

**Date: September 12, 2012**

**To: The Electric and Gas Program Administrators of Massachusetts**

**From: The Residential Retrofit Evaluation Team**

**Re: 2012 HES Pre-Weatherization Initiative: Interim Evaluation Findings**

## Introduction

In May 2012, the Massachusetts Program Administrators (PAs) launched a Pre-Weatherization Initiative (initiative) as part of the Home Energy Services (HES) Program, designed to help reduce the financial burden of addressing common pre-weatherization repairs that are required prior to installing certain HES measures.

In March 2012, the PAs asked The Cadmus Group, Inc., (The Evaluation Team) to evaluate the initiative, seeking to determine if additional pre-weatherization incentives motivated customers to undertake required repairs they otherwise would not have completed.

This initiative's evaluation occurs in two phases:

- Phase 1 tasks (summarized in this memo) consisted of: interviews with PA and lead vendor HES program managers; analysis of initiative participation data available to date; and surveys with participant and non-participant NSTAR, National Grid, and Berkshire Gas customers.<sup>1</sup>
- Phase 2 will consist of: follow-up interviews with PAs and lead vendors, as needed; surveys with participants and non-participants from all remaining PAs, as well as with additional NSTAR, National Grid, and Berkshire Gas customers; and additional data analysis of both initiative data and historical HES data.

Although we are at too early a stage to address the initiative definitively, this memo offers preliminary findings for program planning purposes.

## Initiative Overview

The initiative offers an additional incentive to HES customers who are facing barriers to installing certain assessment-recommended weatherization measures: the incentive is given if

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<sup>1</sup> These three PAs offered their customers the initiative with a 30-day deadline to complete the initiative requirements. The remaining PAs offered their customers a 90-day deadline to complete the initiative requirements; therefore, their participant data were not available for this interim memo.

they take action within a specified number of days from receiving the recommendations. The initiative seeks to motivate home energy assessment customers by offering an additional incentive to help offset the added costs of addressing the specific barriers to weatherization identified during their assessment.

The financial incentive, offered in addition to the current HES Program offerings, covers three common barriers:

1. Evidence of knob and tube wiring;
2. General combustion safety; and
3. Improper dryer venting.

Table 1 shows the incentive levels, risks presented by the barriers, and weatherization measures impacted by the barriers.

**Table 1. Initiative Barriers**

Barrier	Incentive	Risk of Barrier	Weatherization Measure Impacted	Action Necessary to Clear Barrier	Additional Actions Necessary to Clear Barrier
Evidence of knob and tube wiring	Up to \$250	Fire Hazard	Insulation	Inspect wiring to determine if inactive	If knob and tube wiring is live, it must be replaced to clear barrier
General combustion safety	Up to \$300	Airborne Particulates or Carbon Monoxide	Air Sealing, Insulation	Repair or replace	None
Improper dryer venting*	Up to \$250	Fire Hazard	Air Sealing, Insulation	Install, repair, or replace	None

\* Cape Light Compact did not include improper dryer venting as a pre-weatherization initiative measure, as this barrier is already addressed as part of the home energy assessment.

PAs began offering the incentives in May 2012, and customers had 30 or 90 days (depending on their PA; Table 2) to decide whether to participate in the initiative and clear the barrier to move forward with weatherization recommendations.

**Table 2. PA-Specific Deadlines**

30 Day Deadline	90 Day Deadline
National Grid	New England Gas
NSTAR	Columbia Gas
Berkshire Gas	WMECO
	Cape Light Compact
	Unitil

The majority of interviewed lead vendors and PAs said they primarily offered the initiative to new assessment customers at the time of the audit. However, some PAs also had lead vendors conduct call backs to customers with barriers identified in a previous audit, and offered them the initiative if the barrier had not yet been cleared. For this first phase:

- National Grid offered additional incentives to new audit customers only.
- NSTAR and Berkshire Gas offered additional incentives to both new audit customers and customers who had previously had an audit as early as November 2011. The incentives were offered through mailings or call backs.

Table 3 shows the number of initiative offers, per PA, through the end of July 2012, and the number of customers who accepted the offer. The disparity in acceptance rates are likely the result of program design differences, as Berkshire Gas and NSTAR offered the initiative to customers who had previously participated in the HES Program from November 2011 to present,<sup>2</sup> whereas National Grid offered the initiative to new audit customers only. Customer survey results discussed in this document are based on surveys conducted with a sample of these participants.

**Table 3. Acceptance Rate of Initiative per Program Administrator for Phase 1**

Program Administrator	Number of Initiative Offers	Number of Initiative Acceptances	Acceptance Rate
National Grid	161	38	24%
NSTAR	125	26	21%
Berkshire Gas	77	7	9%
<b>Total</b>	<b>363</b>	<b>71</b>	<b>20%</b>

## Methodology

Phase 1 tasks included:

- PA interviews;
- Lead vendor interviews; and
- Data analysis for initiative participants and non-participants, given a 30-day deadline to accept the initiative offer.

PA and lead vendor interviews provided insights into the initiative design and delivery. As the initiative had not been completed by the time of the Phase 1 evaluation (which will continue through October 2012 when the 90-day deadlines expire), The Evaluation Team will follow up with lead vendors and PAs during Phase 2 of the evaluation, gathering additional participation

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<sup>2</sup> These customers had participated in the audit but had not cleared the barrier. Since these customers already declined to clear their barrier once, it is to be expected that, even with the additional incentive, a lower number would accept the offer a second time compared to new participating customers.

information to further inform final recommendations. Table 4 presents objectives for each of the tasks conducted during the Phase 1 evaluation tasks.

**Table 4. Summary of Phase 1 Evaluation Tasks**

<b>Evaluation Task</b>	<b>Objectives</b>
Data Analysis	Determine barrier mitigation and measure install rate impacts.
Lead Vendor Interviews (n=4)	Provide initial insights into: program delivery; customer experiences; participation barriers; and data collection and reporting processes.
PA Interviews (n=8)	Provide initial insights into: program delivery; customer experiences; participation barriers; communications with program stakeholders; and data collection and reporting processes.
Customer Surveys (n=41)	Provided insights into participant satisfaction, decision-making factors, and impacts of additional incentives on customer's participation or non-participation in the program.

### Data Analysis

Using data drawn from the first two months of implementation, The Evaluation Team began analyzing the initiative's effect on participants' decisions regarding pre-weatherization repairs. The Evaluation Team also compared the National Grid and NSTAR initiative participant adoption rates with natural adoption rates from National Grid and NSTAR<sup>3</sup> historical data, seeking to determine the initiative's success.

### PA and Lead Vendor Interviews

As shown in Table 5, The Evaluation Team interviewed<sup>4</sup> all eight PAs and a representative from each of the four lead vendors, seeking to determine:

- Processes for designing, marketing, and implementing the initiative; and
- The initiative's administrative structure and organization.

**Table 5. Interviewed Lead Vendors and PAs**

<b>Lead Vendor</b>	<b>Program Administrator</b>
Conservation Services Group	National Grid and NSTAR
Center for Eco Technology	Berkshire Gas
Honeywell	Columbia Gas, New England Gas, and WMECO
Rise Engineering	Cape Light Compact
N/A	Unitil

<sup>3</sup> National Grid and NSTAR were the only PAs able to provide historical data for The Evaluation Team to consider during the Phase 1 evaluation. The remaining PAs will provide historical data for the Phase 2 evaluation.

<sup>4</sup> Appendix A and Appendix B provide PA and lead vendor interview guides.

Interviews addressed the following research topics:

- Roles and responsibilities of PA and lead vendor program managers;
- Initiative purpose and goals;
- Initiative design and package delivery;
- Customer interactions;
- Data collection and tracking methods; and
- Suggestions for improved program delivery.

### **Participant and Non-Participant Surveys**

The Evaluation Team surveyed<sup>5</sup> a sample of participants (those clearing the pre-weatherization barrier and eligible to receive additional incentives, though they may or may not have installed certain weatherization measures); and a sample of non-participants (those offered the initiative but not clearing the pre-weatherization barrier and, therefore, not eligible to receive extra incentives). Participant surveys did not occur until after initiative offers with 30-day deadlines expired.

The Evaluation Team focused the surveys on how the availability of additional initiative incentives impacted decisions to clear pre-weatherization barriers (participants) or not (non-participants) to move forward with additional weatherization measures. Table 6 shows breakdowns of customer participants and non-participants completing the Phase 1 survey. The Phase 2 surveys will consist of approximately 100 additional customer interviews throughout all PA service territories.

**Table 6. Survey Respondent by Type**

Type	Number of Survey Respondents	Percentage of Survey Respondents
Participants	17	41.5%
Non-Participants	24	58.5%
<b>Total</b>	<b>41</b>	<b>100%</b>

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<sup>5</sup> Appendix C provides participant and non-participant surveys.

## Findings

The Evaluation Team based the Phase 1 findings, presented below, on analysis of lead vendor and PA interviews, customer surveys, and data analysis. Results have been organized topically, presenting responses from PAs, lead vendors, and customers together. As appropriate, these findings include all perspectives, and are presented in the following sections:

- Design
- Delivery
- Participation
- Data Analysis
- Satisfaction

### Design

PAs and lead vendors designed the initiative with stakeholder involvement from the Energy Efficiency Advisory Council, the Department of Energy Resources, and the Green Justice Coalition.

The idea for the initiative arose from the hypothesis that customers did not move forward with certain weatherization measures following home energy assessments, particularly when facing pre-weatherization barriers. PAs and lead vendors developed the initiative to determine the extent that pre-weatherization barriers prevented customers from moving forward with the program (versus other common barriers, such as upfront costs).

All interviewed PAs and lead vendors described the initiative's overarching goal as increasing the number of customers moving forward with the program and installing recommended weatherization measures. The initiative did not set participation goals. Rather, PAs divided the \$300,000 program budget, providing each PA with a set funding amount to run the initiative, as shown in Table 7. The funding amount allocated to each PA is based on number of residential customers they serve.

**Table 7. PA Initiative Budget Allocations**

<b>PA</b>	<b>Pilot Budget</b>
National Grid - Electric MA	\$89,698.21
National Grid - Gas MA	\$65,556.13
NSTAR - Electric	\$65,252.15
Columbia Gas of Massachusetts	\$21,350.44
NSTAR - Gas	\$19,340.94
WMECO	\$15,001.53
Cape Light Compact	\$14,309.25
New England Gas	\$3,919.20
Berkshire Gas	\$2,509.63
Unitil - Electric MA	\$1,965.57
Unitil - Gas MA	\$1,096.94
<b>Total</b>	<b>\$300,000.00</b>

The following three initiative barriers required relatively small financial incentives to clear, and were most commonly found during home energy assessments, according to the National Grid and NSTAR initiative proposal:

1. Evidence of knob and tube wiring requiring an inspection (up to \$250).
2. General combustion safety requiring an inspection/repair (up to \$300).
3. Improper dryer venting requiring installations/repairs (up to \$250).<sup>6</sup>

The requirements for overcoming barriers depended on types of barriers identified. Clearing general combustion safety or improper dryer venting barriers required repairs or replacements; however, evidence of knob and tube wiring required additional steps, depending on whether the wires were live. If wiring was inactive, an electrician could sign off that no fire hazard was present, thus not preventing the installation of certain weatherization measures. If the wiring was live, it would need to be replaced prior to installing select weatherization measures.

The Massachusetts electricians we spoke with indicated that the average cost for inspecting knob and tube wiring ranges from \$75 to \$300, amounts that are covered by the initiative incentive. However, if knob and tube wiring is identified as live, the pre-weatherization incentive does not cover rewiring, which often proves too expensive for customers to complete, particularly in short timeframes. According to the electricians interviewed, average costs for rewiring a standard

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<sup>6</sup> Cape Light Compact did not include the repair of improper dryer venting as a pre-weatherization initiative measure, as this measure had already been addressed as part of the Home Energy Assessment.

1,500 square-foot home in Massachusetts ranges from \$5,000 to \$15,000. We expect very different rates of barrier-clearing depending on the status of the wiring.<sup>7</sup>

If an energy auditor found one of the three barriers at a home, they informed the customer of the barrier and explained why it prevented them from moving forward with select weatherization measures. The auditor then provided the customer with materials addressing the initiative and the additional pre-weatherization incentives.

Although customers could face multiple barriers, they could receive only one incentive. Once the customer chose to move forward, they submitted their paperwork and followed barrier-clearing processes set up by their PAs.

All of the PAs and lead vendors developed the initiative's overall structure; however, each PA could work with their lead vendor to craft the initiative's design and delivery to their service territories and preferences. Some design differences included deadlines for customers to participate in the initiative and delivery processes.

## **Delivery**

The PAs' lead vendors<sup>8</sup> implemented the initiative in the field, with delivery differing between PAs, as they worked with lead vendors to tailor the initiative to their service territories.

## **Participant Eligibility**

Current customers receiving a home energy assessment could qualify for the initiative if auditors identified pre-weatherization barriers. Most PAs said customers qualified even if more than one barrier was identified, although a customer could only receive an incentive for one barrier. The majority of lead vendors and PAs interviewed said they primarily offered the initiative to new assessment customers at the time of the audit. However, some PAs also had lead vendors conduct call backs to customers who had had barriers identified in a previous audit, and offered them the initiative if the barrier had not yet been cleared.

For this first phase:

- National Grid offered additional incentives to new audit customers only.
- NSTAR and Berkshire Gas offered additional incentives through mailings or call backs to both new audit customers and to customers who had an audit as early as November 2011.

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<sup>7</sup> Therefore, The Evaluation Team will include questions in the Phase 2 surveys to determine how many customers who had knob and tube wiring inspections were told their wiring was live (as this distinction was not available in the initiative database). With this additional information, The Evaluation Team can further delineate responses and actions relevant to whether or not homes have live wiring. In addition, The Evaluation Team will request any available tracking data indicating where live wiring is present.

<sup>8</sup> Unitil is an exception, as it does not use an outside lead vendor for implementation.

### **Program Requirements**

The initiative deadline varied as either 30 days or 90 days depending on the PA. General requirements to receive the additional incentives included:

1. Accepting the offer.
2. Hiring an appropriate expert (which could be an HVAC contractor or an electrician, depending on the barrier) or having an expert assigned to clear and sign off the barrier.
3. Mailing in paperwork to the vendor/PA if selecting own contractor, showing that barriers had been cleared and signed-off by contractor or electrician.

All PAs had these general requirements, while more detailed requirements varied by PA.

### **Forms**

Eligible customers received the following three main pieces of information at the time of assessment, specific to the initiative, although actual forms varied by PA:

1. A description of the initiative and initiative requirements;
2. The customer offer, which would be filled out by the customer and included customer information and barrier details; and
3. The contractor evaluation, which the contractor or electrician completed and signed to indicate that barriers had been cleared.

### **Delivery Mechanism**

Customers could utilize three delivery mechanisms to participate in the program:

1. Customers could request the lead vendor to assign a contractor to come to their house, clear the barrier, and submit paperwork on the customer's behalf.
2. Customers could find their own contractors or electricians to clear the barrier and sign off on the paperwork. The customer would then send in the offer form, evaluation form, and paid invoice to the lead vendor.
3. In some cases, a home performance contractor (HPC) helped guide this process, as well as guiding part of the turnkey services offered.

Depending on their service territory, customers could be offered one or two of the above options, as shown in

Table 8.

**Table 8. PA Delivery Mechanism Options**

PA	Turnkey	Customer Hires Own Contractor	HPCs
National Grid	√	√	
NSTAR	√	√	
Berkshire Gas		√	
New England Gas		√	
Columbia Gas		√	
WMECO		√	
Cape Light Compact		√	
Unitil		√	√

While incentive amounts remained consistent across PAs, the ways customers received incentives varied. If customers used a turnkey option, they paid a co-pay. If customers hired their own contractors or electricians, they had to pay the full costs and submit forms and invoices to lead vendors for reimbursement. In these cases, lead vendors usually mailed reimbursements to customers as soon as the paperwork could be processed.

### Data Collection

The majority of lead vendors reported collecting initiative data as part of the home energy assessment data. In the assessment data collection form or software, barriers had already been identified as part of the assessment, thus any assessment with one of the three barriers identified would automatically be listed as part of the initiative, provided that the assessment was completed within the initiative’s timeframe. Lead vendors also described using a Microsoft Excel® spreadsheet to track offers, particularly if using HPCs or turnkey services, where multiple individuals collected data. Data were submitted to the PAs upon completion of the initiative.

### Participation

PAs and lead vendors agreed that the program was too young to gauge initiative participation. Most said the uptake was lower than expected, with many offers made to customers but few completions. Several lead vendors said customers accepting offers were already motivated and “*would have done this with or without the financial incentive,*” although one lead vendor thought the incentive pushed customers to act sooner than they otherwise might have. All PAs and lead vendors reported that there were still a number of offers outstanding, and said it is too soon to speak definitively regarding the initiative’s impact.

Based on preliminary data from three PAs, 53 of the 262 customers who were offered the initiative accepted, and they are awaiting responses from 66 other customers. The remaining 143 either explicitly declined the incentive or allowed the initiative offer to expire.

Table 9 breaks down participation levels by barrier types and PAs.

**Table 9. Pre-Weatherization Initiative Participation**

Barrier	Count	Berkshire Gas*	National Grid	NSTAR	Total
Evidence of knob and tube wiring	<b>Offered</b>	<b>55</b>	<b>117</b>	<b>90</b>	<b>262</b>
	Accepted**	4	31	18	53
	Outstanding	25	14	27	66
General combustion safety	<b>Offered</b>	<b>19</b>	<b>31</b>	<b>22</b>	<b>72</b>
	Accepted	3	4	7	14
	Outstanding	9	4	4	17
Improper dryer venting	<b>Offered</b>	<b>7</b>	<b>12</b>	<b>13</b>	<b>32</b>
	Accepted	0	3	1	4
	Outstanding	2	4	3	9
Total	<b>Offered</b>	<b>77</b>	<b>160</b>	<b>125</b>	<b>362</b>
	Accepted	7	38	26	71
	Outstanding	33	22	34	89

\* The Berkshire Gas total does not sum due to some households having multiple barriers. The customers had the option to choose which barrier to accept.

\*\* Those accepting the incentive are defined as participants.

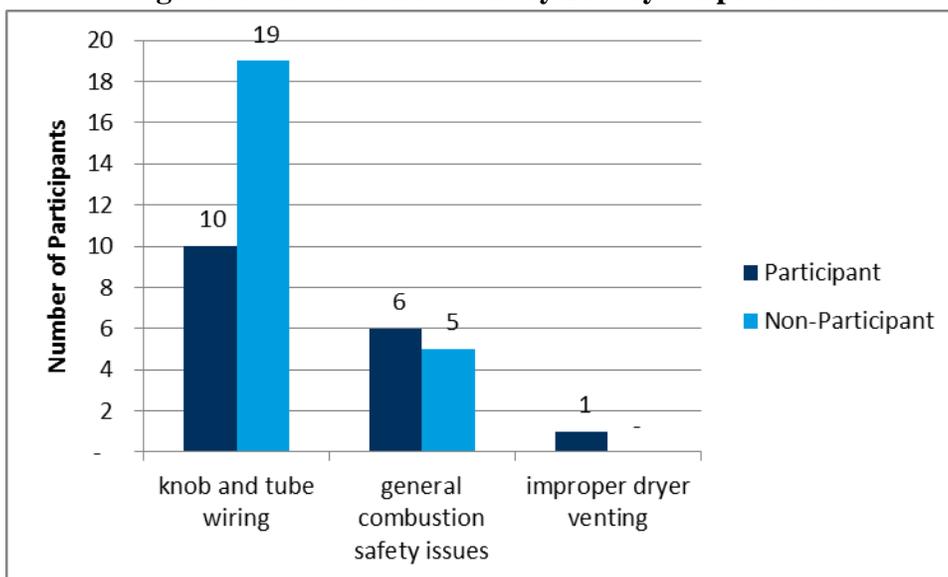
### Phase 1 Customer Survey Results

For Phase 1, The Evaluation Team used a pre-weatherization survey to obtain feedback from customers who were identified as having one or more of the barriers in their home during their home energy assessment, and were given a 30-day deadline to address those barriers and receive an incentive. This section summarizes the findings from that survey.

Forty-one homeowners responded to the survey. Of those respondents, 17 accepted the offer and 24 did not. Almost half of survey respondents (19 homeowners; 46%) were National Grid customers, 15 were NSTAR customers (37%), and seven were Berkshire Gas customers (17%).

As shown in Figure 1, of the three barriers eligible for the initiative incentive, the majority of survey respondents (29 homeowners; 71%) cited knob and tube wiring as their identified barrier, while only one homeowner cited improper dryer venting as a barrier (2%). All but two survey respondents (95%) indicated that their auditors had explained why the barriers had to be fixed, including that they pose possible fire hazards and carbon monoxide threats.

**Figure 1. Barriers Identified by Survey Respondents**

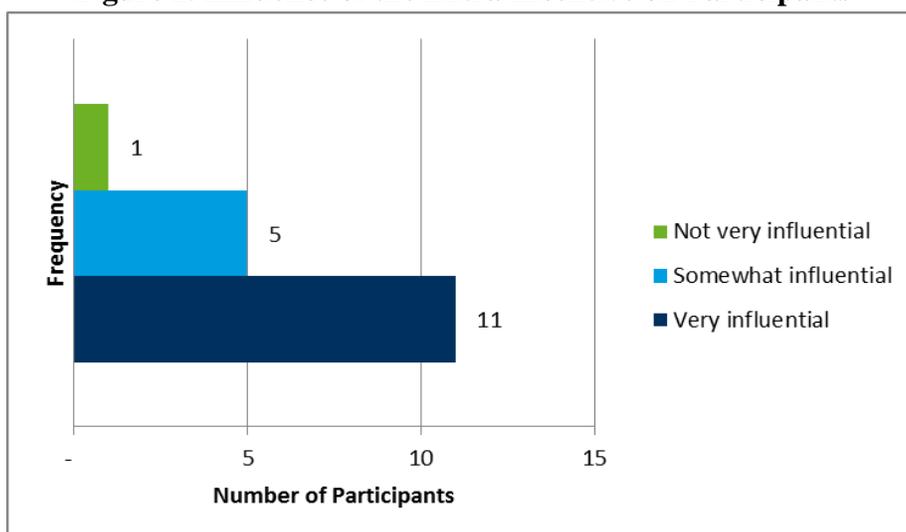


**Participants**

All 17 participants learned about the initiative incentives through their HES audits, and nine were informed of the steps required to clear the barrier through their auditors. The remaining participants were informed how to address the barriers by contractors. Nine participants said auditors told them how much the remedial work would cost, whereas eight participants learned of costs through a contractor quote.

As shown in Figure 2, almost all participants noted that the additional incentive influenced their decision to clear the barrier, with 11 homeowners (65%) citing the additional incentive as very influential and an additional five homeowners (29%) citing it as somewhat influential.

**Figure 2. Influence of the Extra Incentive on Participants**



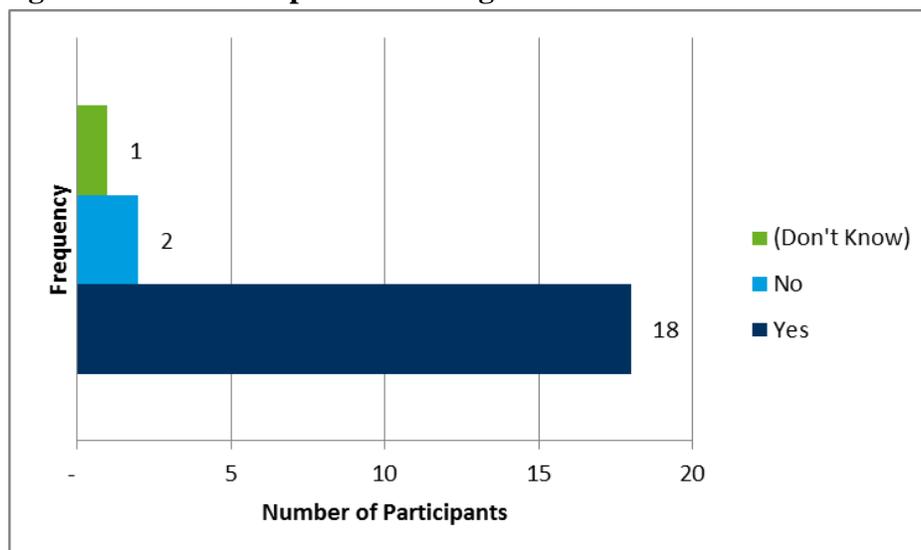
When participants were asked if they would have cleared the barrier in the future, had they not received the extra incentive, eight responded yes while nine responded no, don't know, or that it depends. Of customers saying yes, seven said they cleared the barrier earlier than they would have without the extra incentive. Three customers indicated they would have cleared the barrier for a \$150 incentive, which is less than the incentives offered through the initiative.

When asked whether they would have completed the same amount of work without receiving the additional incentive, seven participants said they would not have.

### **Non-Participants**

Of 24 non-participants, 20 recalled learning of the extra incentive to address barriers during their audit (83%). Twelve non-participants (50%) cited the barrier as the one reason they decided not to install certain recommended weatherization measures. Of 21 non-participants who answered the question, however, 18 (75%) still plan to address the barriers identified in the future, as shown in Figure 3.

**Figure 3. Non-Participants Planning to Address Barrier in the Future**



### **Participation Barriers**

Lead vendors and PAs identified two main barriers:

1. Both lead vendors and PAs noted that having an additional step, an inspection of the identified barrier, was a barrier to participation in the program. One PA noted that *“telling [customers] there’s another step, it decreases the chances of them actually moving forward.”*

Part of this additional step, in some cases, required customers to find contractors qualified to clear barriers. As one lead vendor said, although dryer venting should be a

simple problem to fix, finding an HVAC contractor to come out and clear the barrier proved to be a challenge, as no incentive exists for contractors.

2. Both PAs and lead vendors cited the overall costs of clearing barriers, particularly for knob and tube wiring, as the most common barrier found.

One lead vendor said that with old houses in New England, old wiring was unsurprising: *“One comment I have heard more than once is about the knob and tube barrier. The incentive covers the inspection to see if the wiring is live, but it doesn’t cover if the wiring needs to be removed, which is very expensive and it’s the barrier we most often come across.”*

Six non-participants (25%) indicated they did not participate in the special offer due to difficulties with the offer’s timing, and five (21%) indicated that costs prevented them from accepting the offer. Often the cost to clear the barrier is less than the maximum incentive amount, so it is not clear if these customers confused the cost to clear the barrier with the cost of rewiring the home, if knob and tube wiring was found to be live, or if they were referring to the cost of installing weatherization measures.<sup>9</sup>

### Free-ridership

Using the methodology described in this section, and based on 16<sup>10</sup> customer participant surveys, this initiative experienced 5% free-ridership. This finding is not entirely consistent with other indicators of free-ridership and will be further scrutinized as part of the Phase 2 analysis.

In calculating free-ridership (or the percentage of savings that would have occurred in the program’s absence), The Evaluation Team used a battery of self-report survey questions. Collectively, these questions estimated the initiative’s influence on participants’ decision-making processes.

Specifically, the survey addressed the following free-ridership questions:

- How influential was the additional incentive on the participant’s decision to move forward with installing the recommended measures?
- Would the participant have installed the recommended measures at some point in the future, even if they had not received the extra incentive?
- Did receiving the extra incentive influence the participant’s plans for the timing of installing the recommended measures?

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<sup>9</sup> The Evaluation Team will more fully explore this response during the Phase 2 surveys.

<sup>10</sup> Although 17 participants were surveyed, one customer could not complete the questions associated with the free-ridership battery, and was excluded from the calculation.

The Evaluation Team assessed free-ridership at three levels:

1. Each participant survey response was analyzed to determine whether or not it indicated free-ridership.
2. Once each participant's response had been analyzed, a free-ridership score was assigned to each unique set of participant response combinations.
3. Finally, all participants were aggregated into an average free-ridership score for the entire program offering.

Each survey questions' responses were evaluated to assess participants' free-ridership level per question, with survey response options converted into values of: yes (indicative of free-ridership); no (not indicative of free-ridership); or partial (partially indicative of free-ridership).

Table 10 lists free-ridership questions, the corresponding response options, and whether responses indicated free-ridership (shown in parentheses).

Table 11 shows unique response combinations, the free-ridership scores assigned to each combination, and the number of responses for each combination. The Evaluation Team then used the arithmetic mean of the 16 survey respondents' free-ridership scores to calculate an initiative free-ridership score of 5%.

**Table 10. Mapping of Response Options to Indication of Free-ridership**

How influential was the additional incentive of <PILOT INCENTIVE> dollars on your decision to address <BARRIER> in order to move forward with installing the recommended measures?	To confirm, do you agree that the additional incentive was an important factor in your decision to address <BARRIER>?	To confirm, do you agree that the additional incentive was not an important factor in your decision to address <BARRIER>?	Just to clarify, the additional incentive played no role in your decision to address <BARRIER>?	Would you clarify in your own words how important the incentive was in your decision to address <BARRIER>?	Do you think you would have addressed the <BARRIER> at some point even if you had not received the extra incentive?	You said you would have addressed the <BARRIER> at some point even without receiving the incentive. Did the extra incentive influence your plans on when to address the <BARRIER>?
Very influential (No)	Yes (No)	Yes (Yes)	Yes (Yes)	Responses analyzed individually (Yes)	Yes (Yes)	Around the same time (Yes)
Somewhat influential (Partial)	No (Yes)	No (No)	No (No)	Responses analyzed individually (Partial)	No (No)	Earlier than you would have (No)
Not very influential (Partial)	Don't know (Partial)	Don't know (Partial)	Don't know (Partial)	Responses analyzed individually (No)	Don't know (Partial)	Don't know (Partial)
Not at all influential (Yes)	Refused (Partial)	Refused (Partial)	Refused (Partial)		Refused (Partial)	Refused (Partial)
Don't Know (Partial)						
Refused (Partial)						

**Table 11. Pre-Weatherization Initiative Free-ridership Results**

How influential was the additional incentive of <PILOT INCENTIVE> dollars on your decision to address <BARRIER> in order to move forward with installing the recommended measures?	To confirm, do you agree that the additional incentive was an important factor in your decision to address <BARRIER>?	To confirm, do you agree that the additional incentive was not an important factor in your decision to address <BARRIER>?	Just to clarify, the additional incentive played no role in your decision to address <BARRIER>?	Would you clarify in your own words how important the incentive was in your decision to address <BARRIER>?	Do you think you would have addressed the <BARRIER> at some point even if you had not received the extra incentive?	You said you would have addressed the <BARRIER> at some point even without receiving the incentive. Did the extra incentive influence your plans on when to address the <BARRIER>?	FR Score	Number of Responses
Not very influential	x	Yes	x	x	Yes	Around the same time	75%	1
Somewhat influential	Yes	x	x	x	Don't know	x	12.5%	1
Very influential	Yes	x	x	x	No	x	0%	6
Somewhat influential	Yes	x	x	x	Yes	Earlier than would have	0%	3
Very influential	Yes	x	x	x	Yes	Earlier than would have	0%	3
Very influential	Yes	x	x	x	Don't know	x	0%	1
Somewhat influential	Yes	x	x	x	No	x	0%	1

The free-ridership results listed in Table 11 differ from the results of the data analysis, which can be attributed to several factors. First, the free-ridership results in the table are based on self-reports, which are often subject to socially desirable responses, and represent a small set of participant respondents (n=16). Second, given the 30-day timeframe to clear the barrier, it is possible that the sample for Phase 1 disproportionately represents customers who were motivated by the money, and moved quickly to take advantage of the offer. These customers would tend to report a lower free-ridership, given that the money had an impact on their decision. Third, free-ridership results in the table are based on all barriers addressed by participants, whereas the following Data Analysis section addresses only the barrier of knob and tube wiring.

## Data Analysis

Conservation Services Group (CSG) provided The Evaluation Team with initiative data and historical HES Program data for NSTAR and National Grid.<sup>11</sup> These data contained the same fields, including:

- Customer information
- Home characteristics
- Relevant pre-weatherization barriers (if applicable)
- Status of barriers (open issue or cleared)
- Proposed measures
- Installed measures

The initiative data contained additional details regarding the pre-weatherization incentive, including:

- Offer date
- Acceptance date (if the initiative offer was accepted)
- Offer type (call back from previous audit, during the original audit, etc., if applicable)
- Barrier type for which the incentive was offered
- Incentive amount

The historical data did not track the details required to determine eligibility for some barriers. Table 12 lists how historical data tracked each barrier type. Only knob and tube wiring barriers did not exhibit substantive tracking differences between the initiative and historical data.

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<sup>11</sup> Only National Grid and NSTAR could provide historical data for Phase 1 of the evaluation. The remaining PAs will submit historical data for Phase 2.

**Table 12. Barriers Tracked Historically**

Barrier	Historical Tracking is Relevant to Initiative	Issue
Evidence of knob and tube wiring	Yes	N/A
General combustion safety	No	Historical data flagged all combustion issues, but only certain issues are eligible for the initiative.
Improper dryer venting	No	Historical data flagged all moisture control issues, but dryer vent related issues were not tracked distinctly.

Due to differences in data tracking, The Evaluation Team could only directly compare barrier mitigation rates during the initiative with the historical rates. Table 13 shows the tracking data we examined.

**Table 13. Tracking Data and Population Size**

Dataset	Audit and Install Dates	Total Sample	Knob and Tube Sample
Initiative Data	May 2012 to July 2012	287	182
Historical Data	July 2011 to December 2011	27,786	1,944

To quantify the initiative effects, The Evaluation Team compared the percent of customers overcoming barriers without incentives (historical) to those offered the incentive (initiative). For the Phase 1 evaluation, 45% of customers cleared the barrier. Historically, 47% of customers who were not offered the incentive cleared the barrier.

In comparing the numbers, it first appears that the program did not create a significant increase in clearing the barriers. However, the initiative data’s timeframe in which to flag a cleared barrier was limited to only a few months, while historical data could have been flagged for up to 10 months.<sup>12</sup>

Additional findings include:

- Eighty-four percent of initiative participants cleared the barrier since initially accepting the initiative incentive offer. This number may increase as time allows for more completions and project tracking.
- Twenty-five percent of those who were offered the initiative but did not accept it still fixed barriers without additional incentives. Survey respondents indicated reasons for this, which included time constraints during the initiative period and cost challenges.
- Too few homes installed insulation after clearing the barrier to indicate significant comparisons. The Evaluation Team assumed this resulted from the short time period that had passed between participants clearing the barrier and our evaluation.

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<sup>12</sup> Unfortunately, the barrier fix flag was not tracked with a date indicating when the fix occurred, so a similar timeframe analysis could not be conducted.

Table 14 shows historical data comparison findings.

**Table 14. Comparison of Initiative Tracking with Historical Data**

Data Source	Offer Status	N	Fixed Barrier	Percent Fixed Barrier	Installed Insulation	Percent Installed Insulation
Initiative Data	Accepted	45	38	84%	3	7%
	Declined	98	27	28%	1	1%
	<b>Total</b>	<b>143</b>	<b>65</b>	<b>45%</b>	<b>4</b>	<b>3%</b>
Historical Data	No offer	1,944	908	47%	113	6%

Preliminary data does not show an increased customer rate of barrier-clearing due to the initiative when compared to historical data; however, this could change once more time has passed.

One concern is that overcoming the barrier does not create savings. Homeowners must continue with the HES Program and install the recommended measures. Currently, data have shown very low measure adoption rates after fixing barriers. Higher adoption rates might occur as more time passes, and The Evaluation Team will collect follow-up data on these homes.

## Satisfaction

The Evaluation Team asked PAs and lead vendors to elaborate on elements that are working well (or otherwise) regarding initiative implementation and results.

### Satisfying Design Elements

PAs agreed that offering the initiative during the HES proved to be a positive design aspect, as it allowed auditors to explain the initiative to customers and answer questions. Other cited benefits included:

- Ease of participation: the simple design, easy paperwork, and limited barrier offers made participation easy, and may have encouraged customers to act sooner than they otherwise would have.
- The time of year chosen: the initiative was implemented in the slower season for the HES Program, giving PAs, vendors, and contractors more time to address questions and discuss issues with customers.
- Offer flexibility: the flexibility to allow a turnkey option proved advantageous, as customers did not need to pay full upfront costs; however, some opposing opinions arose regarding the turnkey option (discussed below).

### Unsatisfying Design Elements

PAs and lead vendors agreed that the rush to design and implement the initiative created obstacles.

Both PAs and lead vendors cited that providing the turnkey option to customers was one of the greatest initiative obstacles. Although the turnkey option offers positive aspects (as noted above), PAs and lead vendors said that it was a struggle to recruit contractors to help clear the barriers.

Several lead vendors thought that due to low participation, flaws in the implementation or design may have yet to be recognized. Lead vendors cited implementation as less successful than hoped, and one lead vendor staff member reported: *“Perhaps the program just doesn’t meet the need.”*

However, those surveyed also indicated that it is too early in the process to determine definitively the success of the initiative, given that it is ongoing and had been offered during summer months when participation tends to slow.

### Improvement

Although PAs and lead vendors found the initiative to be too young to determine definitive improvements, their suggestions based on initial impressions included:

- *“Provide the customers with more time to complete the work; 30 days is not enough.”*
- *“Use consistent forms across all PAs.”*
- *“Consider targeting to certain fuels, as customer gas bills are not as high as oil bills.”*
- *“Have customers locate their own contractors.”*

Whether to offer turnkey services if the initiative is continued proved to be the most common topic cited by both PAs and lead vendors currently offering these services and PAs and lead vendors not currently offering turnkey services but considering it. One PA thought that providing a contractor for a customer would help them move forward in clearing barriers, but other PAs and lead vendors who are currently offering a turnkey option faced challenges with recruiting contractors to participate.

Given these challenges, one lead vendor recommended that customers should locate their own contractors or electricians, as such contractors may see more business potential from customers than from being assigned a finite task by a vendor. The lead vendor said: *“Contractors may be more willing [to accept the work when contacted by the customer], so the end result would be better for responding to individual customers.”*

Some concluding comments from PAs and lead vendors regarding the initiative included:

- *“We tried to do one-stop shopping and now it’s getting a lot of layers of complication by needing to bring in different specialists. We’re happy we committed to do this pilot, it’s just the results are not what we wanted.”*
- *“In theory, the intention [of the initiative] is well being [sic], but in practice it is much more complicated and much more expensive.”*
- *“Have to prove the need for it first, many are still unconvinced that the amount being offered removes the barrier: that cost will only cover inspections, not fix the actual barrier.”*
- *“The best step up would be to completely cover knob and tube replacement throughout the house, but PAs can’t afford that so the program serves its purpose as is.”*

## Conclusions

The Evaluation Team assessed initiative perspectives, assumptions, and processes to determine whether the initiative remains on track to meet its goal of encouraging customers to move forward with weatherization measures by offering additional incentives to remove pre-weatherization barriers.

Tentative conclusions, based on Phase 1 findings, include the following:

- **Conclusion 1: Timeframe.** Feedback from interviewed PAs and lead vendors indicated that the 30-day timeframe may be too short. Twenty-five percent of non-participants cited timing as the reason they chose not to participate in the initiative. When asked what other services would have helped non-participants clear barriers, several cited extended timeframes. Twenty-five percent of customers who declined to participate in the initiative still cleared their barrier(s) over time, and most non-participants reported that they plan to address their barrier(s) at a later date.<sup>13</sup> Therefore, despite the short timeframe, incentive amounts still encouraged customers to clear barriers, and it can be reasonably expected that the overall barrier fix-rate will be higher than that shown in the data reflecting only 30 days from the initiative launch.
- **Conclusion 2: Incentive amounts.** Incentive amounts may be appropriate for clearing barriers from improper dryer venting, combustion safety issues, and identifying whether knob and tube wiring in a home is live. However, the initiative incentives are not enough to cover the cost of rewiring a home if needed. Live knob and tube wiring would need to be replaced prior to installing certain weatherization measures, and can cost between \$5,000 and \$15,000.
- **Conclusion 3: Turnkey options.** During PA and lead vendor interviews, issues arose about whether a turnkey option made sense. This was discussed by PAs and lead vendors who currently offer turnkey services and by those PAs and lead vendors who may consider offering turnkey services if the initiative is continued. To determine the turnkey option's success, The Evaluation Team will include questions in Phase 2 surveys to determine acceptance and completion rates of customers utilizing turnkey services, compared to those finding their own contractors. This effort will help The Evaluation Team determine whether turnkey services offer value to customers, and therefore remain worth their effort on the part of PAs and lead vendors.

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<sup>13</sup> The 5% free-ridership results differ from the results of the survey data analysis, which can be attributed to several factors. First, the free-ridership results are based on self-reports from a small set of participant respondents (n=16). Second, it is possible that the sample for Phase 1 disproportionately represented customers who were motivated by the money. These customers would tend to report a lower free-ridership given that the money had an impact on their decision. Third, free-ridership results are based on all barriers addressed by participants, whereas the data analysis section addresses only the barrier of knob and tube wiring.

## Appendix A

### PA Interview Guide

**Massachusetts Residential Retrofit and Low-Income Evaluation**  
**HES Pre-Weatherization Pilot**  
**Program Administrator Interview Guide**

Name	
PA	
Date of Interview	

#### Introduction

The purpose of this interview is to understand your perspective of the Home Energy Services Pre-Weatherization pilot. We are specifically interested in your opinions regarding how the pilot influenced customer decision-making, the strengths and weaknesses of the pilot, and the viability of including a Pre-Weatherization option as part of HES in the future.

All of the information we gather will be reported anonymously. If at any time during this interview you think of someone else we should speak with for our research, please let me know. We are interested in getting diverse and representative perspectives of the pilot.

#### Roles and Responsibilities

1. To begin, could you please describe your role in implementing the Pre-Weatherization Pilot?
2. What were some of your specific responsibilities for getting the Pre-Weatherization Pilot launched?
3. Did **[VENDOR]** implement the Pre-Weatherization Pilot?
  - a. Were any other vendors or program administration stakeholders involved in designing or implementing the pilot?

## Program Status

1. Can you please provide background information about the decision to implement the pilot? [**PROBE for the following:**]
  - a. What was the motivation for the pilot?
  - b. What stakeholders were involved in the decision to implement the pilot?
  - c. How was the pilot designed?
  - d. What were the overarching goals of the pilot?
  - e. Did the pilot have specific savings or units goals?
  - f. Did anything about the design change during the time the pilot was offered?
    - i. If so, what changed and why?

## Program Design and Delivery

1. Could you describe in high-level detail how the HES Pre-Weatherization Pilot worked? [**Probe for the following if necessary:**]
  - a. What barriers made customers eligible for the pre-weatherization incentive?
  - b. How was the pilot presented to customers?
  - c. When in the audit process was the pilot presented to customers?
  - d. Was additional paperwork required from pilot participants?
2. Was the pilot offered to all Weatherization customers?
  - a. If not, how were participants selected for the pilot?
3. What were the timing requirements?
  - a. Did the customer have to “act” within a certain number of days to qualify for the additional incentive?
  - b. What specifically did the customer have to get done in that timeframe?
4. What made a customer who was offered the additional incentive, actually qualify?
  - a. Did they only need to clear the barrier, or did they need to installed additional measures as well?
    - i. How many additional barriers? All those recommended? Or just a subset?
  - b. When did the customer receive the additional incentive for clearing the barrier?
5. From your perspective, how have customers responded to the Pre-Weatherization offer?

- a. Have there been any recurring responses to the offer?
  - b. Have there been any common problems or complaints?
  - c. For customers who do not accept the offer, what are some of the reasons given?
6. What worked particularly well about the pilot design and implementation process?
  7. Have you faced any barriers or obstacles in designing and implementing the pilot?
  8. How could the pilot offerings or delivery be improved?

### **Data Tracking**

1. Were the data for the Pre-Weatherization Pilot
  - a. collected in the same manner as for a typical HES participant?
2. How do the PAs receive the data collected on site? (Examples: entered into computer software [**SPECIFY SOFTWARE**]; entered into a Website; entered onto a spreadsheet.)

### **Next Steps**

1. From your perspective, are there any barriers to including the Pre-Weatherization option as part of the HES program in the future?

### **Other**

1. Do you have any other comments or areas we did not cover that you have feedback about?
2. Throughout the interview process, have you thought of anyone else we should interview?

Thank you for your time today. If you think of anything else you would like to discuss, please do not hesitate to call or e-mail me.

## Appendix B

### Vendor Interview Guide

**Massachusetts Residential Retrofit and Low-Income Evaluation**  
**HES Pre-Weatherization Pilot**  
**Vendor Interview Guide**

<b>Name</b>	
<b>Vendor</b>	
<b>Date of Interview</b>	

#### **Introduction**

The purpose of this interview is to understand your perspective of the Home Energy Services Pre-Weatherization pilot. We are specifically interested in your opinions regarding the implementation of the pilot.

All of the information we gather will be reported anonymously. If at any time during this interview you think of someone else we should speak with for our research, please let me know. We are interested in getting diverse and representative perspectives of the pilot.

#### **Roles and Responsibilities**

1. To begin, could you please describe your role in implementing the Pre-Weatherization pilot?
  - a. What were some of your specific responsibilities?
2. Were any other vendors or stakeholders involved in implementing the pilot?

#### **Program Design and Delivery**

1. Could you describe in high-level detail how the HES Pre-Weatherization pilot was implemented?
  - a. What barriers made customers eligible for the pre-weatherization incentive?
  - b. How was the pilot presented to customers?
  - c. When in the audit process was the pilot presented to customers?
  - d. Was additional paperwork required from pilot participants?
2. What were the timing requirements?
  - a. Did the customer have to “act” within a certain number of days to qualify for the additional incentive?
  - b. What specifically did the customer have to get done in that timeframe?

3. What made a customer who was offered the additional incentive, actually qualify?
  - a. Did they only need to clear the barrier, or did they need to install additional measures as well?
    - i. How many additional barriers? All those recommended? Or just a subset?
  - b. When did the customer receive the additional incentive for clearing the barrier?
4. How did you decide which participants to offer the Pre-Weatherization pilot to?
  - a. Were all weatherization customers offered the pilot?
  - b. Did you offer the incentive to both new audit customers as well as those who had audits in the past, but had barriers?
5. Was there any additional training an auditor was required to go through to be able to offer the Pre-Weatherization pilot to customers?
  - a. If so, what type of additional training?
  - b. Who is the training provided by (e.g., Lead vendors, PAs)?
6. From your perspective, how have customers responded to the Pre-Weatherization pilot offer?
  - a. Have there been any recurring responses to the offer?
  - b. Have there been any common problems or complaints?
  - c. For customers who do not accept the offer, what are some of the reasons given?
7. What has worked particularly well about the implementation process?
8. Have you faced any obstacles or bottlenecks during the implementation process?
9. How could the pilot offerings or delivery be improved?

### **Data Tracking**

1. What methods were used for collecting pilot data on site?
  - a. Is it in the same manner as for a typical HES participant?
2. What happens to that data collected on site? (Examples: entered into computer software [SPECIFY SOFTWARE]; entered into a Website; entered onto a spreadsheet.)

### **Next Steps**

1. From your perspective, are there any barriers to including the Pre-Weatherization option as part of the HES program in the future?

### **Other**

1. Do you have any other comments or areas we did not cover that you have feedback about?

Thank you for your time today. If you think of anything else you would like to discuss, please do not hesitate to call or e-mail me.

## Appendix C

### Participant and Non-Participant Surveys

#### 2012 Pre-Weatherization Pilot Participant Questionnaire

##### Greeting

May I speak with **<CONTACT NAME>**? **(IF NO:)** Is there someone else available who is familiar with the home energy assessment that took place at **<ADDRESS>**? **(Obtain correct person and continue.)**

##### Introduction

Hello, my name is **<NAME>** and I am calling from **OPINION DYNAMICS CORPORATION** on behalf of **<PA NAME>** about the home energy assessment they recently conducted through their energy audit and weatherization program. We are calling to get your feedback on that program.

In this survey we will refer to the program as the “Home Energy Services Program, or HES Program.”

**(IF NEEDED: The program is also known as: Mass Save, Residential Conservation Services Program, Gas Weatherization, Home Energy Services Program, and/or Home Energy Assessment).**

**(IF NEEDED: The survey should take around five minutes).**

Your responses will be kept strictly confidential. To start, I have a few questions to determine if you qualify for the study.

##### Screeners

Do you recall having someone come to your home at **<ADDRESS>** **(DO NOT READ IF <AUDIT\_DATE>=0)** around **<AUDIT\_DATE>** and provide you with information about ways to save energy, and possibly they installed some energy saving products such as light bulbs, low-flow showerheads, or faucet aerators **(pronounced AIR-RATE-ORS)**? This is also known as a no cost audit or home energy assessment, and it would have been provided by **<PA NAME>**.

Yes

No

8. (DON'T KNOW)

9. (REFUSED)

[IF A1 <> 1, THANK AND TERMINATE]

## Pre-Weatherization Barrier Details

Our records show that your HES audit discovered <BARRIER> which needed to be addressed before you could install certain weatherization measures, is this correct?

1. Yes [SKIP TO 0]

No, I did not have barriers preventing me from installing the recommended measures

8. (DO NOT READ) (DON'T KNOW)

9. (DO NOT READ) (REFUSED)

1. [ASK IF B1 = 2, -98, OR -99]

To confirm, did you face barriers such as...

(READ LIST; SELECT ALL THAT APPLY)

1. Knob and tube wiring – This can be a fire hazard and can prevent the addition of insulation wherever there are live wires.

2. General combustion safety – This is where particulates and/or carbon monoxide are present, preventing air sealing and insulation from being installed.

3. Improper dryer venting – This can be a fire hazard and can prevent air sealing and insulation from being installed.

00. Other (DO NOT READ, Specify: \_\_\_\_\_)

96. (DO NOT READ) (No barriers) (THANK AND TERMINATE)

98. (DO NOT READ) (DON'T KNOW) (THANK AND TERMINATE)

99. (DO NOT READ) (REFUSED) (THANK AND TERMINATE)

[CREATE A VERIFIED BARRIER, IF RESPONDENT SELECTS MORE THAN ONE IN B2 READ IN "BARRIERS"]

Did your auditor explain why the <BARRIER> needed to be fixed in order to install certain weatherization measures?

1. Yes

Yes, but I already knew

No, but I already knew [SKIP TO B6]

No, I don't know why [SKIP TO B6]

8. (DO NOT READ) (DON'T KNOW) [SKIP TO B6]

9. (DO NOT READ) (REFUSED) [SKIP TO B6]

What reason(s) did your auditor give? (Record response: \_\_\_\_\_)

98. (DO NOT READ) (DON'T KNOW) [SKIP TO B6]

99. (DO NOT READ) (REFUSED) [SKIP TO B60]

How helpful was the information provided by the auditor?

1. Very helpful
- Somewhat helpful
- Not very helpful
- Not at all helpful
8. **(DO NOT READ)** (DON'T KNOW)
9. **(DO NOT READ)** (REFUSED)

2. **[ASK IF <PILOT INCENTIVE > > 0]**

To specifically encourage you to address the **<BARRIER>**, our records show you were offered an additional **<PILOT INCENTIVE>** dollars as part of a special program offer. This incentive was in addition to the standard incentives for the energy-efficient measures recommended based on your audit. Do you recall being offered this additional incentive?

1. Yes **[SKIP TO B8]**
- No, I do not recall being offered an additional incentive **[SKIP TO 0]**
- No, I was offered an different amount **[SKIP B6a]**
8. **(DO NOT READ)** (DON'T KNOW) **[SKIP TO 0]**
9. **(DO NOT READ)** (REFUSED) **[SKIP TO 0]**

B6a. What was the incentive amount you were offered? **(Record response: \_\_\_\_\_)**

98. **(DO NOT READ)** (DON'T KNOW) **[SKIP TO B8]**
99. **(DO NOT READ)** (REFUSED) **[SKIP TO B8]**

2. **[ASK IF <PILOT INCENTIVE > = 0]**

To specifically encourage you to address the **<BARRIER>**, our records show you were offered an additional incentive as part of a special program offer. This incentive was in addition to the standard incentives for the energy-efficient measures recommended based on your audit. Do you recall being offered this additional incentive?

1. Yes
2. No, **[SKIP TO 0]**  
**(DO NOT READ)** (DON'T KNOW) **[SKIP TO 0]**  
**(DO NOT READ)** (REFUSED) **[SKIP TO 0]**

**[ASK IF B7 = 1]**

B7a. How much were you offered to address the **<BARRIER>**?

3. **[OPEN END]**
4. 98. (Don't know)
5. 99. (Refused)
- 6.

How did you find out about this extra incentive? Were you...

**(READ LIST)**

- 7. Informed during your HES audit
- Called back sometime after the audit
- 00. Other **(DO NOT READ, Specify: \_\_\_\_\_)**
- (DO NOT READ) DON'T KNOW**
- (DO NOT READ) REFUSED**

How did you find out how much the remedial work was going to cost? **(SELECT ALL THAT APPLY)**

- 1. I had already received a quote
- I was told by the auditor
- I received a quote from a contractor
- 00. Other **(DO NOT READ, Specify: \_\_\_\_\_)**
- 98. (DO NOT READ) Don't know**
- 99. (DO NOT READ) REFUSED**

How did you find out the steps needed to fix the problem? **(SELECT ALL THAT APPLY)**

- 1. I had already looked into this before the audit
- The auditor told me what was required
- The contractor told me what was required
- Other **(DO NOT READ, Specify: \_\_\_\_\_)**
- (DO NOT READ) DON'T KNOW**
- (DO NOT READ) REFUSED**

## Decision Process

2.

How influential was the additional incentive of **<PILOT INCENTIVE>** dollars on your decision to address **<BARRIER>** necessary to move forward with installing certain weatherization measures?

- 1. Very influential
- Somewhat influential
- Not very influential **[SKIP TO 0]**
- Not at all influential **[SKIP TO 0]**
- (DO NOT READ) DON'T KNOW**
- (DO NOT READ) REFUSED**

**[ASK IF C1 = 1 OR 2]**

To confirm, do you agree that the additional incentive was an important factor in your decision to address **<BARRIER>**?

1. Yes **[SKIP TO C6]**

No **[SKIP TO 0]**

**(DO NOT READ)** DON'T KNOW **[SKIP TO 0]**

**(DO NOT READ)** REFUSED **[SKIP TO 0]**

**[ASK IF C1 = 3, OR 0 =2]**

To confirm, do you agree that the additional incentive was **not** an important factor in your decision to address **<BARRIER>**?

1. Yes **[SKIP TO C6]**

No **[SKIP TO 0]**

**(DO NOT READ)** DON'T KNOW **[SKIP TO 0]**

**(DO NOT READ)** REFUSED **[SKIP TO 0]**

**[ASK IF C1 = 4]**

Just to clarify, the additional incentive played **no** role in your decision to address **<BARRIER>**?

1. Yes **[SKIP TO C6]**

No

**(DO NOT READ)** DON'T KNOW

**(DO NOT READ)** REFUSED

**[ASK IF 0, 0, OR 0 = 2]**

Would clarify in your own words how important the incentive was in your decision to address **<BARRIER>**? **(Record response:\_\_\_\_\_)**

**(DO NOT READ)** DON'T KNOW

**(DO NOT READ)** REFUSED

Do you think you **would** have addressed the **<BARRIER>** at some point even if you had not received the extra incentive?

1. Yes

2. No **[SKIP TO SECTION D]**

Depends **(DO NOT READ, Specify what it would depend on:\_\_\_\_\_)**

**(DO NOT READ)** DON'T KNOW

**(DO NOT READ)** REFUSED

[ASK IF 0 = 1]

You said you would have addressed the <BARRIER> at some point even without receiving the incentive. Did the extra incentive influence your plans on **when** to address the <BARRIER>? Did you address the <BARRIER>...

(READ LIST)

1. Earlier than you would have

Around the same time

(DO NOT READ) DON'T KNOW

(DO NOT READ) REFUSED

How much influence did the information that you received from the auditor have on your decision to address the <BARRIER>? Was the information...

1. Very influential

2. Somewhat influential

3. Not very influential

4. Not at all influential

(DO NOT READ) DON'T KNOW

(DO NOT READ) REFUSED

## Call Back Influence

[ASK SECTION D IF B8= 2]

Prior to receiving the call back informing you about the extra incentive, had you already taken steps to address the <BARRIER> found during your audit?

1. Yes [SKIP TO 0]

No

(DO NOT READ) DON'T KNOW

(DO NOT READ) REFUSED

[ASK IF D1 ≠ 1]

Why did you decide to address the <BARRIER> after receiving the call back?

(DO NOT READ, Select all that apply)

1. The call back reminded me to do it

The extra incentive

Timing was better

Other (Specify: \_\_\_\_\_)

(DO NOT READ) DON'T KNOW

(DO NOT READ) REFUSED

**[ASK IF D1 ≠ 1]**

If you had received **just** a call to remind you about the **<BARRIER>** and the recommended measure(s) you were eligible for, but **without** any additional incentive offer, how likely would you have been to address the **<BARRIER>** and move forward with installing the recommended measure(s)? Would you have been...

**(READ LIST)**

1. Very likely
- Somewhat likely
- Not very likely
- Not at all likely
- (DO NOT READ) DON'T KNOW**
- (DO NOT READ) REFUSED**

**[SKIP TO 0]**

## Willingness-to-Pay

**[ASK IF 0 ≠ 1, OR 0 = 98 or -99, OR 0 ≠ 1]**

Our records show that you have received or are expecting to receive **<TOTAL INCENTIVE>** dollars for the work you did through the HES Program. Would you have done the same amount of work if you were paid **<TOTAL INCENTIVE – PILOT INCENTIVE>?**

1. Yes **[SKIP TO 0]**
- No **[SKIP TO F1]**  
**(DO NOT READ) DON'T KNOW [SKIP TO F1]**  
**(DO NOT READ) REFUSED [SKIP TO F1]**

If the incentive offer was approximately \$150, would you have addressed the **<BARRIER>?**

1. Yes
- No **[SKIP TO 0]**  
**(DO NOT READ) DON'T KNOW**  
**(DO NOT READ) REFUSED**

**[ASK IF E2=1]**

If the incentive offer was approximately \$50, would you have addressed the **<BARRIER>?**

1. Yes
- No  
**(DO NOT READ) DON'T KNOW**  
**(DO NOT READ) REFUSED**

## Conclusion

Do you have any other comments or suggestions you would like to share regarding the program at this time?

1. Yes (**Record Response:** \_\_\_\_)

No

**(DO NOT READ)** DON'T KNOW

**(DO NOT READ)** REFUSED

**[SCREEN BREAK]**

**FINISH.** Thank you very much for your time and cooperation. Have a good day.

## 2012 Pre-Weatherization Pilot Non-Participant Questionnaire

### Greeting

May I speak with **<CONTACT NAME>**? **(IF NO:)** Is there someone else available who is familiar with the home energy assessment that took place at **<ADDRESS>**? **(Obtain correct person and continue.)**

### Introduction

Hello, my name is **<NAME>** and I am calling from **OPINION DYNAMICS CORPORATION** on behalf of **<PA NAME>** about the home energy assessment they recently conducted through their energy audit and weatherization program. We are calling to get your feedback on that program.

In this survey we will refer to the program as the “Home Energy Services Program, or HES Program.”

2. **(IF NEEDED: The program is also known as: Mass Save, Residential Conservation Services Program, Gas Weatherization, Home Energy Services Program, and/or Home Energy Assessment).**  
**(IF NEEDED: The survey should take around five minutes).**

Your responses will be kept strictly confidential. To start, I have a few questions to determine if you qualify for the study.

### Screeners

Do you recall having someone come to your home at **<ADDRESS>** **(DO NOT READ IF <AUDIT\_DATE>=0)** around **<AUDIT\_DATE>** and provide you with information about ways to save energy, and possibly they installed some energy saving products such as light bulbs, low-flow showerheads, or faucet aerators **(pronounced AIR-RATE-ORS)**? This is also known as a no cost audit or home energy assessment, and it would have been provided by **<PA NAME>**.

Yes

No

8. (DON'T KNOW)

9. (REFUSED)

3. **[IF A1 <> 1, THANK AND TERMINATE]**

## Pre-Weatherization Barrier Details

Our records show that your HES audit discovered **<BARRIER>** which needed to be addressed before you could install certain weatherization measures, is this correct?

4. Yes **[SKIP TO 0]**

No, I did not have barriers preventing me from installing the recommended measures

**8. (DO NOT READ) (DON'T KNOW)**

**9. (DO NOT READ) (REFUSED)**

5. **[ASK IF B1=2, -98, OR -99]**

To confirm, did you face barriers such as...

**(READ LIST; SELECT ALL THAT APPLY)**

6. Knob and tube wiring – This can be a fire hazard and can prevent the addition of insulation wherever there are live wires.

7. General combustion safety – This is where particulates and/or carbon monoxide are present, preventing air sealing and insulation from being installed.

Improper dryer venting – This can be a fire hazard and can prevent air sealing and insulation from being installed.

00. Other **(DO NOT READ, Specify: \_\_\_\_\_)**

96. (DO NOT READ) (No barriers) **(THANK AND TERMINATE)**

**98. (DO NOT READ) (DON'T KNOW) (THANK AND TERMINATE)**

**99. (DO NOT READ) (REFUSED) (THANK AND TERMINATE)**

Did your auditor explain why the **<BARRIER>** needed to be fixed in order to install these weatherization measures?

1. Yes

2. Yes, but I already knew

No, but I already knew **[SKIP TO 0]**

No, I don't know why **[SKIP TO 0]**

**8. (DO NOT READ) (DON'T KNOW) [SKIP TO 0]**

**9. (DO NOT READ) (REFUSED) [SKIP TO 0]**

What reason(s) did your auditor give? **(Record response: \_\_\_\_\_)**

**98. (DO NOT READ) (DON'T KNOW) [SKIP TO 0]**

**99. (DO NOT READ) (REFUSED) [SKIP TO 0]**

How helpful was the information provided by the auditor?

3. Very helpful

Somewhat helpful

Not very helpful

Not at all helpful

**8. (DO NOT READ) (DON'T KNOW)**

**9. (DO NOT READ) (REFUSED)**

According to our records, you were offered an additional incentive as part of a pilot program to encourage you to address the **<BARRIER>**. Do you recall being offered an additional incentive?

- 4. Yes
- 5. No **(THANK AND TERMINATE)**
- 8. **(DO NOT READ)** (DON'T KNOW) **(THANK AND TERMINATE)**
- 9. **(DO NOT READ)** (REFUSED) **(THANK AND TERMINATE)**

According to our records, you decided not to address the **<BARRIER>** immediately following your audit. Is this correct?

- 6. Yes
- No **[SKIP TO 0]**
- 8. **(DO NOT READ)** (DON'T KNOW)
- 9. **(DO NOT READ)** (REFUSED)

B7A. Do you have any plans to address the barrier in the future?

- 1. Yes
- 2. No
- 8. **(DO NOT READ)** (DON'T KNOW)
- 9. **(DO NOT READ)** (REFUSED)

7. **[ASK IF 2A = 1]**

As the extra incentive is a limited time offer, if you are still interested in participating, I can have a representative from your PA contact you to discuss the options. Would this number be the best for them to use to reach you? Or would you prefer the call a different number?

- (Record Response: \_\_\_\_\_)**
- 98. **(DO NOT READ)** (DON'T KNOW)
- 99. **(DO NOT READ)** (REFUSED)

8. **[ASK IF B7 = 2]**

To clarify, did you address the **<BARRIER>** following your audit and receive the extra incentive?

- 9. Yes **(ASK B9a THEN Switch to Participant Survey AT B8)**
- 10. No
- 8. **(DO NOT READ)** (DON'T KNOW)
- 9. **(DO NOT READ)** (REFUSED)

11. **[ASK IF B9 = 1]**

B9A. What was the additional incentive you received?

(Record Response: \_\_\_\_\_)

98. (DO NOT READ) (DON'T KNOW)

99. (DO NOT READ) (REFUSED)

How did you find out about the extra incentive for addressing the <BARRIER>? Were you...

(READ LIST)

12. Informed during your HES audit

Called back sometime after the audit

00. Other (DO NOT READ, Specify: \_\_\_\_\_)

98. (DO NOT READ) (DON'T KNOW)

99. (DO NOT READ) (REFUSED)

Do you know how much it would cost to address the <BARRIER>?

13. Yes

14. No

8. (DO NOT READ) (DON'T KNOW)

9. (DO NOT READ) (REFUSED)

15. [ASK IF B11 = 1]

How much do you think it would cost? (Record response: \_\_\_\_\_)

98. (DO NOT READ) (DON'T KNOW)

99. (DO NOT READ) (REFUSED)

Do you know what steps are required to fix the <BARRIER>?

1. Yes

2. No

8. (DO NOT READ) (DON'T KNOW)

9. (DO NOT READ) (REFUSED)

## Decision Process

16.

Why did you decide not to participate in the special offer to address the <BARRIER>?

**(DO NOT READ, SELECT ALL THAT APPLY)**

- 17. (Cost)
- 18. (Incentive not high enough)
- 19. (I did not realize it was a limited time offer)
- 20. (Not worth the effort)
- 21. (Timing was not right for me)
- 22. (Didn't know I needed to/how to)
- 23. (Don't believe it needs to be fixed)
- 00. Other (Specify: \_\_\_\_\_)
- 98. **(DO NOT READ)** (DON'T KNOW)
- 99. **(DO NOT READ)** (REFUSED)

Was the <BARRIER> one of the reasons why you decided not to install certain weatherization measures recommended to you during your audit?

- 24. Yes [**SKIP TO Error! Reference source not found.**]
- No
- 8. **(DO NOT READ)** (DON'T KNOW)
- 9. **(DO NOT READ)** (REFUSED)

[ASK IF 0 = 2]

If the <BARRIER> was not the reason, what were the reasons?

**(Record Response: \_\_\_\_\_)**

- 98. **(DO NOT READ)** (DON'T KNOW)
- 99. **(DO NOT READ)** (REFUSED)

[ASK IF C2 = 1]

C4. Would you have addressed the <BARRIER> if the program incentive were higher?

- 1. Yes [**SKIP TO C4a**]
- 2. No [**SKIP TO C6**]
- 98. **(DO NOT READ)** (DON'T KNOW)
- 99. **(DO NOT READ)** (REFUSED)

C4a. If the incentive had been \$500, would you have addressed the <BARRIER>?

- 1. Yes [**SKIP TO C6**]
- 2. No
- 98. **(DO NOT READ)** (DON'T KNOW)
- 99. **(DO NOT READ)** (REFUSED)

[ASK IF C4A = 2]

A5. What if the incentive amount had been \$750?

- 25. Yes
- No
- 98. **(DO NOT READ)** (DON'T KNOW)
- 99. **(DO NOT READ)** (REFUSED)

Is there any other service that would have encouraged you to move forward?

(Record Response: \_\_\_\_)

98. (DO NOT READ) (DON'T KNOW)

99. (DO NOT READ) (REFUSED)

## Conclusion

Do you have any other comments or suggestions you would like to share regarding the program at this time?

00. Yes (Record Response: \_\_\_\_)

96. No

98. (DO NOT READ) (DON'T KNOW)

99. (DO NOT READ) (REFUSED)

[SCREEN BREAK]

**FINISH.** Thank you very much for your time and cooperation. Have a good day.