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HEAT Loan Assessment (RES 37)

Prepared for:

**The Electric and Gas Program Administrators of Massachusetts
Part of the Residential Evaluation Program Area**

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August 1, 2018

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EXECUTIVE SUMMARY

The Massachusetts Program Administrators (PAs) promote the installation of residential energy efficiency measures through the HEAT loan, an interest buy-down offer that enables qualified customers to finance up to \$25,000 of efficiency improvements at 0% interest over as many as 7 years. This study determined the percentage of HEAT loan authorized customers (i.e., customers who received a home energy assessment (HEA), and authorization from their lead vendor (LV) to seek a HEAT loan from a participating lender for a recommended efficiency improvement) that completed the HEAT loan process and secured a loan. Relatedly, the team explored the barriers that prevented some customers from completing the process, and whether those customers install recommended measures regardless.

More than 80,000 customers had an HEA in 2017. Of these customers, approximately 6,600 (8%) worked with their LV to become authorized to seek a HEAT loan. Most of these customers (approximately 75%) completed the process and received a HEAT loan. There are four main, equally prevalent and often interrelated, reasons why 25% of authorized customers did not subsequently take out a HEAT loan:

1. **Declined by a Lender:** Due to income, existing debt, and/or low credit scores, some customers failed to meet participating lender's criteria. The PAs should explore the possibility of offering separate financing options tailored for lower income or lower credit customers (e.g., National Grid is working with Capital Good Fund, which specializes in financing options for higher risk customers).
2. **Cost Too High:** Despite the 0% interest rate, some customers remain uncomfortable with the total cost of and/or taking on the debt associated with the improvements. For these cost-sensitive customers, PAs should focus their messaging on lifecycle cost and how the customer's monthly energy savings will help offset their loan payments.
3. **Other Financial Priorities:** Some customers simply have other, non-efficiency related financial priorities. From a program perspective, this is the most difficult group to reach. One potential strategy is to focus on non-energy benefits of the recommended measures, giving the customer another value proposition if the energy benefits are not enough to encourage participation.
4. **Timing Was Not Right:** For some authorized customers, the timing to go to a lender is not right for several possible reasons, including the assumption that the lending process will be long and/or complicated. The PAs should clearly communicate that most customers were able to receive the loan on the same day from a lender, which could mitigate the perceived timing barrier.

Just over half of authorized customers still installed at least one of the recommended energy efficiency measures despite not utilizing the HEAT loan, using personal savings, credit cards, or a home equity line of credit. However, a meaningful subset of these customers reported that they installed less efficient equipment and/or fewer measures than they would have with the HEAT loan.

Heating systems are by far the most common measure installed by all customers in the study. Consequently, HVAC contractors present an important opportunity for driving participation. Addressing potential disincentives for HVAC contractors to recommend the HEAT loan (e.g., fear of losing the customer to a program contractor) could result in even more customers using the HEAT loan to install increasingly efficient HVAC equipment and explore other energy savings opportunities within their home.

While PAs and LVs expressed concern about the time and effort required to complete the LV authorization process, most customers indicated that the process was smooth and clear. However, almost a quarter of customers reported needing to apply multiple times or needing to resubmit missing or incorrect documentation. Resubmittal did not affect the rate at which customers completed the process but did negatively impact their satisfaction with the overall HEAT loan experience.

1. INTRODUCTION

Countless evaluations have confirmed that the most significant barrier for residential customers making energy efficiency improvements to their home is the initial or first cost of the improvements. The Massachusetts Program Administrators (PAs) address this persistent barrier through core initiative-specific incentives, and through the statewide HEAT loan. Since the PAs buy-down the interest associated with loans for eligible Home Energy Services (HES) and Heating & Cooling Equipment Initiative measures, HEAT loans allow qualified customers to spread out the initial cost of their projects, up to \$25,000 and over as many as 7 years, without paying interest.¹

Customers must complete numerous steps to become authorized for a HEAT loan and to secure financing from a participating lender.² These steps include:

- Learning about the Mass Save HEA and/or HEAT loan offer.
- Completing a HEA.
- Filling out the HEAT loan intake form.
- Obtaining one or more estimate of measure installation costs from a contractor (signed contractor proposal).
- Selecting a contractor to complete the work.
- Submitting the estimate from that contractor, and any additional requested documentation, to the PA vendor that verifies eligibility for financing.
- Being authorized by the PA vendor to seek a HEAT loan.
- Identifying a participating lender (i.e., bank or credit union).
- Delivering the HEAT loan authorization form provided by the vendor to the participating lender.
- Completing the participating lender's separate loan application process.
- Being approved by the vendor for the loan.
- Completing the measure installation.
- Scheduling and receiving an onsite verification inspection.

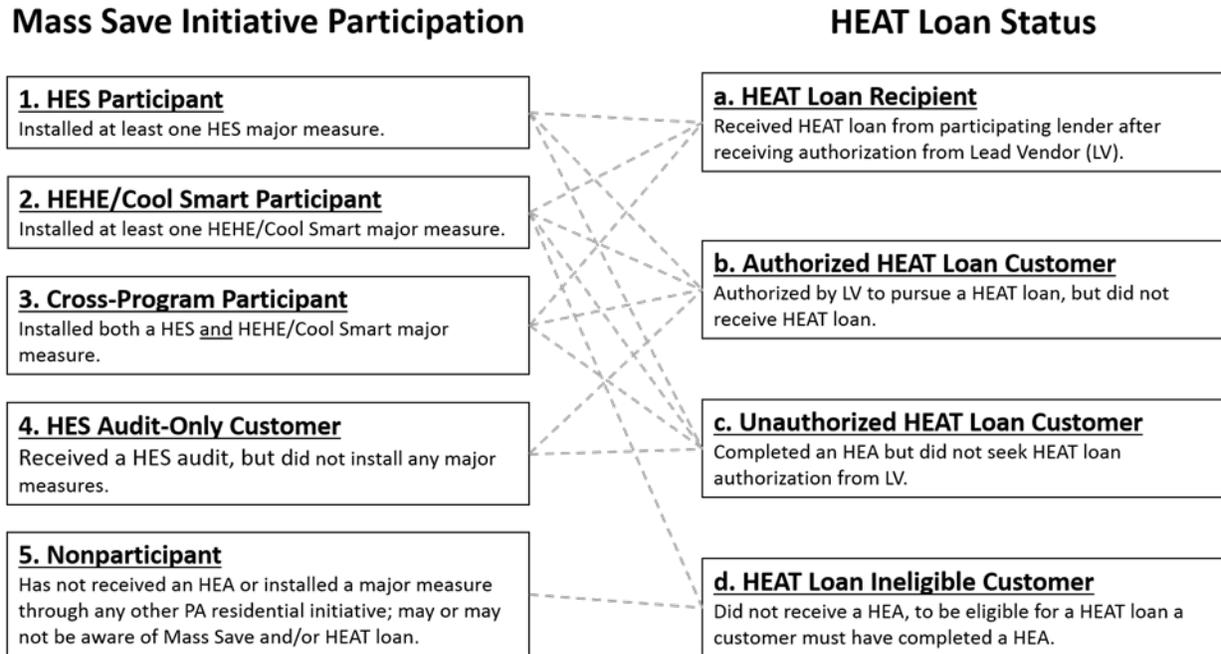
Some customers remain unaware of HES or are uninterested in having a HEA. Others, after receiving their HEA, decide not to pursue a HEAT loan. Others start the financing process but fall out midway, either due to the process requirements or because they decided not to move forward with the recommended improvements. Yet another subset of HES customers completed the financing process but were not approved for a loan by a participating lender.

¹ <http://www.masssave.com/en/residential/heating-and-cooling/offers/heat-loan-program>

² The PAs have created checklists to help customers through the HEAT loan process. These checklists vary by PA and are available either on MassSave.com or on PA-specific websites (like [this checklist](#) for Cape Light Compact).

Figure 1 visually illustrates the potential combinations of HES participation types and HEAT loan status. In total, there are 13 unique combinations of initiative participation and HEAT loan status. Dictated by the primary research question of this study—how many customers started the HEAT loan authorization process but did not finish it—the scope of the study focused on customer types A and B.

Figure 1. Mass Save Initiative Participation and HEAT Loan Status Combinations



1.1 Research Objectives

The study determined the percentage of customers who received an HEA and were authorized by a lead vendor (LV) to go on to secure the HEAT loan to finance energy efficiency measures. For those that start the process but do not take out the loan—referred to as authorized customers for this study—the team investigated what barriers prevented these customers from taking out the loan, what opportunities exist to overcome these barriers, and whether these customers still install recommended measures without the HEAT loan. In addition to these specific questions, the evaluation team also strove to better understand customers’ general experience going through the HEAT loan authorization and lender application process to identify what aspects of the current process are working, as well as any potential process improvements.

To investigate these overarching research objectives, the research team developed the following questions related to the HEAT loan process:

- What barriers do customers face in using a HEAT loan to improve the efficiency of their home?
- How do barriers differ by the customer types identified in Figure 1?
- How many customers receive authorization from a LV to seek a HEAT loan but do not subsequently take out a HEAT loan?

- At what point in the HEAT loan process do customers fall out of the financing process? What are the most common reasons?
- What are the primary reasons LVs do not provide authorization to customers seeking a HEAT loan?
- What are the primary reasons that participating lenders decline HEAT loan applications?
 - Who are these customers? Are they disproportionately from certain PAs, customer segments (e.g., income and geography), and/or seeking financing for specific measures?
- At what rate do these customers move forward with efficiency improvements without a HEAT loan?
- For those customers that did receive a HEAT loan, how important was the 0% interest rate?
- Would customers still utilize the HEAT loan if the PAs bought down some, but not all, of the interest?
- Had the customer heard about the HEAT loan prior to their HEA?
- What role did the HEAT loan play in the customer's decision to install the recommended measures?
- Were there any aspects of securing the loan that were difficult or problematic? If so, what?
- Are there opportunities to adjust delivery of the existing PA HEAT loan that will enable increased adoption of core initiative measures?

2. METHODOLOGY

2.1 PA and LV Interviews

The evaluation team conducted interviews to better understand the strengths, barriers, and opportunities related to the current delivery of the HEAT loan. Among the interviewees were several PA program managers (PMs), the two LVs that authorize customers to pursue the HEAT loan from a participating lender, and the vendor that processes reimbursements for those lenders (EFI). Given the targeted scope for the study, the evaluation team interviewed HEAT loan PMs from only two PAs—National Grid and Eversource—and did not directly contact representatives from any of the participating lending institutions. However, the team did interview the consultant that onboards and interacts with participating lenders, who offered some—albeit indirect—perspective regarding lenders.

While the evaluation team did not interview every PA as part of this study, the team's interviews with both LVs—which collectively authorize all the HEAT loans in the state—ensured representation for all PAs. In addition, the evaluation team recently interviewed every PA HES PM as part of the HES Process Evaluation (RES 34).³ Those interviews included questions regarding the HEAT loan. As a result, the evaluation team believes the results and information presented in this report reflect the effectiveness of HEAT loan delivery at a statewide level.

In total, the team completed six interviews. The full interview guide used for this task is included in Appendix A.

2.2 Analysis of 2017 HEAT Loan Data

RISE Engineering and CLEAResult provided data for all HES customers authorized to seek a HEAT loan in 2017. Combined, these datasets included information regarding 6,621 unique customers. This represents 8% of the 83,873 total customers that received an HEA in 2017.⁴ The provided data included HEAT loan status (authorized or recipient, determined by the presence or lack thereof of a loan completion date), the measures the customer was authorized to install, their PA, and their contact information. The evaluation team used the data to determine the percent of customers that completed the HEAT loan process, what measures were most commonly installed, how many customers installed multiple measures, and other key parameters.

2.3 Customer Survey

Using the 2017 HEAT loan data provided by both LVs, the evaluation team conducted a web survey with 360 total customers sampled from the LV data. The survey instrument, provided in Appendix A, included questions of all respondents on the authorization process before posing different questions to authorized customers and HEAT loan recipients. Authorized customers answered questions related to why they did not complete the HEAT loan process and whether they installed measures without the HEAT loan, while questions for recipients focused on whether the HEAT loan allowed them to install more measures than

³ http://ma-eeac.org/wordpress/wp-content/uploads/MA-RES-35-HES-Process-Evaluation-Comprehensive-Report_FINAL_31MAR2018.pdf

⁴ <http://masssavedata.com/Public/HESActivity>

they could have with alternative financing. To maintain customer satisfaction and encourage customers to complete the entire survey, the team designed the survey to take less than 15 minutes and sent an incentive (\$10 Amazon gift card) to all respondents. Select survey results are presented throughout the report, and a complete set of responses and survey weighting is included in Appendix D.

2.4 Customer Interviews

To complement the quantitative insights gained through the online survey with a deeper, more qualitative perspective on the HEAT loan process, the evaluation team completed 21 in-depth telephone interviews with HEAT loan authorized and recipient customers.

Although the total number of completed interviews was not designed to yield statistically significant results, and therefore did not merit a formal sampling process, the team did seek out a set of interviewees that captured the full range of HEAT loan customer types and experiences. First, the evaluation team stratified customers who expressed a willingness to participate (via the online survey) in the phone interview into two groups: authorized customers and HEAT loan recipients. Next, the team sought a mix of customers with different reasons for signing up for an HEA who did or did not install measures without the HEAT loan.

3. KEY FINDINGS

The team organized key findings into the following six topics:

1. Completion Rates
2. Most Commonly Financed Measures
3. HEAT Loan Allows Recipients to Do More
4. Barriers to Completion for Authorized Customers
5. Measures Installed Without the HEAT Loan
6. Authorization Process Impacts Satisfaction More than Completion

3.1 Completion Rates

The evaluation team used two sources of data to calculate the completion rate: the LV data and the customer survey data. This was done because some customers who were authorized by their LV in 2017, especially toward the end of the year, went on to secure the HEAT loan in 2018. In these instances, their HEAT loan status was not accurately captured in the provided LV data, which became apparent through the web survey.

Completion Rate: *Percent of customers qualified by their LV that go on to secure a HEAT loan*

To calculate the completion rate, the evaluation team first looked at the percent of recipient customers reported for the entirety 2017 as well as by month. In this context, “month” refers to the month that LV authorized the customer for the HEAT loan. Since customers are not eligible to seek authorization until they’ve had an HEA, it’s likely the month in which a customer becomes authorized for the loan is different (and later) than the month of their HEA. For the completion analysis, the evaluation team used authorization dates as the primary time marker.

The LV-provided data revealed extremely low completion rates for November and December 2017 that deviated noticeably from rest of the year. The LVs provided the evaluation team with the data in March 2018, well after the 60-day HEAT loan authorization period had passed for the customers authorized in November and December 2017. However, due to these customers’ survey responses, it was clear to the team that the information in the dataset for November and December did not reflect actual completion rates. To prevent skewing the average completion rate for the year, the team removed November and December customers from the team’s 2017 completion rate, which resulted a completion rate of 69% (reflecting participation from January 2017 to October 2017).

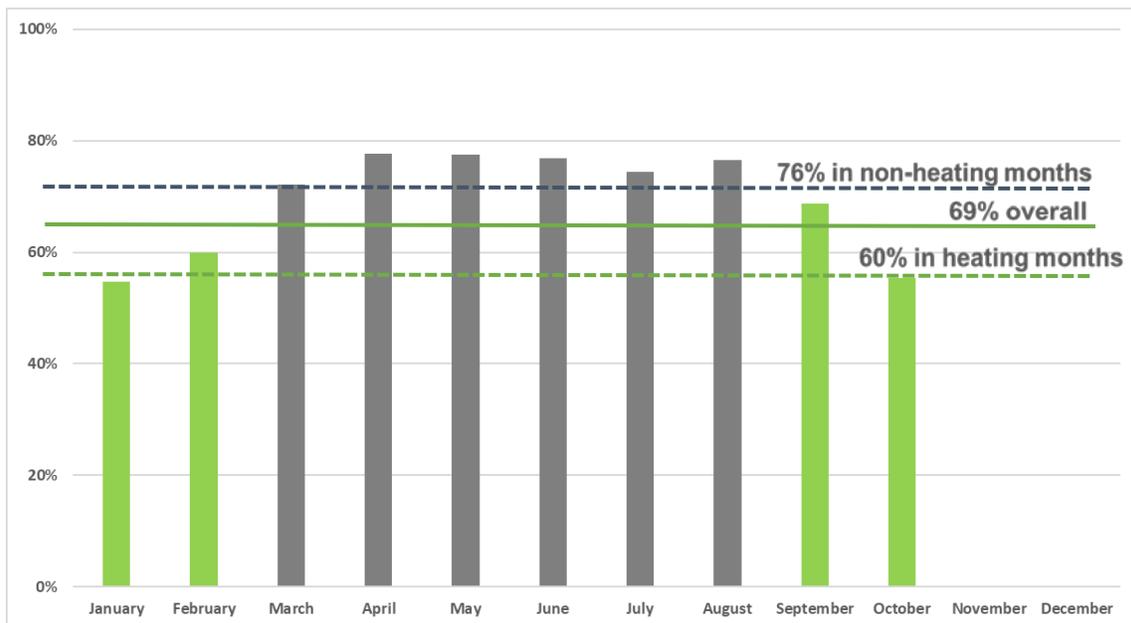
Completion rates differ in heating months versus non-heating months, as depicted by Figure 2. In non-heating months (March to August) the completion rate reached 76%, whereas in heating months the completion rate was only 60%.

The evaluation team also calculated completion rates through the customer survey. As part of the customer survey, 115 respondents thought to be authorized customers based on the LV data indicated that they ultimately took out a loan. Most of these customers were clear that they took out a HEAT loan, but others provided ambiguous responses, indicating that they may have taken out a non-HEAT loan to finance their action. Conversely, there was no ambiguity for HEAT loan recipients: all the respondents

identified as HEAT loan recipients in the LV data confirmed they took out a HEAT loan. After updating the status for these customers, the evaluation team calculated a survey-based HEAT loan completion rate of 83%. However, the responses provided by some customers suggest this value may somewhat overstate actual HEAT loan completion rates.

These two approaches indicated that actual HEAT loan completion is likely between 69% and 83%. Given the uncertainty associated with both estimates, the evaluation team opted to report an approximate completion rate of 75%. This rounded value reflects the uncertainty around both estimates.

Figure 2. HEAT Loan Process Completion Rate by Month (January–October 2017)



3.2 Most Commonly Financed Measures

Heating systems were by far the most common measure installed in 2017, both by HEAT loan recipients and authorized customers. According to program data shown in Figure 3, 69% of all 2017 customers were authorized to install a heating system. The next most common measure, air conditioning, was recommended half as often (34%). Because most customers finance heating systems, HVAC contractors—not HES energy specialists or Home Performance Contractors—present an important marketing opportunity for the program and can inform the customer about the HEAT loan. PAs and LVs agreed that encouraging more HVAC contractors to recommend the HEAT loan to customers to allow them to install higher efficiency equipment creates the biggest opportunity for leveraging the HEAT loan as a tool to drive efficiency in residential customers’ homes.

Figure 3. Recommended Measures Authorized for HEAT Loan Financing

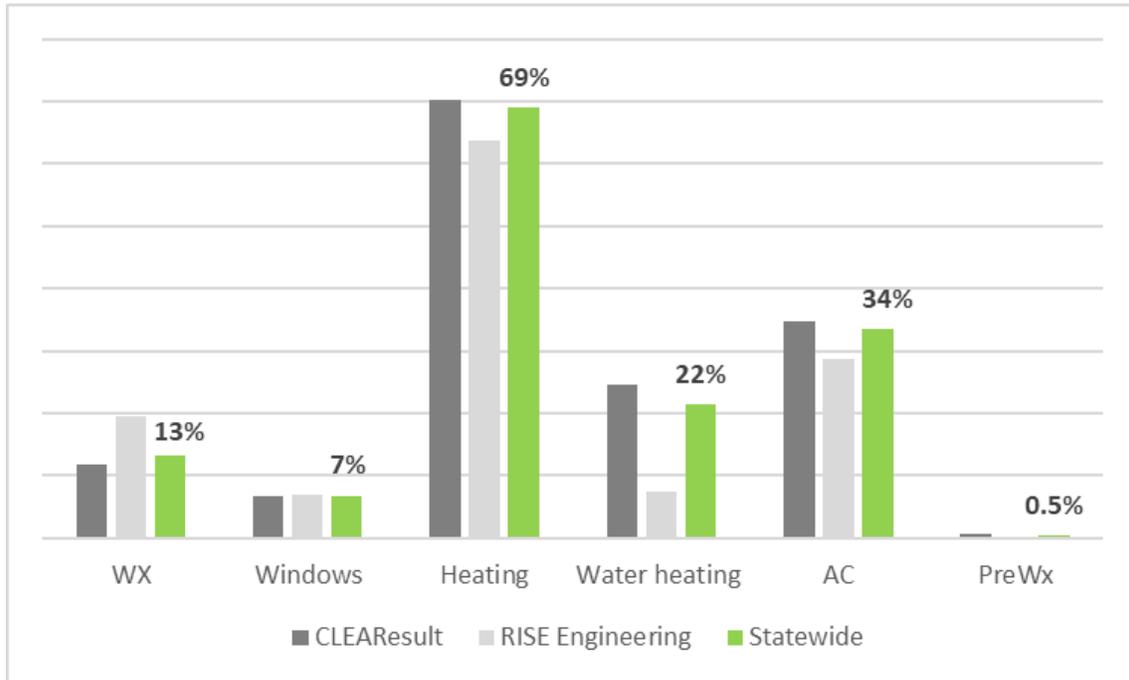


Table 1 shows all measures that customers were authorized to receive with the HEAT loan—whether they ultimately used the loan to finance the measures or not. Some customers were authorized to install more than one measure. This explains why the weatherization installation total in the table (and the percentage in the figure above) is so low: the relatively lower cost of weatherization (compared to a heating system) coupled with the higher portion of the total upfront cost covered by the PAs (through HES incentives) means many customers do not require the HEAT loan to weatherize their home.

Table 1: Authorized HEAT Loan Measures 2017

Measure	Total Units
Weatherization	869
Windows	449
Heating	4,566
Water Heating	1,422
Air Conditioning	2,220
Pre-weatherization	33

However, there are challenges to using HVAC contractors to promote the loan. The interviewed PA PMs mentioned that contractors raised concerns regarding a lack of transparency when it comes to seeing if customers have been approved for loans. Contractors may be less likely to steer customers toward the HEAT loan if they cannot monitor the process. Even more problematic, the PA PMs speculated that many HVAC contractors choose not to mention the HEAT loan as a financing option at all because the customer would need to receive an HEA to become eligible for the loan. The PAs expressed concern that

contractors may not want to prolong the sale by waiting for an HEA and may be concerned that the customer will decide to work with a different contractor or focus their resources on other energy efficiency needs identified in the HEA.

To combat potential disincentives for HVAC contractors to promote the HEAT loan, Eversource is trialing a pathway for approved HVAC contractors to offer the HEAT loan and the *heating system* incentives associated with the Heating & Cooling Equipment Initiative upfront, and then have the customer complete the HEA afterward. (Currently, customers using contractors who have undergone relevant training can already take this path to participation and use the HEAT loan to finance *cooling systems*, including central air conditioning, heat pumps, and mini-splits, through the PA’s AC Check option.)

Moving the HEA to the backend of the process for heating systems, as well as cooling systems, relieves time pressure on customers looking for fast fixes to heating system problems and could alleviate the PAs’ concerns about contractor apprehensions. This could potentially drive increased cross-participation between the PAs’ Residential Heating and Cooling Equipment initiative and HES, and encourage customers installing heating and cooling systems to leverage the HEAT loan to install even higher efficiency units. There are currently only five HVAC contractors participating in the trial, but Eversource is hoping to expand the option to more contractors if the trial goes well. This could serve as a statewide model if the trial proves effective.

3.3 HEAT Loan Allows Recipients to Do More

The HEAT loan enabled customers to install more energy efficiency improvements. Table 2 shows that 81% of customers reported that using the HEAT loan encouraged them to make more energy efficiency improvements than they otherwise would have with alternative financing. Many of the interviewed customers reiterated that the HEAT loan was the best financing option available and that it directly affected their decision to install higher efficiency equipment and/or to make multiple energy efficiency improvements to their home.

HEAT Loan Recipients:
Customers that took out a HEAT loan from a qualified lender

Table 2. Customer response rates to the question “Did the HEAT loan encourage you to make more energy efficiency improvements than you otherwise would have without the loan?” (Q37)

Response	Total
Yes	81%
No	15%
Don’t know/Refused	4%
Respondents	124

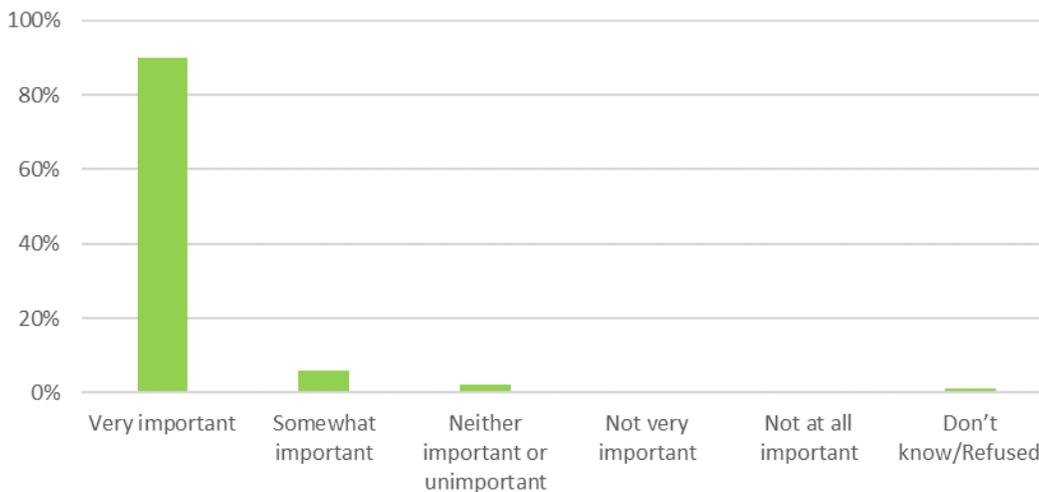
The 0% interest rate is central to the program’s value proposition and a key component of the marketing strategy. As seen in Figure 4 shows 90% of customers indicated that the 0% interest rate was very important in their decision to take out the loan. One of the research questions posed in the study was whether customers would utilize the HEAT loan if the PAs bought down some, but not all the interest. To address this question, the team asked survey respondents to indicate if they would have installed some,

all, or none of the recommended measures if the interest rate was 1%, 2%, 3%, 4%, or 5%. Figure 5 shows that participation declines as the hypothetical interest rate rises from 0% to 3% before leveling off from 3% to 5%. More than half of respondents indicated that they would install some or all of the recommended measures, even if the PAs only bought down the interest rate to 5%.

“It’s hard to do better than 0% interest, so we really only considered the HEAT loan. We probably would have done less work without the HEAT loan because incentives like this just don’t exist outside of the program.”

– HEAT Loan Recipient

Figure 4. Customer response rates to the questions “How important was the 0% interest rate in your decision to take out the HEAT loan?” (Q39)



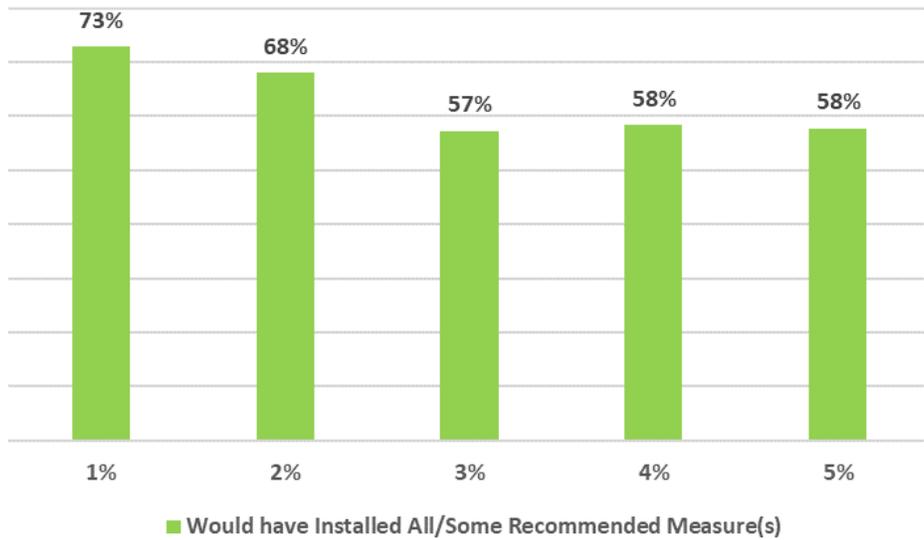
This finding indicates that customers may participate at meaningful rates in the future even if the PAs decide not to buy-down all the interest. However, it is important to consider two related factors when interpreting or potentially acting upon this survey result.

First, it is likely that some customers are overstating their actions at non-zero interest rates due to social desirability response bias; where making energy efficiency improvements without or with less assistance is perceived as the socially desirable response. Conversely, it is also possible—if a customer really wants zero percent financing—that they’ll understate their willingness to accept a higher rate. Both response biases are likely present in these results, although it is not possible to determine their relative impact on the findings.

Second, PAs and LVs were clear that part of the reason the HEAT loan marketing resonates with customers and participating lenders is the simplistic, appealing “no interest” language. The customer results shown in Table 3 confirm this thinking. Further, the interviewed PAs and LVs were confident that changing the HEAT loan marketing from “no interest” to even 1% interest would lead to a decline in overall customer response to HEAT loan marketing, perhaps even more than the self-reported 27% drop seen in Figure 5.

“I installed all of the measures that were recommended from the audit including some covered by rebates outside of the loan. I definitely would have done less and chosen less efficient equipment with alternative financing. I’m glad I didn’t have to because what I’m saving per month on my energy bills is basically paying for the loan.”
 – HEAT Loan Recipient

Figure 5. Customer response rates to the question “If the interest rate was [5%, 4%, 3%, 2%, 1%], would you still have installed all, some, or none of the measures?” (Q40)



3.4 Barriers to Completion for Authorized Customers

As previously stated, an estimated 75% of customers went on to secure a HEAT loan in 2017, which means the other 25% (or about 1,500 customers) fell out of the process. There are four common, often interrelated, reasons that authorized customers do not go on to secure a HEAT loan: declined by a lender, cost too high, other financial priority, and/or timing was not right. These reasons were cited in equal amounts across the authorized customer group.

Authorized Customers:
Customers who were authorized by their LV to seek a HEAT loan, but didn’t go on to secure a HEAT loan

3.4.1 Declined by a Lender

These are customers who did not meet participating lender’s criteria due to income, existing debt, and/or low credit scores. Although these applications were declined, these customers typically reported having a positive experience working with the participating lender both in the survey, as seen in Table 3. In the follow-up interviews, all the customers who were declined by a lender expressed interest in applying for the loan again.

Table 3. Customer responses to the question “Although you did not take out a HEAT loan, how would you rate your experience interacting with the lender?” (Q58)

Response	Overall
5 = Very satisfied	30%
4	24%
3	23%
2	7%
1 = Not at all satisfied	8%
Don't know/Refused	8%
Respondents	14

The PAs currently have no direct control over the lending criteria of participating lenders. However, one opportunity to minimize customer fallout at the lender engagement phase could be to identify and work with alternative lenders willing to loan to customers with higher risk profiles. It is also possible that participating lenders that currently offer a HEAT loan would be willing to change their lending criteria to accommodate these customers, most likely in exchange for a higher interest rate.

Due to their lower income levels and/or difficulty accessing credit, these customers are likely more dependent than most on the financial assistance of the HEAT loan to make energy efficiency improvements to their homes. In search of an alternative pathway for these customers, National Grid began working with Capital Good Fund⁵ in September 2017. Capital Good Fund specializes in loans to customers with difficulty obtaining credit from traditional lenders. This pathway could drive greater installation of energy efficient measures for more customers, although likely at a higher cost to the PAs.

“Unfortunately, my income was too low last year to make me a candidate for the HEAT loan. The HEAT loan is still the best deal, and I’ll probably try again this year with my higher income.”

– Authorized Customer

3.4.2 Cost Too High

Despite the 0% interest rate, some customers are still uncomfortable with the total cost of the recommended measures or taking on debt to finance the work. The PAs have taken steps to reduce the cost burden on customers and increase the appeal of using the HEAT loan, such as adding the ability to finance ductwork through the loan. Per the interviewed LVs, this change enabled more customers to install HVAC systems. However, some customers are simply more cost sensitive than others. To mitigate this barrier, Energy Specialists could focus the conversation on lifecycle cost and payback periods of recommended equipment (a best practice with all customers). However, emphasizing these elements may be especially convincing to this specific type of customer. Energy Specialists could also frame the loan payments as being partially offset by monthly savings achieved through the recommended efficiency measures. Further, the Energy Specialist could highlight exactly how good of a deal the HEAT loan is by comparing the interest rates associated with other financing options, such as personal loans, home equity

⁵ For more information, see capitalgoodfund.org.

lines of credit, and even credit cards. Fiscally conservative customers may respond well to this type of messaging and be more amenable to installing the recommended measures.

“I was only interested in a new heating system, but I didn’t end up doing it because the quote I got was astronomical, probably more than what [paying] the interest on a loan for a cheaper [less efficient] system would cost. This made me apprehensive because the program is about saving money, but the equipment was so expensive.”

– Authorized Customer

3.4.3 Other Financial Priorities

Another group of customers simply decided not to complete the work, despite getting an HEA and going through the HEAT loan authorization process. These customers are clearly interested in making improvements, or at least better understanding the opportunities for improvement within their home, but for a variety of reasons ultimately decide to spend their resources on other things. Typically, this is the case in less urgent situations (i.e., exploring efficiency options versus replacing failed equipment), such as when the customer deems the work inconvenient, or the customer has completed non-efficiency priorities for their money. Many times, the barrier is cost, and customers would rather spend their resources on other non-energy improvements to their home.

From a program perspective, these customers are the most difficult to reach. There is not necessarily a program-specific reason why these customers are not participating, they decide that this is not a priority at the moment. A potential strategy for reaching this customer group is to focus on non-energy benefits like improved comfort or reduced noise. This strategy helps the customer better compare the value of the energy and non-energy household improvements, especially if efficiency alone is not a strong enough selling point.

3.4.4 Timing Was Not Right

Some customers need to act quickly to install measures in their homes. For example, replacing failed heating or cooling systems in the winter or summer, respectively, presents a time constraint for customers. Other timing constraints, such as moving into a new home, can impact customer decision-making. Customers may need to prepare their old house to sell or prepare their new house to move into on a predetermined date.

The customers who were surveyed and interviewed by the evaluation team had already received an HEA and been authorized by a PA. After completing these steps in the participation process, they stated that the timing was not right, or the process was not fast enough. This may indicate more about customer perception of the time associated with the forthcoming lending and/or contracting process than anything else. However, the lender application process, according to interviewed HEAT loan stakeholders, is quick—some HEAT loan recipients are approved the same day. Making sure customers understand that the average authorization and lending process is quick could bridge the gap between customer perception and the actual process timing.

There is another related issue to timing. Some customers looking to replace equipment quickly or in the event of failure at a critical time (e.g., failed heating system in winter) may choose not to schedule an HEA—a requirement to be eligible for the HEAT loan—because they would rather complete the work

immediately than wait for the assessment and loan process. As discussed above, HVAC contractors can be influencers for these types of customers; restructuring the HEAT loan process to better accommodate for emergency replacements could help drive participation.



“We needed to have the AC replaced when it cut out in July, and we wanted the HEAT loan but took out a bridge loan in the meantime instead of waiting for the work to be completed. It turns out that made us ineligible for the HEAT loan, which I wish we had known upfront. We would have preferred to use the HEAT loan, but the work needed to get done right away.”

– Authorized Customer

3.5 Measures Installed Without the HEAT Loan

Even without the HEAT loan, 57% of authorized customers self-reported making at least one recommended energy efficiency improvement, as seen in Table 4. About half of these customers paid for the improvements with personal savings, another 30% used credit cards, and the final 20% took out a new home equity line of credit. Heating systems are the most commonly installed measure among this group, consistent with the larger trend.

Table 4. Customer response rates to the question “According to the program records, you were authorized to use the HEAT loan to make the following energy efficiency improvements to your home. Did you make any of these improvements to your home outside of the HEAT loan process?” (Q48)

Response	Overall
Yes	57%
No	40%
Don't know/Refused	3%
Respondents	63

The evaluation team followed up with customers that installed equipment without the HEAT loan and found that, while they do install equipment, about one-third of these customers self-reported installing less efficient equipment than the recommendation by the PAs. Furthermore, over half of respondents indicated that they would have installed more of the recommended efficiency measures if they used the HEAT loan to finance the work. So, while authorized customers still install updated equipment it is often less efficient equipment and overall, they do less work than HEAT loan recipients.

3.6 Authorization Process Impacts Satisfaction More than Completion

PAs and LVs recognize that the authorization process requires multiple steps and a time investment for customers and systematically take steps to streamline the process. These streamlining efforts have made the process easier for customers while keeping the fundamental components of the multistep authorization process intact. For example, one LV explained that customers are no longer required to submit a load sizing calculation document when seeking to finance HVAC equipment.

These efforts seem to be working as intended because most interviewed customers indicated that the authorization process was relatively fast, only taking about a week. While most customers cited an easy authorization process, many customers experienced complications during the process.

As seen in Table 5, 22% of surveyed customers reported that they had to submit authorization paperwork multiple times. This statewide value was driven primarily by a higher resubmittal rate for customers served by CLEARresult. The evaluation team’s interviews with each LV, which occurred at the outset of this assessment and before the customer survey, did not indicate that the two LVs used substantially different processes that could result in a disparity like that shown below. The PAs, or the evaluation team as part of future research, should determine the reason behind this difference and whether it’s possible to reconcile the processes each LV employs to lower statewide resubmittal rates and associated customer dissatisfaction.

Table 5. Customer responses to the question “Did you have to apply for authorization multiple times and/or provide additional information after your initial submission?” (Q28)

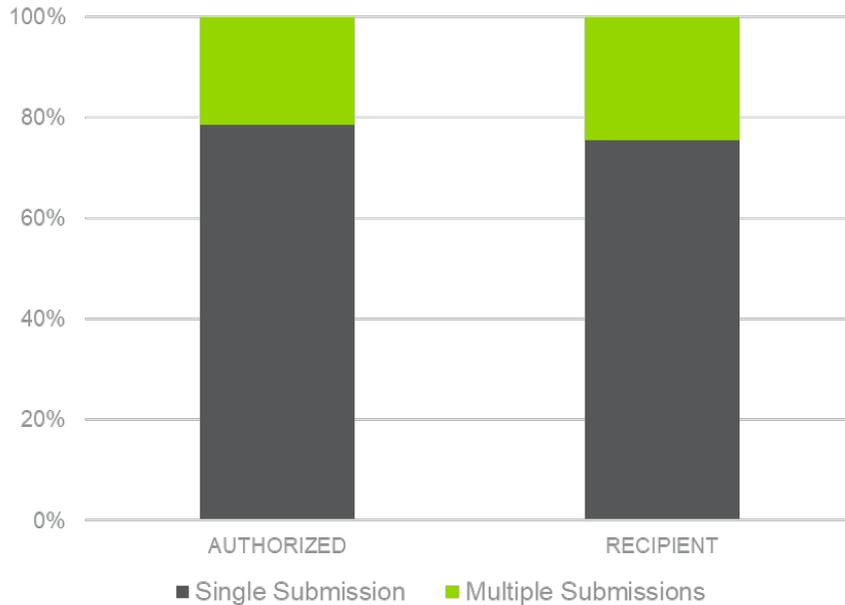
Response	Total	LV	
		CLEARresult	RISE
Yes	22%	26%	4%
No	73%	69%	91%
Don’t know/Refused	5%	5%	5%
Respondents	355	290	64

Resubmittal typically occurs for two reasons:

- 1. When customers need to provide missing information or resubmit incorrect information.** Interviewed customers shared examples from their experience. Prior to the HEA, the HVAC contractor gave one customer an estimate for the work, which was dated before the date of the assessment. The LV who processed the authorization request assumed the work had already been done and rejected the application. Updating the estimate date to after the assessment date solved the problem. Another interviewed customer said they got a quote from an HVAC contractor for both a furnace and air conditioning unit, and the contractor provided a combined quote for the total work. The application was rejected because the quote needed to be broken out clearly for each separate installation.
- 2. Existing authorization expires.** After an LV authorizes a customer, the customer has 60 days to secure financing from a participating lender. After 60 days, the authorization expires, and the customer must complete the authorization process again to remain eligible for a HEAT loan. The PAs instituted this policy because contractor pricing may change over time. However, extending the allotted timeframe or letting customers easily apply for extensions could alleviate this problem. Another potential option is to add flexibility to the contractor bid price to allow the lender to provide financing for moderate price increases without forcing customer reauthorization.

Despite the added time and effort of multiple submissions, Figure 6 shows that there is no effect on completion rates between customers that submit multiple times and customers that only submit once.

Figure 6. Completion Rates for Single vs. Multiple Submission (Based on Survey Results)

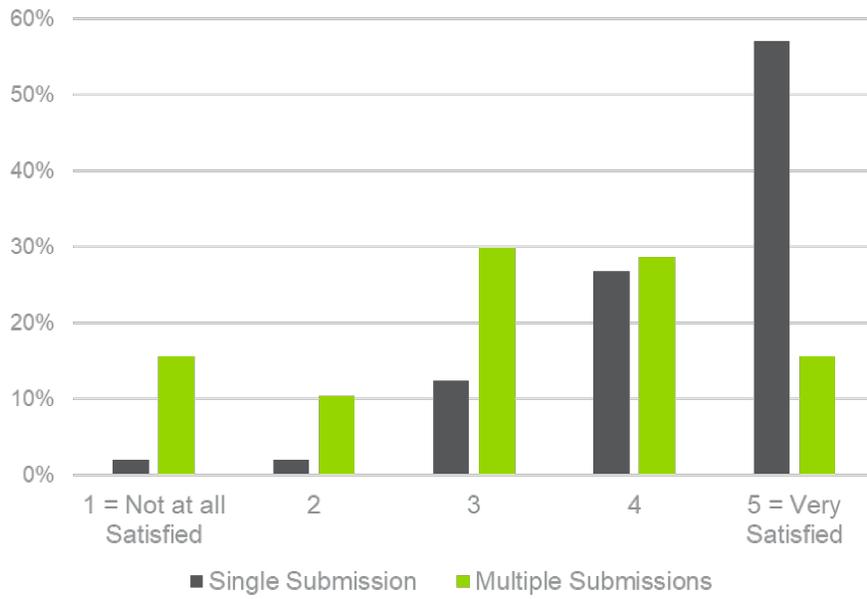


While resubmittal did not impact completion rates, Figure 7 shows that the overall ease of the authorization process has a significant impact on customer satisfaction. Of customers that submitted multiple times, 25% were unsatisfied or very unsatisfied with the authorization process versus only 5% of single submission customers. The survey measured satisfaction across five parameters (timing, transparency, access to information, communication, and overall ease), and the effect of this could be seen across all parameters equally.

Interviewed customers expressed some frustration at the level of communication regarding their applications. First, they expressed that they wished for a higher level of specificity in the required information up front to save time resubmitting. Second, they expressed that they did not receive adequate communication about the problem with their application. Several of these customers said they received no notice that their application was denied, and that they only discovered the problem upon calling program contacts directly. Increasing the specificity of required information could alleviate some customer resubmission problems and making sure any problems with the application are clearly communicated in a timely manner could increase customer satisfaction with the experience. Similarly, outlining a clear set of instructions for monitoring the application status and setting a specific point of contact for application problems can reduce problems with customers who are confused with or unaware of problems with their applications.

PAs and LVs explained that a significant portion of the HEAT loan’s success—and more generally, the success of the PA’s residential initiatives—depends on word of mouth marketing, which relies on positive customer experiences. Customers who were interviewed following the customer survey reinforced this point, commonly saying that they heard about the loan through friends who had positive experiences. While completion rates are not affected by authorization process problems, the impact to customer satisfaction could ultimately deter those HEAT loan recipients that submitted multiple times from recommending the program to others.

Figure 7. Satisfaction with Overall Ease of Authorization Process



4. CONSIDERATIONS

The evaluation team derived the following considerations from the HEAT loan assessment:

- 1. Combat Disincentives for HVAC Contractors to Promote the Loan:** Eversource is trialing a pathway for approved HVAC contractors to offer the HEAT loan, and other rebates for heating systems upfront, and then have the customer complete the HEA afterward. This alleviates time pressure for customers and PA concerns regarding contractors not wanting to promote the HEAT loan and HES. It also aligns how the PAs handle heating and cooling equipment. Expanding the contractor-driven mechanical system first/HEA second delivery model to also include heating measures could drive increased participation in HES as well as uptake of higher efficiency heating equipment through increased access to favorable financing. If the trial goes well, the PAs should consider adopting the model statewide.
- 2. Develop Alternative Financing Pathways for Lower Credit Customers:** For example, National Grid recently began working with Capital Good Fund to explore alternative loan options for customers with difficulty obtaining credit from traditional lenders. This kind of alternative pathway for lower credit customers—whether in collaboration with Capital Good Fund or another partner—could drive greater installation of energy efficient measures, especially for the harder-to-reach customers who the PAs have increasingly targeted through their initiatives. It would, however, increase the total interest rate buy-down costs associated with the HEAT loan.
- 3. Adjust Energy Specialist Pitch to Ease Customer Concerns about Cost:** Energy Specialists should always explain the lifecycle cost of and payback periods associated with recommended measure to all HES customers. This framing is critical for focusing conversation with the customer on how the measure will generate energy and cost savings over time rather than its upfront cost. Fiscally conservative customers may respond particularly well to this type of messaging and be more amenable to installing recommended measures.
- 4. Proactively Explain Typical Timeline:** Customers who decided not to get the loan because the timing is not right have already received an HEA and have been authorized by a PA. The last step of the process is to work with a lender. Failing to complete the process while citing timing constraints could indicate some customer perception that the lending process will be arduous and time consuming. Making sure customers understand that the average lending process is quick could reconcile this disconnect between customer perception and the actual timing.
- 5. Expand Program Delivery to Accommodate Emergency Replacements:** Some customers looking to replace equipment quickly or in the event of failure at a critical time (e.g., failed heating system in winter) may choose not to schedule an HEA—a requirement to be eligible for the HEAT loan—because they would rather complete the work immediately than wait for the assessment and loan process. HVAC contractors can be influencers for these types of customers; restructuring the HEAT loan process to better accommodate for emergency replacements could help drive participation.
- 6. Modify Authorization Expiration Process:** The PAs have a 60-day expiration policy, which requires a about 25% of customers to resubmit and become frustrated with the process. Adding means by which customers can easily request a modest extension could reduce resubmittals and associated dissatisfaction. Another potential option is to add flexibility to the contractor bid price to allow the lender to provide financing for moderate price increases without forcing customer reauthorization.

7. **Take Steps to Keep Customers Informed of Application Problems:** Interviewed customers that had to submit authorization paperwork multiple times expressed frustration at the level of communication regarding their applications. Increasing the specificity of required information can alleviate some customer resubmission problems upfront. Similarly, customer satisfaction can be increased by clearly communicating any problems with the application that occurred during processing in a timely manner. Finally, providing a specific point of contact for application problems can help customers feel less confused or frustrated if a problem does arise.

5. TOPICS FOR FUTURE RESEARCH

In conducting the study, the evaluation team arrived at the following topics to potentially explore in future studies. These topics dig deeper into questions and opportunities that came out of the HEAT loan study.

- **Demographic and Geospatial Analysis of HEAT Loan Participation:** The scope of the current assessment did not include an analysis of how HEAT loan participation varies demographically and spatially. Future studies should examine how the HEAT loan impacts the number of measures installed, the amount of money spent on measures, and the amount of energy saved. These topics will help the PAs understand the value of the HEAT loan.
- **Interviewing Lenders:** In this study, only the LVs and some PAs were interviewed. These interviews introduced several ideas for modifying the lending process to make the program more seamless for customers and more cost-effective for PAs. In future research, it would be valuable to get direct feedback from the lenders on their experience with the HEAT loan process and determine pathways for mutually beneficial updates to the process.
- **HVAC Contractors' Role in HES Programs:** The PAs and LVs interviewed for this study brought up some facets of the HEAT loan process that put a strain on HVAC contractors. To address this, PAs are examining ways to bring HVAC contractors into the process, such as moving the HEA to the backend of the loan approval process, so customers can finance heating equipment with the HEAT loan quickly with an HVAC contractor and still join the HES program. This would be similar to how the PAs operate AC Check. Further research should explore how program processes can be updated to give more HVAC contractors – as part of the existing AC Check, or a redesigned approach for heating equipment - access to the HEAT loan and encourage them to promote it to their customers.
- **Survey Modules for HVAC Participants and Program Non-Participants:** As referenced in Figure 1, Mass Save Participation customer type 2 (HEHE/Cool Smart Participant) and type 4 (Nonparticipant) were outside of the scope of this study. To target these customers in the future, the evaluation team developed additional survey modules to be appended to future studies.

APPENDIX A. PA AND LV INTERVIEW GUIDE

The evaluation team will use this guide to interview Program Administrator (PA) implementation, Home Energy Services (HES) lead vendor (LV), and Energy Federation, Inc. (EFI) staff that assist in delivering the PA's HEAT loan (RES 37 – Task 1).

A.1 Introduction

We are interviewing you as part of our study of the PA's HEAT loan. We are studying how residential customers become familiar with and participate in the financing offer, as well as the barriers that customers face using the HEAT loan to finance home energy efficiency improvements. We are also interested in better understanding why some customers start but do not finish the financing process and why some Home Energy Services (HES) customers never begin the process at all.

Our research, which begins with interviews with people like you that help administer the offer, will also include surveys and interviews directly with customers that did and did not receive a HEAT loan.

A.2 Overview

I'd like to begin by asking a few background questions.

1. Can you start by describing your role supporting the HEAT loan? (Probe: How long have you been doing that? How much of your typical day do you spend working on HEAT loan-related activities?)
2. Do you also have a role implementing or supporting any of the PAs' other residential initiatives?
3. We understand the DOER recently began offering an expanded HEAT grant that complements the standard HEAT loan offered by the PAs. Can you talk about how these two offers work together? (Probe: How have energy specialists, participating lenders, and/or customers responded to the new offer? Do they understand the differences between the loans? Has there been any confusion, or has the launch been relatively seamless?)
4. Have there been any other recent changes in the requirements and/or coverage of the PA's HEAT loan?
5. What about changes in the way the PAs deliver the HEAT loan, including administrative processes, customer collateral, or marketing?

A.3 Marketing and Outreach

Next, I'd like to ask a handful of questions related to how you market the PA HEAT loan.

1. How do you currently market the HEAT loan? (Probe: Do differences exist by PA, LV, or anything else? What about for different customer segments?)
2. Can you describe some reasons why an HES participant might not want to pursue a HEAT loan or for whom a financing offer wouldn't make sense?
3. What role do participating lenders play in marketing?

4. Which of these approaches do you feel are the most effective? Least effective? Why is that? (Probe: Does this vary by customer segment or geographic area? What data do you collect to assess effectiveness?)
5. How, if at all, has the marketing approach changed since DOER launched the expanded HEAT grant? (Probe: Is it marketed separately? How do the marketing materials differentiate between the two financing options?)
6. Are there any other targeted marketing efforts you are considering employing in the next year?

A.4 Barriers

When planning this study, the evaluation team and the PAs identified several different types of Mass Save participants and HEAT loan statuses. I'd like to ask you a few questions about HEAT loan awareness and barriers as it relates to each.

Let's start with HES participants—that is, customers that had a home energy assessment (HEA) and installed at least one of the recommended major measures, such as insulation.

1. Can you talk about how you promote the HEAT loan during HEAs?
2. From your perspective, what barriers exist to getting more HES customers to use a HEAT loan to finance one or more recommended measures?
3. Do these barriers vary by geography, customer segment, income range (moderate/non-moderate), or any other factor? Please explain.
4. What approaches have you tried to address these barriers? What were the results?
5. Are there common questions or concerns from HES participants about the HEAT loan?

Next, I'd like to talk about customers looking to upgrade their space heating, water heating, or cooling equipment through the Residential Heating and Cooling Equipment initiative.

1. Can you talk about how you promote the HEAT loan to these customers?
2. From your perspective, how are these customers different than those going through HES, and how does that influence how you inform them about the HEAT loan?
3. How aware of the HEAT loan do you think these customers are?
4. What barriers exist to getting more Residential Heating and Cooling Equipment customers from using a HEAT loan? (Probe: Do barriers vary at all by geography, customer segment, income range (moderate/non-moderate), or any other factor?).
5. We understand that customers are required to have an HEA to become eligible for the HEAT loan. Do you think that customers considering Residential Heating and Cooling Equipment measures would be more likely to use the loan and install efficient equipment if that requirement was relaxed?
6. Can you talk about the tension between seeking comprehensive improvements (i.e., requiring an HEA) and making it as simple as possible for a customer to get financing and install efficient heating or cooling equipment (i.e., no HEA)? (Probe: What are the pros and cons of the current approach?)

Lastly, let's talk about customers that have not yet participated in any PA residential program.

1. Earlier you shared some of your current marketing strategies. Can you talk about how you promote the HEAT loan to these customers?
2. From an offer delivery perspective, do you think about these customers differently? How so?

3. For these specific customers, what barriers do you feel exist to getting them into a PA initiative and promoting the HEAT loan?
4. Do these barriers vary by geography, customer segment, occupancy type (rent/own), income range (moderate/non-moderate), or any other factor? Please explain.
5. Are there any special efforts or offer delivery nuances that apply to any of these groups? (Probe: What about rental properties?)

A.5 LV Authorization

1. Have there been any recent changes to authorization criteria the LVs use to determine whether a given customer can seek a HEAT loan from a participating lender? (Probe: When? Why? What was the effect?)
2. Do you have a sense of how many customers receive authorization from an LV to seek a HEAT loan but do not subsequently take out a HEAT loan? (Probe: What data/information is your estimate based on?)
3. Is there any particular point in the HEAT loan process that you feel customers are falling out of the financing process? When and why?
4. Do you see any opportunities to prevent customers from falling out of the HEAT loan process once they are authorized?
5. What about opportunities to get more HES customers started in the authorization process? (Probe: What barriers are there to getting customers started?)
6. What are the primary reasons LVs do not provide authorization to customers seeking a HEAT loan?

A.6 Lenders

1. Can you talk about lenders role in implementing the HEAT loan? (Probe: Do they simply process loans, or do lenders provide feedback and/or shape how the PAs delivery the HEAT loans?)
2. Do you work directly with participating lenders? If so, how so?
3. We are not interviewing any lenders as part of this research. If we did, what do you think they would tell us about their experience providing HEAT loan? Why do you say that?
4. From your perspective, is there anything that participating lenders could do differently that would minimize barriers and increase customer participation?

A.7 Looking Ahead

We understand that the PAs and their stakeholders are going through a significant planning process in preparation for the next 3-year plan.

1. What does this planning process mean for the HEAT loan?
2. Do you see any other opportunities to adjust delivery of the existing PA HEAT loan that will enable customer to install more measures?
3. Do you anticipate any changes to the HEAT loan offer in the next few years? (Probe: What? When? Why?)

A.8 Closing

1. As a next step, we will be surveying HES customers about the HEAT loan. Are there any specific questions you'd like us to ask them or topics you'd like us to cover?
2. Is there anything else that you would like to share that we have not yet discussed?

Thank you so much for your time

APPENDIX B. PA AND LV INTERVIEW FINDINGS REPORT

To: Massachusetts Program Administrators and Energy Efficiency Advisory Council

From: Doug Bruchs, Cadeo, and Dave Basak, Navigant Consulting, Inc.

Date: February 5, 2018

Re: HEAT Loan Analysis (RES 37): HEAT Loan Program Interview Findings (Task 1)

This memo summarizes the evaluation team's recent in-depth interviews with several of the Program Administrators (PA) and vendors that manage the HEAT loan. These interviews were the first task under RES 37, which seeks to better understand how effectively the PA's current HEAT loan financing offer enables customers to make energy efficiency improvements to their home. In addition to these interviews, RES 37 also includes surveys and interviews with customers that received a home energy assessment. Specifically, the evaluation team will survey and interview customers that started and completed the HEAT loan process, as well as those that started (i.e., received authorization from their lead vendor [LV]), but did not ultimately – for any number of reasons – secure a HEAT loan with a participating lender.

To better understand the strengths, barriers, and opportunities related to the current delivery of the HEAT loan, the evaluation team began the study by interviewing several PA program managers (PMs), the two lead vendors (LVs) that authorize customers to pursue the HEAT loan from a participating lender, and the vendor that processes reimbursements for those lenders (EFI). Given the limited scope and timeline for the study, the evaluation team interviewed HEAT loan PMs from only two PAs – National Grid and Eversource – and will not be directly contacting representatives from any of the participating lending institutions. However, the team did interview the consultant that onboards and interacts with participating lenders, which offered some – albeit indirect - perspective regarding lenders. In total, the team completed six interviews, which collectively yielded insight regarding how the HEAT loan is delivered, as well as stakeholder thoughts about how the HEAT loan may evolve over time.

At the conclusion of the memo, the evaluation team outlines the team's next steps as part of RES 37. Relatedly, please note that the evaluation team will refrain from offering specific recommendations until these next steps are complete. Further, some of the language used in this memo was kept intentionally vague until the team can speak directly with customers regarding the HEAT loan.

The evaluation team focused the interviews on five topic areas:

- **Marketing and Outreach**
 - How is the HEAT loan marketed?
 - What marketing approaches are most effective?
- **Barriers**
 - What barriers exist to Home Energy Services (HES) initiative customers using the HEAT loan?
 - What barriers exist to getting Residential Heating and Cooling initiative customers to use the HEAT loan to finance heating and cooling measures?

- What barriers exist for homeowners who have not yet entered a PA initiative?
- **LV Authorization**
 - What does the authorization process look like and have there been any recent changes to it?
 - Where in the authorization process are customers falling out?
 - What opportunities are there to get more HES customers started in the authorization process?
- **Lenders**
 - Do the lenders take an active role in the HEAT loan process?
 - What could participating lenders do to minimize barriers and increase customer participation?
- **Looking Ahead**
 - Are there any other opportunities to adjust delivery of the HEAT loan in a way that encourages more customers to install measures?
 - With the 3-year plan coming up, what HEAT loan delivery changes are being discussed?

The majority of customers authorized to seek a HEAT loan from a participating lender go on to secure financing. After processing completed loan information provided by lenders, Energy Federation, Inc. (EFI) notifies LVs which specific customers closed loans. EFI provides this information so that the LVs can conduct the mandatory quality assurance/quality control visit required for all customers that receive the HEAT loan. According to one LV, 60-65% of the customers they authorize for a HEAT loan go on to obtain a loan from a participating lender. The other LV offered a higher estimate: ~85%. The evaluation team will confirm these initial completion estimates and, through the remaining RES 37 evaluation activities, explore any potential reasons for the apparent disparity. Regardless, while rates differ by LV and likely fluctuate annually, the rates reported by both LVs indicate most customers that are authorized successfully complete the HEAT loan process.

The specific reasons that authorized customers discontinue or fall out of the HEAT loan process are unknown. While the LVs know which authorized customers did not go on to secure a HEAT loan, they do not know why. Interviewed stakeholders offer a range of possibilities, including failure to meet lenders' specific criteria, the customers chose an alternative financing option, and/or the customers decided not to install the measure(s). As the process stands, the PAs do not influence the lender's underwriting criteria by design, and so these observations are not indications of issues with how the PAs deliver the HEAT loan. The customer survey (Task 2 of RES 37) will explore the customer experience to drill deeper into individual customer reasoning and establish some common themes. In both the customer survey and the pending analysis of data provided by LVs, the evaluation team will be able to identify how many customers move forward with efficiency measures from each of the customer segments: those who received the loan, those that fell out of the loan process, and those who never registered for the loan. The team will also analyze LV data to assess the relative size of these HEAT loan nonparticipant customer groups.

PAs and LVs noted that some customers start, but do not finish, the authorization process. The interviews revealed customers that initiate but do not complete the HEAT loan process sometimes drop out during the authorization phase. One reason given by both PMs and LVs is the total number of steps

that customers must complete to be authorized.⁶ In addition, LVs noted that if any paperwork is incorrectly submitted, customers need to resubmit corrected paperwork, which results in additional work and a delay receiving authorization. While all interviewees acknowledged the value of further streamlining the existing authorization process, one LV pointed out that the current steps were put in place for a reason and there could be tradeoffs to additional streamlining. Identifying key pain points in the authorization process for customers that dropped out during the authorization process will be a priority during the customer surveys.

PAs have already taken steps to streamline and improve the authorization process for customers to ensure customers install recommended measures.

These streamlining efforts have made the process easier for customers while keeping the fundamental components of the multistep authorization process intact. For example, one LV explained that customers are no longer required to submit a load sizing calculation document when seeking to finance HVAC equipment. Also, the PAs recently added the ability to finance ductwork, which (per the interviewed LVs) enabled more customers to install HVAC systems. This is because paying for necessary ductwork outside of the HEAT loan made the entire heating upgrade cost prohibitive. Interviewees noted that they are discussing additional streamlining options as part of the ongoing 3-year planning cycle. Both a PM and LV mentioned one streamlining option under consideration is to add a photo verification option through which customers could submit photographs of existing heating equipment to verify eligibility for replacement. This would potentially eliminate a visit to the home. The evaluation team will use the customer survey to seek out more opportunities to streamline the authorization process and improve the customer experience.

LVs have also taken steps to modernize the HEAT loan application process. The LVs have moved portions of the HEAT loan process online, allowing customers to submit authorization paperwork electronically, as well as check the status of their application. On the PA side, National Grid is currently implementing its new Energy Savvy platform and working with EFI to create a HEAT loan module. This module will allow National Grid to see a complete picture of the customer from authorization to work completed, improving visibility throughout the process. EFI is also pursuing modernizations to the reimbursement process for lenders. An EFI representative explained that many lenders still submit loan cases by mail, and many lenders submit each loan case individually. EFI then must manually enter lender data. Moving this process to an online platform would expedite the process for EFI and reduce lender time spent on this task, resulting in improved cost-effectiveness. While LVs have made improvements to the application process, there are likely additional opportunities for further modernization. In the pending evaluation tasks, the team will explore customer feedback on streamlining and modernizing to help PAs build a more seamless authorization and financing process for the customer.

Authorized customers have limited time to act – or they need to start over. After an LV authorizes a customer, the customer has 60 days to secure financing from a participating lender. After the 60 days, the authorization expires, and the customer must complete the authorization process again to remain eligible for a HEAT loan. The PAs instituted a 60-day expiration policy because quoted loan rates and contractor pricing may change over time. One LV suggested that increasing the window somewhat (perhaps to 90 days) might reduce customer fallout, as some customers opted not to update their expired authorization. Another potential option would be to add flexibility to the contractor bid price that would allow the lender to provide financing for moderate price increases without forcing customers to be reauthorized.⁷

⁶ For more information, see www.masssave.com.

⁷ Per EFI, participating lenders can finance customers for less than their authorized amount.

Once customers get to a lender, they are subject to the lender's underwriting criteria, so the PAs have little opportunity to address customer drop out during this phase. While the PAs have no direct control over participating lenders' lending criteria, one opportunity to minimize customer fallout would be to work with existing and new lenders to serve customers that have difficulty qualifying for loans. One reason why lenders may turn down a HEAT loan customer is if they are considered a high risk customer due to bad credit or a variety of other factors. High risk customers could face more hurdles from lenders to financing energy efficiency improvements to their homes. Building pathways for these customers to finance weatherization measures presents an opportunity for the HEAT loan process to access this customer segment and enable these customers to finance energy efficiency improvements to their homes. In this vein, National Grid began working with Capital Good Fund⁸ in September 2017. Capital Good Fund specializes in loans to customers with difficulty obtaining credit from traditional lenders. Per National Grid's PM, the PA hopes this additional delivery option will open access to the HEAT loan to a segment of customers that may have traditionally struggled to finance energy efficiency improvements to their homes without access to special financing offers like the HEAT loan. The evaluation team will explore the prevalence of this customer segment. According to the consultant who acts as a liaison with participating lenders, neither National Grid, nor any of the other PAs, have approached active lenders to explore an alternative financing scenario with them (i.e., higher interest rates for higher risk customers) that might allow the current set of lenders to also serve this customer segment. The consultant noted that he had not spoken with any participating lenders about their willingness to offer an alternative path for higher risk customers, but he speculated that they would likely be interested. His speculation was based on the fact that participating lenders often view the HEAT loan as a mechanism for engaging new customers, as well as offering more services to existing customers. There is a tradeoff with this option, however, as it would likely make the program less cost-effective.

Some participating lenders actively market the HEAT loan and view the loan as a valuable addition to their offerings portfolio. The evaluation team did not interview any participating lenders as part of this study. However, the team did ask each interviewee about the role lenders play in delivering the HEAT loan. The interviews revealed the potential for a mutually beneficial partnership between the PAs and the lenders. For lenders, offering the HEAT loan as part of their portfolio can attract new customers and offer a wider range of services to existing customers. In the case of smaller banks and credit unions, offering the HEAT loan could unlock new customer segments. One LV vendor mentioned that about 80% of customers that apply for a HEAT loan are new customers for that lending institution. On the other hand, the interviewed PAs mentioned the benefits of having lenders market the HEAT loan to customers directly. Earlier in 2017, the traditional participation agreement with lenders changed to allow them to directly market the HEAT loan if marketing collateral is approved by LVs. This is, in effect, free marketing for the PAs, improving cost-effectiveness and increasing visibility and customer access to the HEAT loan. While a subset of participating lenders has used this new process to actively market the HEAT loan, one PM manager suggested that lender marketing could be expanded in the future. Specifically, the consultant that works closely with the lenders estimated that only about 20%-25% of participating lenders are currently marketing the loan independently.

Interviewees identified a perceived customer desire to complete home projects over time. The PA's Home Energy Assessment-based approach focuses on the whole home by giving customers a comprehensive list of possible efficiency improvements. However, some interviewees wondered if the all-at-once whole-home approach is out of sync with how customers typically approach home improvement projects. The team will explore this issue directly via the customer survey, but the interviewees speculated that customers may prefer breaking out the financial investment into smaller pieces and completing work

⁸ For more information, see capitalgoodfund.org.

over time rather than taking on a whole-home approach with a larger, lump sum loan. Furthermore, the PAs currently only allow one HEAT loan per property. Some PAs grant exceptions for multiple loans if the cumulative total of the loans does not exceed \$25,000. Interviewees noted that they are discussing changing this policy to allow multiple loans up to the loan cap without a special exception. They hope such an approach would align more closely with customer's perceived desire to break the improvements into smaller pieces that the customer can complete incrementally over time. Another option, proposed by one of the PMs, would be changing the HEAT loan from a lump sum to a line of credit option, thereby allowing customers flexibility in taking advantage of the loan on their schedule. However, there is some question as to whether the participating lenders would be amenable of this financing option. As the consultant that provides orientation for new participating lenders noted, lenders would likely demand more collateral for this kind of loan and payment logistics between the PAs and lenders would likely be more complicated. Regardless, all interviewees agreed that it was important to explore these kinds of options as part of the 3-year planning process. Aligning program delivery and financing structure with customer behavior and preferences can help ensure customers move forward with recommended energy efficiency measures.

Interviewees agreed that most HEAT loan customers are financing heating and cooling measures.

This means that HVAC contractors, not HES energy specialists or Home Performance Contractors, are often the first touchpoint with the customer and the stakeholder with the opportunity to inform the customer about the HEAT loan. Consequently, interviewees agreed that it was important to encourage HVAC contractors to recommend the HEAT loan to customer as a means to install higher efficiency and most expensive heating and cooling equipment.

However, there are challenges to leveraging HVAC contractors to promote the loan due to concerns with transparency in the loan process and a fear of losing customers.

One PM said that the biggest marketing opportunity for the HEAT loan is through the HVAC community. However, some PMs also mentioned contractor complaints of a lack of transparency in the process when it comes to seeing if customers have been approved for loans. Contractors need to be in the loop to know that their customer can pay for work done; they may be less likely to steer customers toward the HEAT loan if they cannot monitor the process. Furthermore, some HVAC contractors fear losing the customer during the HEA process. As the process currently stands, a customer cannot get access to the HEAT loan without getting an HEA. Interviewees mentioned that they feel that some HVAC contractors choose not to mention the HEAT loan as a financing option for high efficiency equipment because the customer would need to receive an HEA first. The interviewees said that some contractors do not want to prolong the sales process by waiting for an HEA and that many have concerns that the customer will decide to work with a different contractor or focus their resource on other energy efficiency needs as a result of the HEA. The interviews indicated that some HVAC contractors are unwilling to take the risk of losing the customer during the HEA process and consequently do not mention the HEAT loan financing option.

Eversource is trialing a pathway for approved HVAC contractors to offer the HEAT loan and HVAC rebates upfront, and then complete the HEA afterward.

To address these disincentives for HVAC contractors to promote the HEAT loan, Eversource is trialing an alternative model. Instead of requiring all customers to go through an HEA to gain access to the HEAT loan, in this model Eversource customers could access the loan up front to address targeted improvements like urgent HVAC needs and conduct the HES after the fact. Moving the HEA to the back end of the process relieves time pressure on customers looking for fast fixes to HVAC problems. This could drive increased participation in HES and uptake of energy efficiency measures by opening custom pathways to address customer needs. There are currently only five HVAC contractors participating in the trial, but Eversource is hoping to expand the option to more contractors soon. However, one PM expressed doubts about the size of this program as it scales because Mass Save would be responsible for managing a large new contractor group. The

interviewed consultant also explained that a significant portion of the HEAT loan's success depends on positive customer experiences, and there would need to be careful consideration of how to oversee this new contractor group.

Next Steps

With Task 1 complete, the evaluation team will focus on obtaining the customer perspective through a customer survey and follow-up, in-depth customer interviews. The goal of these tasks is to determine customer barriers to pursuing energy efficiency improvements through an HES program and the role the HEAT loan played in potentially helping them overcome those barriers. More broadly, the evaluation team seeks to discover customer motivations for participating in the HEAT loan program, choosing other avenues for financing energy efficiency improvements, or deciding not to move forward with improvements at all.

Specifically, the evaluation team will survey 300 HES customers that were authorized to seek HEAT loan financing. These customers will be a mix of customers that did and did not move forward with recommended energy efficiency measures, as well as mix of those that secured HEAT loan financing and those that did not. The team will use the insights gained from the Task 1 interviews to develop the survey questions.

To complement the broad quantitative insights that will be gained through the online survey with a deeper, more qualitative perspective on the HEAT loan authorized customers that did not eventually secure a loan, the evaluation team will complete 20 in-depth telephone interviews. The team plans to interview both customers that did not install any recommended measures after dropping out of the HEAT loan process, as well as those that installed the measures without the HEAT loan.

APPENDIX C. CUSTOMER SURVEY INSTRUMENT

C.1 Survey Respondent Types

Throughout this survey, the evaluation team uses the survey respondent types shown in the table below in question screenings (such as: **[ASK IF HEATLOAN=Authorized]**) to target questions appropriate for each respondent group.

PA	
	Berkshire Gas
	Cape Light Compact
	Columbia Gas
	Eversource
	Liberty Gas
	National Grid
	Unitil
LV	
CLEAResult	Lead Vendor for Eversource and National Grid
RISE	Lead Vendor for all other PAs
HEATLOAN	
Authorized	Customer received approval from LV to seek HEAT loan from participating lender but did not secure a HEAT loan
Recipient	Customer secured a HEAT loan from a participating lender following successful authorization from their LV

C.2 Outreach Email

[PARTICIPANT NAME]:

Mass Save would like to invite you to participate in a brief online survey (5-10 minutes) regarding your experience with the HEAT loan authorization process and any qualifying energy efficiency improvements you subsequently made. We would like to explore your experience with the home energy assessment you received through Mass Save as well as your experience with the HEAT loan, even if you did not subsequently take out the HEAT loan. In appreciation of your time, we will send you a \$10 Amazon gift card after you complete the survey.

Mass Save will use your feedback to refine our delivery of the HEAT loan and, more generally, our residential energy efficiency offerings. We are not selling anything, we will only use your survey responses to make improvements that will benefit customers like you in the future.

If you would like to take this survey, please follow the link here: (_____). **Once completed, you will also be eligible for an additional \$50 Amazon gift card if you agree to participate in, and are selected for, a follow-up telephone interview.**

Thank you for your time.

(Name)

C.2.1 Frequently ASKED QUESTIONS

I'm not the right person to answer these questions. Can I direct you to someone else?

Yes, please add the correct name and email here (*PROGRAMMER: COLLECT INFORMATION*) and we'll reach out to the person you identified.

I'm not sure what you mean by HEAT loan "authorized" – what does that mean exactly?

Before any customer can take out a HEAT loan, they need to submit information about their planned energy efficiency improvements and apply for official approval. This information typically includes a HEAT loan intake form and pricing for the contractor that will complete the work. Once the vendor that manages the HEAT loan approves the application, the customer is "authorized" to approach any participating lender to seek a HEAT loan. At that point, it is up to the participating lender – based on their lending requirements – whether to extend financing to the customer.

I was authorized, but I did not end up taking out a HEAT loan. Should I still complete the survey?

Yes, we are reaching out to both customers that did and did not use the HEAT loan.

How quickly will I receive the \$10 Amazon gift card?

We will send it within two weeks of completing the survey. In most cases, you'll receive it sooner than that.

Is there another incentive option other than the \$10 Amazon gift card?

No, sorry, that's the only type of incentive we can provide as part of this study.

How will the information I'm providing be used?

Your responses will be kept confidential and will only report survey findings in aggregate.

I have a different question. Is there someone I can talk to?

Yes. Doug Bruchs with Cadeo, an energy efficiency consulting company contracted by [PA], is overseeing this study. You can email him at dbruchs@cadeogroup.com or call him at (503) 660-4213.

Is there someone from utility that I can talk to?

Absolutely. You can contact [PACONTACT] with [PA] at [PAPHONE] with any questions, including confirming the authenticity of this study.

(PROGRAMMER: DISPLAY INFORMATION ONLY FOR RESPONDENT'S PA)

PA	PACONTACT	PAPHONE
Berkshire Gas	Mike Sommer	(413) 445-0315
Cape Light Compact	Gail Azulay	(508) 744-1266
Columbia Gas	Monica Cohen	(508) 836-7321
Liberty Gas (New England Gas)	Laurie Pereira	(774) 627-2897
National Grid	Kim Crossman	(781) 907-1562
Eversource	Tracy Dyke-Redmond	(781) 441-3389
Unitil	Mary Downes	(603) 294-5122

C.3 Screening

Section Intro: Let's start by confirming a few pieces of information.

1. According to program records, you worked with [LV] in [MONTH] of 2017 to become authorized to seek a zero interest HEAT loan from a participating lender for potential energy efficiency improvements to your home. Is that correct?
 1. Yes
 2. No
 - 98. Don't know
 - 99. Refused

2. [IF Q1=2] Before any customer can take out a HEAT loan, they need to submit information about their planned energy efficiency improvements and apply for official approval. This information typically includes a HEAT loan intake form and pricing for the contractor that will complete the work. Once the vendor that manages the HEAT loan approves the application, the customer is "authorized" to approach any participating lender to seek a HEAT loan. At that point, it is up to the participating lender – based on their lending requirements – whether to extend financing to the customer.

With this clarification, is it correct that you worked with [LV] in 2017 on this authorization process?

1. Yes
 2. No (*THANK AND END SURVEY*)
 - 98. Don't know
 - 99. Refused
3. [IF HEATLOAN=AUTHORIZED] According to program records, you were authorized by [LV] to seek a HEAT loan for energy efficiency improvements to your home, but you – for any number of possible reasons – did not end up taking out a HEAT loan from a participating lender. Is that correct?
 1. Yes
 2. No
 - 98. Don't know
 - 99. Refused

 4. [IF Q3=2] To confirm, you took the authorization from [LV] and secured a HEAT loan from a participating lender to finance energy efficiency improvements to your home?
 1. That's correct (*CHANGE HEATLOAN TO "RECIPIENT"*)
 2. No, I did not take out a HEAT loan (*CONTINUE*)
 3. No, my situation is different (*THANK AND END SURVEY*)
 - 98. Don't know
 - 99. Refused

 5. [IF HEATLOAN=RECIPIENT] According to program records, you took the authorization from [LV] and secured a HEAT loan from a participating lender to finance energy efficiency improvements to your home. Is that correct?

- 1. Yes
- 2. No
- 98. Don't know
- 99. Refused

6. **[IF Q5=2]** To confirm, you were authorized by **[LV]** to seek a HEAT loan, but you did not – for any number of possible reasons – end up taking out a HEAT loan from a participating lender?

- 1. That's correct (CHANGE HEATLOAN TO "AUTHORIZED")
- 2. No, I did take out a HEAT loan (CONTINUE)
- 3. No, my situation is different (THANK AND END SURVEY)
- 98. Don't know
- 99. Refused

7. **[IF HEATLOAN=RECIPIENT]** Specifically, I understand that you used the HEAT loan to make the following improvements. Please confirm you used the HEAT loan to **[Q7TEXT]** ...

[PROGRAMMER: USE LOGIC BELOW TO PRESENT THE RELEVANT MEASURES TO EACH RESPONDENT]

Logic	Q7TEXT	Yes	No	DK	REF
[IF WX = 1]	Install insulation and/or air sealing				
[IF WINDOWS = 1]	Install windows				
[IF HEAT = 1]	Install an energy efficient heating system				
[IF WATER = 1]	Install an energy efficient water heating system				
[IF AIR = 1]	Install an energy efficient air conditioner				
[IF PREWX = 1]	Mitigate an issue with your home that was preventing you from making energy efficient improvements				

8. Did you use the HEAT loan to fund any other measures?

- 1. Yes **[RECORD RESPONSE]**
- 2. No
- 98. Don't know
- 99. Refused

[PROGRAMMER: IF Q8=1, THEN:

CREATE NEW VARIABLE CALLED [OTHER] AND SET IT EQUAL to 1.

CREATE NEW VARIABLE CALLED [OTHERMEASURE] AND SET IT EQUAL to Q8 RESPONSE

[PROGRAMMER: IF NECESSARY, UPDATE THE FOLLOWING FIELDS: WX, WINDOWS, HEAT, WATER, AIR, PREWX, ONLYMEASURE, AND MULTIPLEMEASURES]

C.4 Authorized Customers (Customer Types A and B)

C.4.1 Point of Entry

9. Which of the following statements most closely describes why you signed up for an energy assessment:
1. I wanted to learn what opportunities existed for me to improve the energy efficiency of my home
 2. I was interested in the free measures given as part of the energy assessment
 3. I was interested in using the HEAT loan to finance a specific energy efficiency improvement (e.g., a new high-efficiency furnace or hot water heater) and the loan required that I sign up for a whole home energy assessment
 - 98. Don't know
 - 99. Refused

C.4.2 Non-HES Path

10. **[IF Q9=3]** How significant of a factor was the availability of the zero interest HEAT loan in your decision to pursue this specific energy efficiency improvement(s)?
1. Very significant
 2. Somewhat **significant**
 3. Neither significant or insignificant
 4. Not very significant
 5. Not at all significant
 - 98. Don't know
 - 99. Refused
11. **[IF Q9=3]** How did you find out about that having a home energy assessment was a requirement of HEAT loan?

1. Bill insert
2. Mailing/marketing materials (not including bill insert)
3. Email
4. Internet advertisement/online search
5. Visited MassSave.com
6. Social media
7. Radio (unspecified)
8. Movie theatre
9. Newspaper/Magazine
10. Ad on public transportation
11. Billboard
12. Door-to-door
13. Home performance contractor
14. Heating and cooling contractor
15. Insulation contractor
16. Word of mouth, including from friend or family
17. Events (farmers market, community event, expo, trade shows)
18. Community action agency
19. Other **[RECORD RESPONSE]**
- 98. Don't know
- 99. Refused

12. **[IF Q9=3]** If you could have received a HEAT loan without having an energy assessment, would you have skipped the assessment and just gotten the HEAT loan?

1. Yes
2. No
- 98. Don't know
- 99. Refused

C.4.3 HES Path

13. **[IF Q9=1 or 2]** Prior to your home energy assessment were you aware that **[PA]** works with qualified lenders to offer zero interest loans for energy efficiency improvements?

1. Yes
2. No **[SKIP TO Q16]**
- 98. Don't know **[SKIP TO Q16]**
- 99. Refused **[SKIP TO Q16]**

14. **[IF Q9=1 or 2]** How did you first hear about the HEAT loan?
[MULTIPLE CHOICES POSSIBLE]

1. Bill insert
2. Mailing/marketing materials (not including bill insert)
3. Email
4. Internet advertisement/online search
5. Visited MassSave.com
6. Social media
7. Radio (unspecified)
8. Movie theatre
9. Newspaper/Magazine
10. Ad on public transportation
11. Billboard
12. Door-to-door
13. Home performance contractor
14. Heating and cooling contractor
15. Insulation contractor
16. Word of mouth, including from friend or family
17. Events (farmers market, community event, expo, trade shows)
18. Community action agency
19. Other **[RECORD RESPONSE]**
- 98. Don't know
- 99. Refused

15. **[IF Q9=1 or 2]** How significant of a factor was the availability of the zero interest HEAT loan in your decision to sign up for the assessment?

1. Very significant
2. Somewhat **significant**
3. Neither significant or insignificant
4. Not very significant
5. Not at all significant
- 98. Don't know
- 98. Refused

C.4.4 Energy Specialists

16. Did your Energy Specialist mention the HEAT loan during your assessment?

1. Yes
2. No
- 98. Don't know
- 99. Refused

17. **[ASK IF Q16 = 1]** How much time did the Energy Specialist take in talking to you about the HEAT Loan? Just a brief mention, a few minutes, or a more in-depth detailed discussion about the options.

1. Just a brief mention
2. A few minutes
3. An in-depth detailed discussion about the options
- 98. Don't know
- 99. Refused

18. **[ASK IF Q16 = 1]** Was the Energy Specialist able to answer any questions you may have had about the HEAT loan?

1. Yes, in satisfactory detail
2. Yes, but only generally
3. No
4. I did not ask any questions
- 98. Don't know
- 99. Refused

19. **[IF Q 13 = 2 and Q16 = 2]** How did you first hear about the HEAT loan?

1. Bill insert
2. Mailing/marketing materials (not including bill insert)
3. Email
4. Internet advertisement/online search
5. Visited MassSave.com
6. Social media
7. Radio (unspecified)
8. Movie theatre
9. Newspaper/Magazine
10. Ad on public transportation
11. Billboard
12. Door-to-door
13. Home performance contractor
14. Heating and cooling contractor
15. Insulation contractor
16. Word of mouth, including from friend or family
17. Events (farmers market, community event, expo, trade shows)
18. Community action agency
19. Other **[RECORD RESPONSE]**
- 98. Don't know
- 99. Refused

C.4.5 Website

20. Did you visit the HEAT Loan page on MassSave.com ([link](#)) before deciding to get authorized for the HEAT loan?

- 1. Yes
- 2. No
- 98. Don't know
- 99. Refused

21. **[IF Q20=1]** How useful did you find the information on the HEAT loan page?

- 1. Very useful
- 2. Somewhat **useful**
- 3. Neither useful or not useful
- 4. Not very useful
- 5. Not at all useful
- 98. Don't know
- 99. Refused

22. **[IF Q21 = 1 or 2]** What specifically did you find useful? *[MULTIPLE CHOICES POSSIBLE]*

- 1. Information about the specific improvements (e.g., heating systems, water heaters, insulation) and efficiency levels eligible for HEAT loan financing
- 2. Access to list of approved lenders
- 3. One-page checklist showing step-by-step instructions for how to apply
- 4. Videos showing step-by-step instructions on how to apply
- 5. Checklist for Multifamily Condo Owners
- 6. **[SHOW ONLY IF LV=CLEARRESULT]** The ability to apply for a HEAT loan online
- 7. **[SHOW ONLY IF LV=CLEARRESULT]** The ability to check the status of your loan application online
- 8. Other **[RECORD RESPONSE]**
- 98. Don't know
- 99. Refused

23. **[IF Q21 = 4 or 5]** Why do you say that?

- 1. I found the webpage confusing
- 2. My contractor/someone else explained the process so I did not need the information on webpage
- 3. I was hoping I'd find more/different information (What information was that? **[RECORD RESPONSE]**)
- 4. Something else **[RECORD RESPONSE]**
- 98. Don't know
- 99. Refused

24. How important was the **[Q22_REWORDED]** in your decision to get authorized for the HEAT loan?

- 1. Very important
- 2. Somewhat **important**
- 3. Neither important or unimportant
- 4. Not very important
- 5. Not at all important
- 98. Don't know
- 99. Refused

[PROGRAMMER: USE THE TABLE BELOW TO ASK Q1 FOR EACH REPOSENSE TO Q22. IF RESPONDENT CITED MORE THAN 3 USEFUL ELEMENTS IN Q22, RANDOMLY SELECTED 3 TO ASK ABOUT. DO NOT ASK MORE THAN 3.]

DISPLAY IF	Q22_REWORDED
IF Q22 = 1	Availability of the equipment information
IF Q22 = 2	Availability of the lender list
IF Q22 = 3	Availability of the application checklist
IF Q22 = 4	Availability of the application video
IF Q22 = 5	Availability of the Multifamily Condo checklist
IF Q22 = 6	Ability to apply online
IF Q22 = 7	Ability to check the status online

25. **[IF Q20=1]** Do you have any recommendations for improving the HEAT Loan page on MassSave.com ([link](#))

- 1. **[RECORD RESPONSE]**
- 98. Don't know
- 99. Refused

C.4.6 Authorization Process

26. On a scale of 1 to 5, where 1 is not at all satisfied and 5 is very satisfied, how would you rate the following factors related to getting authorized to seek the HEAT loan by **[LV]**?

FACTOR	1	2	3	4	5	DK	REF
The amount of information required to complete the authorization process							
The time it took to complete the authorization process							
The communication from/ responsiveness of [LV]							
The transparency of the authorization process							
The overall ease of the authorization process							

27. Please elaborate on why you were dissatisfied with... *[PROGRAMMER INCLUDE ANY FACTORS FROM Q26 WHERE RATING WAS 1 OR 2]*

FACTOR	RESPONSE
The amount of information required to complete the authorization process	
The time it took to complete the authorization process	
The communication from/ responsiveness of [LV]	
The transparency of the authorization process	
The overall ease of the authorization process	

28. Did you have to apply for authorization multiple times and/or provide additional information to **[LV]** after your initial submission?

- 1. Yes
- 2. No
- 98. Don't know
- 99. Refused

29. Was there any specific aspect of the authorization process with **[LV]** that you found difficult or burdensome?

- 1. Yes (What aspect? **[RECORD RESPONSE]**)
- 2. No
- 98. Don't know
- 99. Refused

30. Do you have any recommendations for improving the HEAT Loan authorization process with **[LV]**

- 3. Yes **[RECORD RESPONSE]**
- 4. No
- 98. Don't know
- 99. Refused

C.5 Heat Loan Recipients (Customer Type A)

[ASK SECTION 5 IF HEATLOAN=RECIPIENT, OTHERWISE SKIP TO SECTION 6, Q50]

31. [IF MULTIPLEMEASURES = YES] Was there a specific energy efficiency improvement that you were most interested in installing that drove your decision to seek a HEAT loan?

- 1. Yes
- 2. No
- 98. Don't know
- 99. Refused

32. [IF Q31=1] Which? [PROGRAMMER: ALLOW RESPONDENT TO SELECT ONE FROM TABLE OR LIST OF RELEVANT IMPROVEMENTS]

Display If	Improvements
[IF WX = 1]	Insulation and/or air sealing
[IF WINDOWS = 1]	Windows
[IF HEAT = 1]	Heating system
[IF WATER = 1]	Water heating system
[IF AIR = 1]	Air conditioner
[IF OTHER = 1]	[Other improvement]

[PROGRAMMER: CREATE NEW READ-IN VARIABLE CALLED TOPPRIORITY THAT EQUALS REPOSE TO Q32]

33. [IF MULTIPLEMEASURES = YES] Would you have installed [TOPPRIORITY] without the HEAT loan, either by paying for it yourself or finding alternative financing?

- 1. Yes
- 2. No
- 98. Don't know
- 99. Refused

34. [IF MULTIPLEMEASURES = YES] Would you have [DISPLAY LANGAUGE] [IMPROVEMENTS] without the HEAT loan, either by paying for it yourself or finding alternative financing?

Display for TopPriority	Display language	Improvements
[IF WX = 1]	Installed as much	Insulation and/or air sealing
[IF WINDOWS = 1]	Installed as many	Windows
[IF HEAT = 1]	Installed the same efficiency level of	Heating system
[IF WATER = 1]	Installed the same efficiency level of	Water heating system
[IF AIR = 1]	Installed the same efficiency level of	Air conditioner

1. Yes
2. No
- 98. Don't know
- 99. Refused

35. **[IF MULTIPLEMEASURES = NO]** Would you have installed **[ONLYMEASURE]** without the HEAT loan, either by paying for it yourself or finding alternative financing?

1. Yes
2. No
- 98. Don't know
- 99. Refused

36. **[IF MULTIPLEMEASURES = NO]** Would you have **[DISPLAY LANGAUGE] [IMPROVEMENTS]** without the HEAT loan, either by paying for it yourself or finding alternative financing?

Display for OnlyMeasure	Display language	Improvements
[IF WX = 1]	Installed as much	Insulation and/or air sealing
[IF WINDOWS = 1]	Installed as many	Windows
[IF HEAT = 1]	Installed the same efficiency level of	Heating system
[IF WATER = 1]	Installed the same efficiency level of	Water heating system
[IF AIR = 1]	Installed the same efficiency level of	Air conditioner

- 1. Yes
- 2. No
- 98. Don't know
- 99. Refused

37. **[IF MULTIPLEMEASURES = YES]** Did the fact you used a HEAT loan to finance your **[TOPPRIORITY]** encourage you to make more energy efficiency improvements than you otherwise would have done without the loan?

- 1. Yes
- 2. No
- 98. Don't know
- 99. Refused

38. **[IF Q37=1]** Which improvements did the loan enable you to install that you otherwise would not have? *[PROGRAMMER: ALLOW RESPONDENT TO SELECT MULTIPLE IMPROVEMENTS FROM TABLE OR LIST OF RELEVANT IMPROVEMENTS; EXCLUDE PREVIOUSLY IDENTIFIED TOPPRIORITY IMPROVEMENT FROM TABLE OR LIST]*

Display If	Improvements
[IF WX = 1]	Insulation and/or air sealing
[IF WINDOWS = 1]	Windows
[IF HEAT = 1]	Heating system
[IF WATER = 1]	Water heating system
[IF AIR = 1]	Air conditioner
[IF OTHER = 1]	[Other improvement]

- 98. Don't know
- 99. Refused

39. How important was the fact that **[PA]** offers the HEAT loan at zero interest in your decision to take out the loan?

- 1. Very important
- 2. Somewhat important
- 3. Neither important or unimportant
- 4. Not very important
- 5. Not at all important
- 98. Don't know
- 99. Refused

40. If the interest rate was **[INTERESTRATE]**, would you still have installed all, some, or none of the measures? *[PROGRAMMER: PULL THE INTEREST RATE FIELD FROM THE TABLE BELOW. ONCE THE RESPONDENT SELECTS "ALL", STOP ASKING THE QUESTION]*

Interest Rate	All	Some	None
5%			
4%			
3%			
2%			
1%			

- 98. Don't know
- 99. Refused

41. Why did you select the participating lender that you worked with? *[MULTIPLE RESPONSES]*

1. I was already a customer
 2. I found them on MassSave.com
 3. Recommended by a friend/family member
 4. Recommended by a contractor
 5. Recommended by the Energy Specialist that did my assessment
 6. I choose the one closest to my home
 7. Lender marketing
 8. Another reason **[RECORD RESPONSE]**
- 98. Don't know
 - 99. Refused

42. On a scale of 1 to 5, where 1 is not at all satisfied and 5 is very satisfied, how would you rate your experience working with the lender you selected to secure the HEAT loan?

1. **[RECORD RATING]**
- 98. Don't know
 - 99. Refused

43. **[IF Q0=1,2,5]** Why do you say that?

1. **[RECORD RESPONSE]**
- 98. Don't know
 - 99. Refused

44. Are there any additional energy-efficiency improvements to your home that you did not pursue as part of this HEAT loan, but would consider in the future?

1. Yes **[RECORD RESPONSE]**
 2. No
- 98. Don't know
 - 99. Refused

45. **[IF Q44=1]** If you could be eligible for a second HEAT loan in the future, would you consider using it for this, or any other, improvements?

1. Yes
2. No

- 98. Don't know
- 99. Refused

46. Do you have any recommendations for improving the HEAT Loan process with participating lenders?

- 1. Yes **[RECORD RESPONSE]**
- 2. No
- 98. Don't know
- 99. Refused

C.6 Authorized HEAT Loan Customers (Customer Type B)

[ASK SECTION 6 IF HEATLOAN=AUTHORIZED, OTHERWISE SKIP TO SECTION 7, Q80]

47. At the beginning the survey, you confirmed you were authorized by [LV] to seek a HEAT loan, but that you did not end up taking out a HEAT loan from a participating lender. Although you did not take out the loan, did you initiate the HEAT loan application process with a participating lender?

- 1. Yes
- 2. No
- 98. Don't know
- 99. Refused

[PROGRAMMER: USE ANSWERS TO Q47 TO CREATE THE FOLLOWING RESPONDENT CATEGORY "ENGAGEDLENDER"]

- IF Q47 = 1, THEN ENGAGEDLENDER = YES
- IF Q47 = 2, THEN ENGAGEDLENDER = NO

48. According to program records, you were authorized to use the HEAT loan to make the following energy efficiency improvements to your home. Did you make any of these improvements to your home outside of the HEAT loan process?

[PROGRAMMER: USE LOGIC BELOW TO PRESENT THE RELEVANT MEASURES TO EACH RESPONDENT]

Logic	IMPROVEMENT	Yes	No	DK	REF
[IF WX = 1]	Insulation and/or air sealing				
[IF WINDOWS = 1]	Windows				
[IF HEAT = 1]	Heating system				
[IF WATER = 1]	Water heating system				
[IF AIR = 1]	Air conditioner				
[IF OTHER = 1]	[Other improvement]				

[PROGRAMMER: USE ANSWERS TO Q48 TO CREATE THE FOLLOWING RESPONDENT CATEGORY "INSTALLWITHOUTLOAN"]

- IF ZERO "YES" RESPONSES TO Q48, THEN INSTALLWITHOUTLOAN = NONE
- IF ALL "YES" RESPONSES TO Q48, THEN INSTALLWITHOUTLOAN = ALL
- IF NOT ZERO "YES" OR ALL "YES" RESPONSES TO Q48, THEN INSTALLWITHOUTLOAN = SOME

C.6.1 DID NOT INSTALL

[ASK Q49-Q60, IF INSTALLWITHOUTLOAN = NONE, OTHERWISE SKIP TO Q61]

49. Why did you decide to not to make any energy efficiency improvements to your home at this time?

[MULTIPLE RESPONSES]

1. Timing was not right
2. Making the improvements was too much of an inconvenience
3. I had more important financial priorities
4. The total cost of the improvements, after the Mass Save rebates and the HEAT loan, was too high
5. I did not want to take on the debt associated with making improvements
6. I did not think the investment would pay itself back in lower energy bills
7. **[SHOW ONLY IF ENGAGEDLENDER =YES]** I started, but did not, complete the participating lender's application process
8. **[SHOW ONLY IF ENGAGEDLENDER =YES]** The participating lender declined my application for a HEAT loan
9. I am planning to move
10. Something else **[RECORD RESPONSE]**
- 98. Don't know
- 99. Refused

50. Do you plan to make some, or all, of the identified energy efficiency improvements in the future?

1. Yes, all of them
2. Yes, some of them
3. No
- 98. Don't know
- 99. Refused

51. **[IF Q50=2]** Which improvements do you plan to make in the future?

[PROGRAMMER: ALLOW RESPONDENT TO SELECT FROM TABLE OR LIST OF RELEVANT IMPROVEMENTS]

Display If	Improvements
[IF WX = 1]	Insulation and/or air sealing
[IF WINDOWS = 1]	Windows
[IF HEAT = 1]	Heating system
[IF WATER = 1]	Water heating system
[IF AIR = 1]	Air conditioner
[IF OTHER = 1]	[Other improvement]

52. **[ENGAGEDLENDER =YES AND Q49 <= 7 OR 8]** Approximately, how far through the participating lender's application process did you get?

1. Met with a lender but did not submit any paperwork
2. Submitted some but not all paperwork
3. Submitted all the paperwork
- 98. Don't know
- 99. Refused

53. **[IF Q52=1 OR 2 OR Q49=7]** Why didn't you complete the participating lender's application process?

1. The lender's application process was too complex/demanding
2. It took/was going to take too long to complete
3. I did not think I'd be approved for the loan
4. The total loan amount was not large enough that it required me to use financing
5. I did not want to take on debt
6. I wanted to finance other home improvements that were not eligible for the HEAT loan
7. Something else **[RECORD RESPONSE]**
- 98. Don't know
- 99. Refused

54. **[IF Q53=1]** What specific aspect of the lender application process was too complex or demanding?

1. **[RECORD RESPONSE]**
- 98. Don't know
- 99. Refused

55. **[IF Q53=2]** How long was it going to take?

1. **[RECORD RESPONSE IN WEEKS]**
- 98. Don't know
- 99. Refused

56. **[IF Q53=3]** Would you have continued to try and secure a HEAT loan if you felt you had a better chance of being approved?

1. **[RECORD RESPONSE]**
- 98. Don't know
- 99. Refused

57. **[IF Q53 = 6]** What did you want to finance that was not approved as part the HEAT loan?

1. **[RECORD RESPONSE]**
- 98. Don't know
- 99. Refused

58. **[IF ENGAGEDLENDER =YES]** Although you did not take out a HEAT loan, on a scale of 1 to 5, where 1 is not at all satisfied and 5 is very satisfied, how would you rate your experience interacting with the lender?

1. **[RECORD RATING]**
- 98. Don't know
- 99. Refused

59. **[IF Q58=1,2,5]** Why do you say that?

1. **[RECORD RESPONSE]**
- 98. Don't know
- 99. Refused

60. If there anything that **[PA]** could have done differently to encourage you to install the identified energy efficiency improvements?

1. **[RECORD RESPONSE]**
- 98. Don't know
- 99. Refused

C.6.2 INSTALLED WITHOUT HEAT LOAN

[ASK Q61-Q79, IF INSTALLWITHOUTLOAN = SOME OR ALL, OTHERWISE SKIP TO Q80]

61. Why did you decide to pay for the energy efficiency improvement(s) yourself, or use alternative non-HEAT loan financing? *[MULTIPLE RESPONSES]*

1. **[SHOW ONLY IF ENGAGEDLENDER =YES]** The participating lender's application process was too complex/demanding
2. **[SHOW ONLY IF ENGAGEDLENDER =YES]** It was going to take too long to complete the participating lender's application process
3. **[SHOW ONLY IF ENGAGEDLENDER =YES]** The participating lender declined my application for a HEAT loan
4. I did not think I'd be approved for the loan
5. The total loan amount was not large enough that it required me to use financing
6. I did not want to take on debt
7. I wanted to finance other home improvements that were not eligible for the HEAT loan
8. I wanted to finance through a different lender that didn't offer the HEAT loan
9. Something else **[RECORD RESPONSE]**
- 98. Don't know
- 99. Refused

62. Did you pay for the energy efficiency improvement(s) yourself with cash, or use an alternative, non-HEAT loan financing?

1. Paid for it myself with cash
2. Used alternative non-HEAT loan financing (credit card, line of home equity credit, etc.)
- 98. Don't know
- 99. Refused

63. **[IF Q62= 2]** Which of the following mechanisms did you use to pay for the improvement(s) yourself? *[MULTIPLE RESPONSES]*

1. A new home equity line of credit
2. An existing home equity line of credit
3. Credit Card
4. A lender that did not offer the HEAT loan
5. The contractor I worked with also provided financing
6. Support from family and/or friends
7. Something else **[RECORD RESPONSE]**
- 98. Don't know
- 99. Refused

64. **[IF Q63=5]** Did the contractor also offer a zero interest loan?

- 1. Yes
- 2. No
- 98. Don't know
- 99. Refused

65. **[IF Q63=5]** What was the primary reason you opted to finance through your contractor instead of using the HEAT loan?

- 1. Faster
- 2. Simpler
- 3. I wanted to get started before I could schedule my home assessment
- 4. Something else **[RECORD RESPONSE]**
- 98. Don't know
- 99. Refused

66. **[IF Q63=5]** Did your contractor offer guidance on whether to finance through him or the through the HEAT loan?

- 1. Yes
- 2. No
- 98. Don't know
- 99. Refused

67. **[IF Q66=1]** What did your contractor say?

- 1. **[RECORD RESPONSE]**
- 98. Don't know
- 99. Refused

68. **[IF Q61=1]** What specific aspect of the lender application process was too complex or demanding?

- 2. **[RECORD RESPONSE]**
- 98. Don't know
- 99. Refused

69. **[IF Q61=2]** How long was it going to take?

- 2. **[RECORD RESPONSE IN WEEKS]**
- 98. Don't know
- 99. Refused

70. **[IF Q61=4]** Would you have continued to try and secure a HEAT loan if you felt you had a better chance of being approved?

- 2. **[RECORD RESPONSE]**
- 98. Don't know
- 99. Refused

71. **[IF Q61=7]** What were the other home improvements you wanted to make that were not eligible for the HEAT loan?

1. **[RECORD RESPONSE]**
 - 98. Don't know
 - 99. Refused
72. **[IF ENGAGEDLENDER =YES]** Although you did not take out a HEAT loan, on a scale of 1 to 5, where 1 is not at all satisfied and 5 is very satisfied, how would you rate your experience interacting with the participating lender?
1. **[RECORD RATING]**
 - 98. Don't know
 - 99. Refused
73. **[IF Q72=1,2,5]** Why do you say that?
2. **[RECORD RESPONSE]**
 - 98. Don't know
 - 99. Refused
74. **[IF ENGAGEDLENDER = YES]** Do you have any recommendations for improving the HEAT Loan process with participating lenders?
1. Yes **[RECORD RESPONSE]**
 1. No
 - 98. Don't know
 - 99. Refused
75. **[IF Q61=8 or Q63=4]** Why did you want to finance through a lender that was not approved to offer the HEAT loan? *[MULTIPLE RESPONSES]*
1. **[SHOW ONLY IF ENGAGEDLENDER =YES]** I attempted to work with a participating lender, but I did not have a positive experience, so I switched
 2. I did not want to bank with any of the participating lenders
 3. None of the participating lenders were nearby/convenient
 4. I did not want to establish a financial relationship with a new lender
 5. I wanted to work with my existing bank, which was not participating lender
 6. I wanted to finance other home improvements that were not eligible for the HEAT loan
 7. I did not think I would be approved by any of the participating lenders
 8. The lenders were not local or convenient to my location
 9. Something else **[RECORD RESPONSE]**
 - 98. Don't know
 - 99. Refused
76. **[IF Q75 = 1]** What did not work out well during your interactions with the participating lender?

- 1. The application process was too complex/demanding
- 2. It was going to take too long to complete the application process
- 3. My application for the HEAT loan was declined
- 4. The customer service was not satisfactory
- 5. Something else **[RECORD RESPONSE]**
- 98. Don't know
- 99. Refused

77. **[IF Q75 = 2]** What was your concern with the set of participating lenders?

- 2. **[RECORD RESPONSE]**
- 98. Don't know
- 99. Refused

78. **[IF INSTALLWITHOUTLOAN = SOME]** If you had used the HEAT loan to finance, rather than **[RESPONSE TO Q63]**, would you have installed the other identified energy efficiency improvements to your home?

- 1. Yes, all of the them
- 2. Yes, some of them
- 3. No
- 98. Don't know
- 99. Refused

79. **[IF INSTALLWITHOUTLOAN = SOME]** If there anything that **[PA]** could have done differently to have encouraged you to install the remaining energy efficiency improvements?

- 1. **[RECORD RESPONSE]**
- 98. Don't know
- 99. Refused

C.7 Demographics

We are almost finished. The last few questions are just for classification purposes about your household. Again, all information you provide will be kept confidential.

80. In what year were you born?

1. **[RECORD YEAR]**
- 99. Refused

81. Including yourself, how many total people reside in your home?

1. **[RECORD COUNT]**
- 99. Refused

82. How many of those people are...

1. Children 6 and younger **[RECORD COUNT]**
2. Children 7 to 17 **[RECORD COUNT]**
3. Adults 18 to 64 **[RECORD COUNT]**
4. Adults 65 and older **[RECORD COUNT]**

83. What was your total approximate annual reported household income in 2016 before any taxes, rounded to the nearest five thousand?

1. **[RECORD AMOUNT]**
- 99. Refused

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

1. Less than high school diploma or equivalent
2. High school diploma or equivalent
3. Technical or business school certificate/2-year college degree/some college
4. 4-year college degree/bachelor's degree
5. Graduate or professional degree/masters or PhD
- 98. Don't Know
- 99. Refused

85. What is your gender?

1. Male
2. Female
3. Other
- 98. Don't Know
- 99. Refused

C.8 Closing

86. Would you be willing to participate in a follow-up telephone interview, discussing the topics from this survey in greater detail? These interviews will be scheduled at a day and time that is convenient for you. **Participants in these interviews will be offered \$50 for their participation.** The interview should take 30-45 minutes.

1. Yes, I am interested in participating in these detailed interviews
2. No, I am not interested in participating in these detailed interviews
- 98. Don't know
- 99. Refused

87. You've been asked a series of specific questions about your experience with the HEAT loan offer. Before we finish, is there anything else you'd like to share about your experience that would help **[PA]** improve the offer and encourage customers to make energy efficiency improvement to their home?

1. **[RECORD RESPONSE]**
- 98. Don't know
- 99. Refused

[THANK AND END SURVEY]

APPENDIX D. ADDITIONAL CUSTOMER SURVEY RESULTS

D.1 Introduction

Appendix D includes the analysis weights used to calculate participant survey results, as well as the survey results. The team did not include the responses to questions that had too few respondents. Total respondent results, LV-specific results (e.g., CLEAResult/RISE), and participant type-specific results (Authorized/Recipient) when the results differed were also included. When results did not differ, the team only provided total respondent (or “overall”) results.

D.2 Completed Surveys and Analysis Weights

The following tables summarize the total number of HEAT loan survey customers by PA, LV, and participation type during the analysis period, the number of each surveyed, and the corresponding set of analysis weights used in the evaluation team’s analysis.

Table D-1. Participation by PA, Customer Type, and LV - Population

PA	Customer Type		Overall
	Authorized	Recipient	
Cape Light Compact	500	476	976
Columbia Gas	46	38	84
Eversource	1,068	1,192	2,260
Liberty Utilities	8	2	10
National Grid	1,488	1,662	3,150
Unitil	78	63	141
Overall	3,188	3,433	6,621

Table D-2. Participation by PA, Customer Type, and LV - Sample

PA	Customer Type		Overall
	Authorized	Recipient	
Cape Light Compact	29	26	55
Columbia Gas	6	1	7
Eversource	56	85	141
National Grid	77	97	174
Unitil	6	1	7
Overall	174	210	384

Table D-3. Analysis Weights by PA, Customer Type, and LV

PA	Customer Type	
	Authorized	Recipient
Cape Light Compact	1	1.06
Columbia Gas	0.44	2.2
Eversource	1.11	0.81
National Grid	1.12	0.99
Unitil	0.75	3.65

D.3 Additional Surveys Results

The following results are organized by survey topic area and linked to the final customer survey via the provided question number and associated skip logic.

D.3.1 Authorized Customers (Customer Types A and B)

Point of Entry

Table D-4. Which of the following statements most closely describes why you signed up for an energy assessment (Q9)

Response	Overall	LV	
		CLEAResult	RISE
I wanted to learn what opportunities existed for me to improve the energy efficiency of my home	40%	37%	54%
I was interested in the free measures given as part of the energy assessment	5%	5%	7%
I was interested in using the HEAT loan to finance a specific energy efficiency improvement (e.g., a new high-efficiency furnace or hot water heater) and the loan required that I sign up for a whole home energy assessment	53%	56%	39%
Don't know	1%	1%	0%
Respondents	362	295	66

Non-HES Path
Table D-5. How significant of a factor was the availability of the zero interest HEAT loan in your decision to pursue this specific energy efficiency improvement(s)? (Q10)

Response	Overall
Very significant	84%
Somewhat significant	13%
Neither significant or insignificant	1%
Not very significant	1%
Not at all significant	1%
Don't know	1%
Refused	0%
Respondents	190

Table D-6. If you could have received a HEAT loan without having an energy assessment, would you have skipped the assessment and just gotten the HEAT loan? (Q12)

Response	Overall	Customer Type		LV	
		Authorized	Recipient	CLEAResult	RISE
Yes	36%	18%	33%	27%	19%
No	56%	59%	53%	53%	72%
Don't know	18%	23%	13%	19%	9%
Refused	0%	0%	0%	0%	0%
Respondents	190	88	101	164	25

HES Path
Table D-7. Prior to your home energy assessment were you aware that [PA] works with qualified lenders to offer zero interest loans for energy efficiency improvements? (Q13)

Response	Overall
Yes	30%
No	69%
Don't know	1%
Refused	0%
Respondents	166

Table D-8. How significant of a factor was the availability of the zero interest HEAT loan in your decision to sign up for the assessment? (Q15)

Response	Overall	Customer Type		LV	
		Authorized	Recipient	CLEARResult	RISE
Very significant	65%	75%	57%	68%	57%
Somewhat significant	29%	20%	36%	26%	35%
Neither significant or insignificant	6%	5%	7%	6%	7%
Not very significant	0%	0%	0%	0%	0%
Not at all significant	0%	0%	0%	0%	0%
Don't know	0%	0%	0%	0%	0%
Refused	0%	0%	0%	0%	0%
Respondents	49	21	28	35	14

Energy Specialists

Table D-9. Did your Energy Specialist mention the HEAT loan during your assessment? (Q16)

Response	Overall
Yes	90%
No	2%
Don't know	8%
Refused	0%
Respondents	359

Table D-10. How much time did the Energy Specialist take in talking to you about the HEAT Loan? Just a brief mention, a few minutes, or a more in-depth detailed discussion about the options. (Q17)

Response	Overall
Just a brief mention	7%
A few minutes	46%
An in-depth detailed discussion about the options	44%
Don't know	3%
Refused	0%
Respondents	325

Table D-11. Was the Energy Specialist able to answer any questions you may have had about the HEAT loan? (Q18)

Response	Overall
Yes, in satisfactory detail	70%
Yes, but only generally	19%
No	1%
I did not ask any questions	8%
Don't know	2%
Refused	0%
Respondents	325

Website
Table D-12. Did you visit the HEAT Loan page on MassSave.com before deciding to get authorized for the HEAT loan? (Q20)

Response	Overall	LV	
		CLEAResult	RISE
Yes	74%	78%	60%
No	20%	17%	30%
Don't know	6%	5%	10%
Refused	0%	0%	0%
Respondents	359	293	65

Table D-13. How useful did you find the information on the HEAT loan page? (Q21)

Response	Overall
Very useful	63%
Somewhat useful	34%
Neither useful or not useful	2%
Not very useful	0%
Not at all useful	0%
Don't know	1%
Refused	0%
Respondents	267

Authorization Process

Table 6. Did you have to apply for authorization multiple times and/or provide additional information to [LV] after your initial submission? (Q28)

Response	Overall	Customer Type		LV	
		Authorized	Recipient	CLEARResult	RISE
Yes	22%	21%	22%	26%	4%
No	73%	74%	72%	69%	91%
Don't know	5%	4%	6%	5%	4%
Rather not answer	1%	1%	0%	1%	0%
Respondents	355	171	183	290	64

D.3.2 HEAT Loan Recipients (Customer Type A)

Table D-14. Was there a specific energy efficiency improvement that you were most interested in installing that drove your decision to seek a HEAT loan? (Q31)

Response	Overall	LV	
		CLEARResult	RISE
Yes	85%	84%	94%
No	11%	11%	6%
Don't know	4%	5%	0%
Refused	0%	0%	0%
Respondents	123	107	16

Table D-15. Which? (Q32)

Response	Overall	LV	
		CLEARResult	RISE
Insulation and/or air sealing	3%	2%	11%
Windows	5%	4%	7%
Heating system	76%	77%	69%
Water heating system	6%	7%	0%
Air conditioner	11%	10%	13%
Respondents	105	90	15

Table D-16. Would you have installed [Top Priority] without the HEAT loan, either by paying for it yourself or finding alternative financing? (Q33)

Response	Overall	LV	
		CLEARResult	RISE
Yes	42%	42%	40%
No	36%	34%	50%
Don't know	22%	23%	11%
Rather not answer	1%	1%	0%
Respondents	124	108	16

Table D-17. Would you have [DISPLAY LANGAUGE] [IMPROVEMENTS] without the HEAT loan, either by paying for it yourself or finding alternative financing? (Q34)

Response	Overall
Yes	33%
No	51%
Don't know	16%
Refused	0%
Respondents	266

Table D-18. Would you have installed [Only Measure] without the HEAT loan, either by paying for it yourself or finding alternative financing? (Q35)

Response	Overall	LV	
		CLEARResult	RISE
Yes	41%	45%	27%
No	35%	36%	33%
Don't know	23%	19%	40%
Refused	0%	0%	0%
Respondents	172	135	36

Table D-19. Would you have [DISPLAY LANGAUGE] [IMPROVEMENTS] without the HEAT loan, either by paying for it yourself or finding alternative financing? (Q36)

Response	Overall
Yes	40%
No	38%
Don't know	22%
Refused	0%
Respondents	172

Table D-20. Did the fact you used a HEAT loan to finance your [Top Priority] encourage you to make more energy efficiency improvements than you otherwise would have done without the loan? (Q37)

Response	Overall
Yes	81%
No	15%
Don't know	3%
Refused	0%
Respondents	124

Table D-21. Which improvements did the loan enable you to install that you otherwise would not have? (Q38)

Response	Overall	LV	
		CLEARResult	RISE
Install insulation and/or air sealing	9%	6%	29%
Install windows	3%	2%	10%
Install heating system	40%	41%	27%
Install water heating system	24%	24%	22%
Install air conditioner	23%	25%	11%
Don't know	1%	1%	0%
Rather not answer	1%	1%	0%
Respondents	159	140	18

Table D-22. How important was the fact that [PA] offers the HEAT loan at zero interest in your decision to take out the loan? (Q39)

Response	Overall
Very important	90%
Somewhat important	6%
Neither important or unimportant	2%
Not very important	0%
Not at all important	0%
Don't know	1%
Refused	0%
Respondents	297

Table D-23. Why did you select the participating lender that you worked with? (Q41)

Response	Overall	LV	
		CLEAResult	RISE
I was already a customer	26%	22%	47%
I found on MassSave.com	34%	36%	26%
Recommended by a friend/family member	6%	6%	6%
Recommend by a contractor	3%	4%	2%
Recommended by the Energy Specialist that did my assessment	3%	3%	3%
I choose the one closest to my home	22%	24%	14%
Lender marketing	0%	0%	0%
Another reason	4%	5%	2%
Don't know	0%	0%	0%
Refused	0%	0%	0%
Respondents	377	312	65

Table D-24. On a scale of 1 to 5, where 1 is not at all satisfied and 5 is very satisfied, how would you rate your experience working with the lender you selected to secure the HEAT loan? (Q42)

Response	Overall	LV	
		CLEAResult	RISE
5 = Very satisfied	84%	81%	96%
4	10%	12%	4%
3	3%	4%	0%
2	2%	2%	0%
1 = Not at all satisfied	1%	1%	0%
Don't know	0%	0%	0%
Refused	0%	0%	0%
Respondents	297	243	53

Table D-25. If you could be eligible for a second HEAT loan in the future, would you consider using it for this, or any other, improvements? (Q45)

Response	Overall
Yes	89%
No	1%
Don't know	9%
Refused	0%
Respondents	131

D.3.3 Authorized HEAT Loan Customers (Customer Type B)

Table D-26. At the beginning the survey, you confirmed you were authorized by [LV] to seek a HEAT loan, but that you did not end up taking out a HEAT loan from a participating lender. Although you did not take out the loan, did you initiate the HEAT loan application process with a participating lender? (Q47)

Response	Overall
Yes	50%
No	39%
Don't know	8%
Rather not answer	4%
Respondents	55

Table D-27. According to the program records, you were authorized to use the HEAT loan to make the following energy efficiency improvements to your home. Did you make any of these improvements to your home outside of the HEAT loan process? (Q48)

Response	Overall	LV	
		CLEARResult	RISE
Yes	57%	53%	73%
Rather not answer	2%	2%	0%
No	40%	43%	27%
Don't know	2%	2%	0%
Respondents	63	52	11

Did Not Install
Table D-28. Why did you decide not to make any energy efficiency improvements to your home at this time? (Q49)

Response	Overall
Timing was not right	11%
Making the improvements was too much of an inconvenience	4%
I had more important financial priorities	19%
The total cost of the improvements, after the Mass Save rebates and the HEAT loan, was too high	11%
I did not want to take on the debt associated with making improvements	8%
I did not think the investment would pay itself back in lower energy bills	0%
I started, but did not complete the participating lender's application process	4%
The participating lender declined my application for a HEAT loan	18%
I am planning to move	0%
Something else	15%
Don't know	11%
Refused	0%
Respondents	55

Table D-29. Do you plan to make some, or all, of the identified energy efficiency improvements in the future? (Q50)

Response	Overall
Yes, all of them	46%
Yes, some of them	50%
No	0%
Don't know	4%
Refused	0%
Respondents	24

Table D-30. Which improvements do you plan to make in the future? (Q51)

Response	Overall
Insulation and/or air sealing	23%
Windows	18%
Heating system	35%
Water heating system	0%
Air conditioner	24%
Other improvement	0%
Respondents	18

Table D-31. Although you did not take out a HEAT loan, on a scale of 1 to 5, where 1 is not at all satisfied and 5 is very satisfied, how would you rate your experience interacting with the lender? (Q58)

Response	Overall
5 = Very satisfied	30%
4	24%
3	23%
2	7%
1 = Not at all satisfied	8%
Don't know	8%
Refused	0%
Respondents	14

Installed Without HEAT Loan

Table D-32. Did you pay for the energy efficiency improvement(s) yourself with cash, or use an alternative, non-HEAT loan financing? (Q62)

Response	Overall
Paid for it myself with cash	50%
Used alternative non-HEAT loan financing (credit card, line of home equity credit, etc.)	22%
Don't know	7%
Rather not answer	21%
Respondents	30

Table D-33. Which of the following mechanisms did you use to pay for the improvement(s) yourself? (Q63)

Response	Overall
A new home equity line of credit	16%
An existing home equity line of credit	0%
Credit card	56%
A lender that did not offer the HEAT loan	0%
The contractor I worked with also provided financing	0%
Support from family and/or friends	0%
Something else	0%
Don't know	16%
Rather not answer	11%
Respondents	6

Table D-34. Although you did not take out a HEAT loan, on a scale of 1 to 5, where 1 is not at all satisfied and 5 is very satisfied, how would you rate your experience interacting with the participating lender? (Q72)

Response	Overall
5 = Very satisfied	15%
4	31%
3	22%
2	15%
1 = Not at all satisfied	10%
Don't know	8%
Rather not answer	7%
Respondents	14

Table D-35. If you had used the HEAT loan to finance, rather than [RESPONSE TO Q63], would you have installed the other identified energy efficiency improvements to your home? (Q78)

Response	Overall	LV	
		CLEARResult	RISE
Yes, all of them	29%	24%	48%
Yes, some of them	22%	28%	0%
No	0%	0%	0%
Don't know	46%	48%	38%
Rather not answer	3%	0%	14%
Respondents	30	23	7

D.3.4 Demographics

Table D-36. What is the highest level of education that you have completed? (Q84)

Response	Overall
Less than high school diploma or equivalent	0%
High school diploma or equivalent	10%
Technical or business school certificate/2-year college degree/some college	17%
4-year college degree/bachelor's degree	32%
Graduate or professional degree/masters or PhD	36%
Don't know	0%
Rather not answer	5%
Respondents	351

Table D-37. What is your gender? (Q85)

Response	Overall
Male	55%
Female	45%
Other	0%
Don't know	0%
Refused	0%
Respondents	190

APPENDIX E. CUSTOMER SURVEY INTERVIEW GUIDE

The evaluation team will use this guide to complete follow-up phone interviews with a subset of the customers that responded to the RES 37 online survey. The team will target customers for interviews that were authorized for a HEAT loan but ultimately did not go on and receive a HEAT loan. The interviews will assess the specific reasons that each customer did not complete the HEAT loan process, and whether they made any energy efficiency improvements without the loan. Interview sections include:

- Background
- HEAT Loan Authorization
- Lender Interaction
- Measures
- Marketing and Communications
- Closing

E.1 Background

I'd like to begin by asking a few background questions.

1. Can you start by verifying when you received a home energy assessment?
2. What motivated you to get an assessment?
 - Were you interested in pursuing any specific energy efficiency improvements to your home before you had your assessment?
 - In the survey you said the HEAT loan was **[significant/insignificant, Q14]** factor in your decision to sign up for the assessment. Can you tell me more about your thought process?
3. Please talk to me about your assessment.
 - How did it go? What worked well? What worked less well?
4. What did your Energy Specialists say about the HEAT loan?
 - Did your Energy Specialist encourage you to get authorized for the loan?
 - Why do you say that?

E.2 HEAT Loan Authorization

Next, I'd like to ask a handful of questions related to the HEAT loan authorization process, that is working with **[LV]** to get approved to seek a HEAT loan from an approved lender.

5. Please describe the authorization process in your own words.
 - a. What did you think of the authorization process overall?
6. Tell me a little bit about your experience working with **[LV]**?
 - b. Did you feel that you had access to information and instructions for completing the authorization process?
 - c. Did you have to resubmit any incomplete or missing documentation?
 - d. About how long did it take?

E.3 Lender Interaction (If Applicable)

As part of the survey you indicated that you started the HEAT loan application process with a participating lender.

7. Can you tell me more about your experience working with the lender?
 - **[IF APPLICABLE]** You also indicated you had some issues working with the participating lender. Can you elaborate?
 - You said in the survey that you did not complete the participating lender's application process because **[Q47]**. Can you share a little more about this?
8. In the survey, you indicated that **[PA]** could have encouraged you to take out the HEAT loan by **[Q54]**. Could you elaborate on this point?

E.4 Measures

I'd like to shift gears to some questions about the recommended measures and the financing options you considered outside of the HEAT loan.

IF INTERVIEWEE INSTALLED MEASURES WITHOUT HEAT LOAN

In the survey you indicated that you used **[Q57]** to install **[MEASURES]** without the HEAT loan

9. Can you tell me more about why you decided to take this path?
 - a. **[IF NOT PREVIOUSLY COMMUNICATED]** Why did you prefer this path to the HEAT loan? Why did you prefer it to other non-HEAT loan options?
10. Do you feel like you would have completed more, less, or the same number of measures if you had used the HEAT loan financing option instead?
 - a. How, if at all, did the fact you used **[Q57]** instead of the HEAT loan impact the number of improvements you made?
 - b. What about the specifics of the improvements you made? For example, some customers might install a less efficient – and less expensive – appliance without access to the HEAT loan.
11. You indicated in the survey that you were also interested in making **[Q65]** improvements to your home, which are not covered by the HEAT loan. Was the lack of HEAT loan coverage for these improvements a reason that you ultimately did not get the HEAT loan?

IF INTERVIEWEE DID NOT INSTALL MEASURES

In the survey, you indicated that you decided not to make energy efficiency improvements to your home because [Q43].

12. Can you walk me through how you came to this decision?
13. You also said that you [do/do not – Q44] plan to make these improvements in the future. Why is that?
14. **[IF NOT PLANNING TO INSTALL]** What circumstances would have to change for you to consider installing these measures?
15. **[IF PLANNING TO INSTALL]** Will you consider the HEAT loan to finance these measures? Why do you say that?

E.5 Marketing and Communications

Finally, I have a few questions about how the program was marketed to you and how you felt about the level of communication and transparency in the process.

16. Did you feel that the information you needed about the HEA and HEAT loan was easily accessible?
 - Did you visit MassSave.com? Was it useful?
 - Did you feel the requirements, and procedural steps, for the HEAT loan were clearly communicated to you? If not, what information would have been helpful?

E.6 Closing

17. Is there anything else not covered in the interview that you would like to share regarding your experience with the HEA, the HEAT loan, or Mass Save programs?

Thank you so much for your time.