B20]

B19. What information would you have liked?

[OPEN END; RECORD VERBATIM]

B20. On a scale from 0 to 10, where 0 is not at all likely and 10 is extremely likely, how likely are you to recommend the MassSave.com website to a friend or family member based on your last visit?

[RECORD 0-10 SCALE, DK, REFUSED]

7. [NOT AT ALL LIKELY]
8. [NEITHER UNLIKELY OR LIKELY]
9. [EXTREMELY LIKELY]

C. EXPOSURE TO MASS SAVE MESSAGING (AIDED)

[IF B2_REC<>1, SKIP TO E1]

C1. Mass Save is reaching out to businesses. We're interested in all of the places where you may have heard about how to save energy at your business. Have you ever

[ROTATE A-L]

[IF YES, FOLLOW UP WITH "IN THE PAST YEAR OR BEFORE THAT?"]

- g. Seen an article or advertisement for Mass Save in a business journal or magazine?
- h. Seen online advertising, videos, or infographics about Mass Save?
- f. Heard about Mass Save on the radio?
- j. Seen an advertisement for Mass Save on public transportation (e.g. the T, commuter rail or bus)?
- k. Seen a Mass Save billboard?
- l. Received an email about Mass Save?
 - 1. Yes, in the past year
 - 2. Yes, more than a year ago
 - 3. Never
 - 98. [Not Sure]
 - 99. [Refused]

C2. Are there any other places where you may have seen or heard about how to save energy at your business?

- 1. Yes [SPECIFY]
- 2. No
- 98. [Not Sure]
- 99. [Refused]

[ASK IF C2 =1]

C3. Was it within the past year or before that that you saw or heard about Mass Save?

- 1. (Past year)
- 2. (Before that/longer than 1 year ago)
- 98. [Not Sure]
- 99. [Refused]

[IF NO ANSWER IN C1 SERIES=1 or 2, AND C2 > 1 SKIP TO D1]

C4. Do you think the messages you heard were clear?

- 1. Yes
- 2. No
- 96. (Don't recall)
- 98. [Not Sure]
- 99. [Refused]

D. BASELINE FOR 2016 CAMPAIGN

D1. On a scale from 0 to 10 where 0 is “not at all agree” and 10 is “completely agree”, how much do you agree with the following statement?

Mass Save makes it easy to save money on your energy bill.

[SCALE OF 0-10, 98=DK, 99=REF]

- 10. [NOT AT ALL AGREE]
- 11. [NEITHER AGREE OR DISAGREE]
- 12. [EXTREMELY AGREE]

E. PROGRAM AWARENESS AND PARTICIPATION

E1. Prior to this call, did you know that there are programs, solutions, and incentives to help businesses in Massachusetts save energy?

- 1. Yes
- 2. No
- 98. [Not Sure]
- 99. [Refused]

[SKIP TO E8 IF E1<>1]

E2. What type of help or assistance do these programs, solutions, and incentives offer?

[OPEN END]

- 1. (Energy assessments)
- 2. (Rebates/incentives/loans/cost savings for efficient equipment)
- 3. (Saving energy/general efficiency tips)
- 4. (Rebates/incentives/programs for lighting upgrades)
- 5. (Rebates/incentives/programs for appliance upgrades)
- 6. (Rebates/incentives/programs for heating and cooling upgrades)
- 97. [Other][Specify]
- 98. [Not Sure]
- 99. [Refused]

E3. What groups or organizations offer these programs, solutions, and incentives?

[OPEN END]

- 1. (Utility companies/energy efficiency service providers)
- 2. (State government)
- 3. (Contractors/trade allies/Electricians/etc.)
- 4. (Mass Save)
- 98. [Not Sure]
- 99. [Refused]

E4. What programs are you aware of?

[MULTI RESPONSE; UP TO 5]

[OPEN END]

1. (Incentives for energy efficient HVAC)
2. (Incentives for energy efficient lighting)
3. (Incentives for energy efficient motors)
4. (Incentives for variable speed drives/VSDs)
5. (Incentives for refrigeration equipment)
6. (Incentives for renewable energy)
7. (Energy assessments)
8. (Technical assistance)
9. (Incentives for compressed air projects)
10. (Incentives for custom projects)
11. (Rebates/incentives/programs for appliance upgrades)

96. (None)
97. [Other][Specify]
98. [Not Sure]
99. [Refused]

E5. Did you hear about these utility or energy efficiency service provider programs, solutions, or incentives through Mass Save advertisements?

1. Yes
2. No

98. [Not Sure]
99. [Refused]

E6. Has your business utilized any of the programs, solutions, or incentives we've discussed?

1. Yes
2. No

98. [Not Sure]
99. [Refused]

[ASK IF E6 = 1, ELSE SKIP TO E8]

E7. What program, solution, or incentive did your business utilize?

[MULTIPLE RESPONSE, UP TO 5]

[OPEN END]

1. (Incentives for energy efficient HVAC)
 2. (Incentives for energy efficient lighting)
 3. (Incentives for energy efficient motors)
 4. (Incentives for variable speed drives/VSDs)
 5. (Incentives for refrigeration equipment)
 6. (Incentives for renewable energy)
 7. (Energy assessments)
 8. (Technical assistance)
 9. (Incentives for compressed air projects)
 10. (Incentives for custom projects)
 11. (Rebates/incentives/programs for appliance upgrades)
97. [Other][Specify]
98. [Not Sure]
99. [Refused]

[ASK ALL]

E8. I appreciate your feedback. Mass Save is, in fact, a statewide energy efficiency partnership between utilities, energy efficiency service providers and the state of Massachusetts to provide solutions and services for ALL Massachusetts homes and businesses to save energy. These programs include facility assessments and incentives for energy saving lighting, appliances, heating, and cooling.

Were you aware of this before this call?

1. Yes
 2. No
98. [Not Sure]
99. [Refused]

E9. And based on this general description, do you have a very favorable, somewhat favorable, somewhat unfavorable opinion, or a very unfavorable opinion of Mass Save?

1. (Very favorable)
 2. (Somewhat favorable)
 3. (Somewhat unfavorable)
 4. (Very unfavorable)
98. [Not Sure]
99. [Refused]

F. MEDIA USE

F1. On average how often do you listen to the radio?

1. Every Day
2. Often
3. Occasionally
4. Never
98. [Not Sure]
99. [Refused]

[ASK IF F1 <> 4]

F2. What time are you most likely to listen to the radio?

1. Morning (Breakfast/Morning Drivetime)
2. Mid-morning/Afternoon (Daytime)
3. Early evening (Evening Drivetime)
4. Late evening
98. [Not Sure]
99. [Refused]

F3. About how often do you use the internet?

1. Several times a day
2. About once a day
3. 3-5 days a week
4. 1-2 days a week
5. Every few weeks
6. Less than every few weeks
7. Never
98. [Not Sure]
99. [Refused]

G. FIRMOGRAPHICS

We're almost finished. I have a few final questions about your facility.

G1. What type of business do you operate?

(READ LIST IF NEEDED)

1. (Data Center)
2. (Laboratory)
3. (School or university)
4. (Healthcare or hospital)
5. (Hotel or motel)
6. (Industrial or manufacturing)
7. (Property management agency)
8. (Restaurant or food service)
9. (Warehouse, wholesaler, or storage)
10. (Grocery store)
97. [Other][Specify]
98. [Not Sure]
99. [Refused]

G2. Does your business own or lease this facility?

1. (Company owns facility)
2. (Company leases facility)
98. [Not Sure]
99. [Refused]

[ASK IF G2<>1, ELSE SKIP TO G4]

G3. Is your facility managed by a property management firm?

1. Yes
2. No
98. [Not Sure]
99. [Refused]

G4. Does your business have natural gas service?

1. Yes
2. No
98. [Not Sure]
99. [Refused]

[ASK IF G2=2]

G5. Does your business pay its own electric bill or is it included in your rent?

1. (Company pays own bill)
2. (Bill is included in rent)

98. [Not Sure]

99. [Refused]

[ASK IF G2=2 AND G4=1]

G6. Does your business pay your own natural gas bill or is it included in your rent?

1. (Company pays own bill)
2. (Bill is included in rent)
3. (Don't use gas)

98. [Not Sure]

99. [Refused]

G7. How many employees, full plus part-time, are employed at this facility?

1. 1 – 10
2. 11- 25
3. 26 – 50
4. 51 – 100
5. 101 – 500
6. More than 500

98. [Not Sure]

99. [Refused]

G8. What is the approximate square footage of your facility?

(IF NEEDED: For the facility where you are now. Your best guess is fine.)

[NUMERIC OPEN END]

[9999998 DK, 9999999 REF]

G9. Which of the following categories best describes your business' revenue in 2016?

1. Less than \$100,000
2. \$100,000 to less than \$500,000
3. \$500,000 to less than \$1 million
4. \$1 million to less than \$5 million
5. \$5 million to less than \$10 million
6. \$10 million to less than \$20 million
7. More than \$20 million
98. [Not Sure]
99. [Refused]

H. CLOSING

Great, thank you, those are all of the questions we have for you. As a thank you for your participation we will enter you into a drawing for one of twenty-five \$20 Amazon gift cards. What is the best email address to use to notify you if you have won the gift card?

Name:

Email:

We appreciate your time and participation. Thank you on behalf of the sponsors of Mass Save!

I. TERMINATION / INELIGIBLE RESPONDENTS

Based on your responses you are not eligible to complete the study. We appreciate your time and willingness to participate. Thank you on behalf of the sponsors of Mass Save."