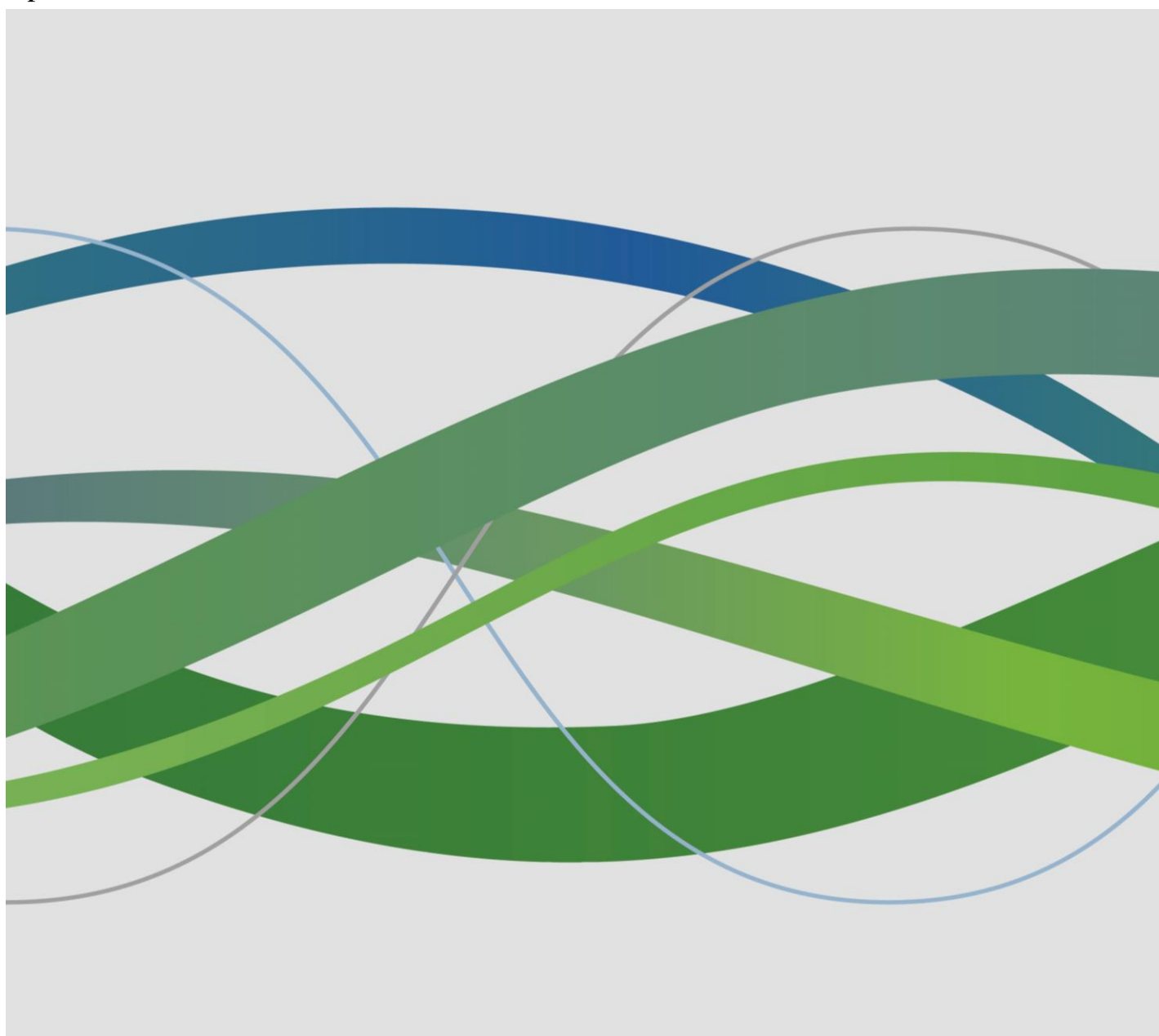


Process Evaluation of Electric and Natural Gas Energy Optimization Programs Final Process Evaluation Results for Efficiency UNITED

Michigan Community Action Agency Association (MCAAA)

Prepared by KEMA, Inc.

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1. Executive Summary

This section contains a summary of more detailed findings found elsewhere in this report.

1.1 Introduction and Scope

This is the process evaluation of the 2012 Efficiency UNITED (EU) portfolio of energy efficiency programs. It was conducted on behalf of the Michigan Community Action Agency Association (MCAAA). Programs covered by this evaluation include:

- The Efficiency UNITED program as a whole (cross-cutting program marketing and delivery issues);
- The Residential and Small Business ENERGY STAR Products (ESP) program;
- The Residential Appliance Recycling (RAR) program;
- The Home Performance Program with its three subprograms (HVAC, Online Audit, and Onsite Audit);
- The Residential Low-Income (RLI) program;
- The Multifamily program;
- The 2012 Behavioral Study Pilot; and
- The Commercial and Industrial (C&I) program

The information for this process evaluation came from both in-depth interviews and Computer-Aided Telephone Interview (CATI) surveys. These interviews and CATI surveys were completed during the October 2012 - February 2013 period.

We have structured this Executive Summary by program/topic area with a further division of the findings and recommendations along three themes:

- *Good news:* Findings that indicate where the program or program activity is doing well;
- *Program challenges:* Findings that indicate where the program or program activity is facing some challenges; and
- *Opportunities for improvement:* Recommendations on ways that the program or program activity could improve its performance.

1.2 Program Marketing Activities

This section summarizes findings from the larger report concerning program marketing activities.

1.2.1 Good News

- *Awareness of EU among the general population is increasing:* As discussed below, the 2012 general population survey found that 40 percent of the respondents were aware of the EU programs. This is an increase from the 2011 general population survey when 34 percent of the respondents reported awareness of the EU programs.
- *The vast majority (90%) of the utility representatives thought that marketing and outreach responsibilities are allocated appropriately between CLEAResult and the utilities.*
- *The majority of utility representatives thought that CLEAResult was spending an appropriate amount of resources on EU marketing and promotions.* Only 14 percent of the respondents said that CLEAResult and their subcontractors were *not* spending an appropriate amount on marketing outreach. In addition, one of these respondents thought that CLEAResult was actually spending too much on EU marketing. Almost two-thirds (64%) of the respondents said that an appropriate amount of resources was being spent with the remainder (23%) saying that they did not know.

1.2.2 Program challenges

- *Only half of the utility representatives said they were satisfied with the EU's marketing and outreach efforts¹.* Some of the explanations that utility representatives provided for why they gave satisfaction ratings of three or less included:
 - “Just because I think we could do more to get the customers involved and just help them understand the whole efficiency [concept].”
 - “We haven't been really contacted yet to kind of coordinate better with them on their communication schedule.”
 - “Too much money spent. Need it in incentives and not on advertising.”
- *The percentage of utility representatives citing lack of customer awareness as a barrier to customer participation increased from 33 percent in 2011 to 50 percent in 2012.* However, it should be noted that four of the utilities we interviewed in 2012 represented municipal utilities that were new to the EU programs.

¹ We conducted interviews with 12 members of utility staff as well as two Wisconsin Public Power Institute (WPPI) staffpersons who were acting as representatives for some of the smaller municipal utilities in the delivery of the EU programs. Our interviews revealed that these WPPI staffpersons were important representatives of the municipal utilities in many aspects of EU. So for this reason, as well as for the sake of simplicity, we are going to refer to all 14 of these interviewees as “utility representatives.”



- *Only 16 percent of the 2012 participating HVAC contractors were satisfied with EU's marketing efforts for the HVAC rebate program.*
- *Only 59 percent of the retailers participating in the upstream lighting component of the ESP program were satisfied with the program marketing efforts.*
- *When asked for suggestions on ways to increase EU program participation, increased advertising was recommended much more frequently by 2012 participants than participants in years past:*
 - 69 percent of 2012 ESP program participants recommended this, compared to 44% in 2011 and 41 percent in 2010.
 - 52 percent of 2012 HVAC rebate participants recommended this, compared to 45 percent in 2011 and 24 percent in 2010.

1.2.3 Opportunities for Improvement

- *The continuing need for a marketing plan:*
 - In our evaluation of the 2011 EU programs, we made a recommendation that CLEARResult needs to demonstrate that it has a detailed and comprehensive marketing plan for the EU programs in 2012. "Such a plan should be available to the EU utilities and have a roadmap that is detailed enough so that utilities who want to promote the EU program can use this to plan their own marketing efforts," we wrote in the process evaluation of the 2011 EU program. "It should describe what market sectors or customer types are being targeted, which geographic regions are being targeted, which marketing approaches are being used, and a timeline of marketing activities." CLEARResult has yet to produce this marketing plan although it has recently indicated that it is being developed.²
 - In our 2012 interviews with MCAA utility representatives, about a quarter of the interviewees pointed to the continued absence of this marketing plan and indicated it was hampering their ability to coordinate marketing efforts with CLEARResult.
- *The need to provide the utilities with information on which marketing efforts have been more effective than others:* When we asked the utility representatives which marketing and outreach activities they deemed to have been most effective, the most common response (42% of respondents) was that EU and the implementation contractor CLEARResult did not provide the

² In April 2013, after the draft version of this process evaluation report had been submitted for review, CLEARResult sent a memorandum to the evaluation team indicating that CLEARResult had completed a 2013 marketing plan, but it was still undergoing internal review.

respondents with information that would allow them to judge the relative effectiveness of the various marketing methods. “I don’t really know,” said one of these respondents. “...I get those reports ... and those kind of let us know how they’re doing against goal and things like that. But I don’t really know from their perspective which of their marketing outreaches has been effective compared to others.”

- *Making better use of the local/customer knowledge of the EU utilities to promote EU:* When we asked the EU utilities what EU could do to encourage them to promote the EU programs more, about a quarter of the interviewees mentioned that it would be helpful to have program brochures that their field staff could hand out to customers. A number of them also said that they would be more willing to become involved with EU community events if there was more “co-branding” of the utility and EU at these events, rather than the emphasis being primarily on EU. Finally, as discussed above, the lack of a strategic marketing plan makes it more difficult for the utilities that do want to do more marketing and outreach for EU to coordinate their efforts with CLEAResult.

1.3 General Program Design and Delivery

This section summarizes findings from the larger report concerning general program design and delivery.

1.3.1 Good News

- *When asked what aspects of the program were going well, the utility representatives named 16 different aspects with eight of these being cited by more than one representative.* The most-cited examples of program aspects going well included better advanced notification when EU staff are going to be in the area and EU being more willing to hold quarterly meetings in other parts of Michigan.
- *The large majority of utility respondents thought that EU rebate levels were adequate to encourage the adoption of energy-efficient technologies by their customers.* Seventy percent of the respondents said that the rebate levels were adequate, with only 20 percent saying they were not adequate and 10 ten percent saying they did not know.
- *The utility representatives generally thought the EU programs were offering the right mix of energy-efficient measures.* We asked the utility representatives whether they thought the EU programs were currently offering the right mix of energy-efficient technologies. More than half (55%) gave an unqualified “yes” to this question. The remainder thought that the current mix was good but either wished that some additional measures could be added or that EU should change the emphasis on which measures it promoted.
- *The large majority of utility representatives who were familiar with EU’s rebate application processing were satisfied with it.* Although only five of the utility representatives we interviewed



said they were familiar enough with CLEAResult's rebate application processing activities to provide a satisfaction rating, four of the five said they were satisfied with these activities.

1.3.2 Program Challenges

- *Only half of the utility representatives were satisfied with CLEAResult's performance.* The five utility representatives who gave satisfaction ratings of three indicated either dissatisfaction with CLEAResult not attaining energy savings goals, dissatisfaction with CLEAResult's lack of a marketing plan and general coordination of marketing efforts with utilities, or a desire to have more transparency as to where CLEAResult is spending program funds.
- *Less than half (42%) of the utility representatives were satisfied with the EU program as a whole.* Those who were less than satisfied with EU as a whole mentioned energy savings goals not being achieved, the need for better coordination on the marketing end, the need for improved communications, the feeling that their customers were not getting back what they were paying into the program, and dissatisfaction with the Energy Optimization legislation.
- *When asked about areas of EU administration and delivery where there was room for improvement, the utility representatives named 20 different areas with nine of these cited by multiple respondents.* The most-cited areas for program improvement included making sure that EU field representatives made it clearer to customers that they were working with the utilities (to avoid customer confusion/suspicion), meeting energy savings goals, and having a marketing plan.

1.3.3 Opportunities for Improvement

- *Provide more transparency in how EU funds are being spent:* A number of EU utilities expressed frustration that CLEAResult is not providing them with clearer information on how much of the Efficiency UNITED funding is being spent on administration, marketing, incentives, etc.³

1.4 The Energy Star Products Program

This section summarizes findings from the larger report concerning the Energy Star Products program.

1.4.1 Good News

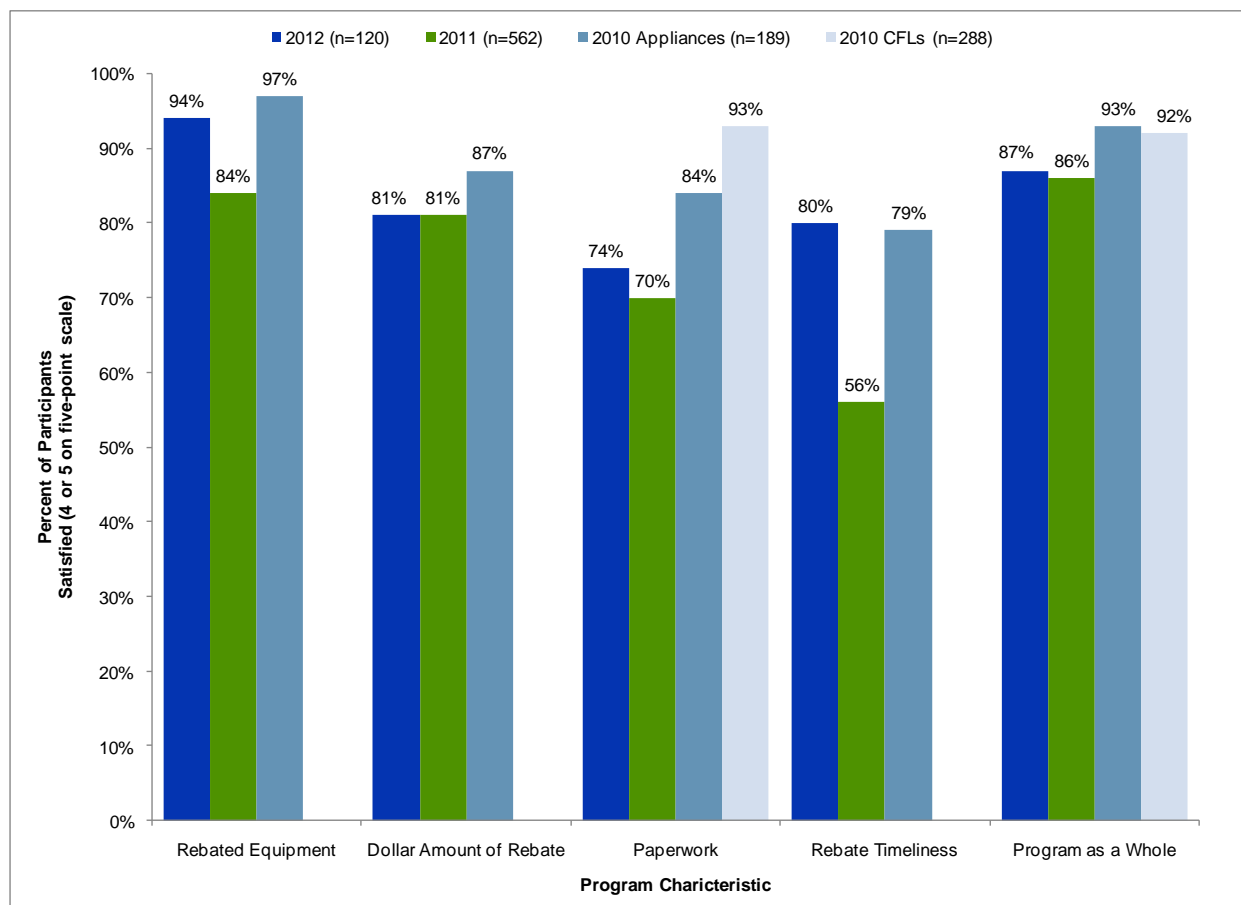
- *Ninety-four percent of the retailers participating in the upstream lighting component of the ESP program were satisfied with the CLEAResult staff.*

³ In April 2013, after the draft version of this process evaluation report had been submitted for review, CLEAResult sent a memorandum to the evaluation team indicating that CLEAResult and MCAA have provided a breakdown of the 2012 implementation spending in the 2012 Annual Report and that this report will be delivered to all EU members and the MPSC. CLEAResult also said that this reporting will continue in 2013.



- *Eighty-six percent of the retailers participating in the upstream lighting component of the ESP program were satisfied with the program information.*
 - *Retailer satisfaction with the ESP program increased significantly from 2011. The percentage of participating retailers who were satisfied with the program as a whole increased from 59 percent in 2011 to 77 percent in 2012.*
 - *Program participants were much more satisfied with the timeliness of rebate payments than they had been in years past. The percent of ESP program participants who were satisfied with the timeliness of their rebate payments increased to 80 percent in 2012 from 56 percent in 2011.*
- Figure 1-1 shows the ESP program satisfaction ratings for the 2010-2012 period.

Figure 1-1. ESP Program Satisfaction, 2010 – 2012



1.4.2 Program Challenges

- *Almost all respondents (97%) who purchased rebated appliances through the ESP program said they would have bought the appliance with or without the rebates.*



- *Only 59 percent of the retailers participating in the upstream lighting component of the ESP program were satisfied with the program marketing efforts.*
- *Participant satisfaction levels with program paperwork requirements were low.* When asked for their level of satisfaction with the rebate application forms and other paperwork requirements, only 74 percent of the 2012 program participants said they were satisfied. This is down from 84 percent satisfaction in 2010. Reasons provided by respondents for dissatisfaction with the paperwork included the rebate application forms being too complicated, confusing, and difficult to read; and the paperwork taking too long to fill out.
- *The percentage of 2012 ESP program appliance purchasers who recalled in-store signage or displays declined significantly from 2011.* Only 36 percent of the 2012 participants who purchased appliances recalled in-store signage compared to 63 percent in 2011. Only six percent of the 2012 participating appliance purchasers recalled in-store displays compared to 35 percent in 2011.
- *Only 46 percent of 2012 ESP program appliance purchasers said that their salesperson discussed equipment efficiency levels with them, a significant drop from 66 percent in 2011.*

1.5 The Home Performance Program

This section summarizes findings from the larger report concerning the Home Performance Program.

1.5.1 Good News

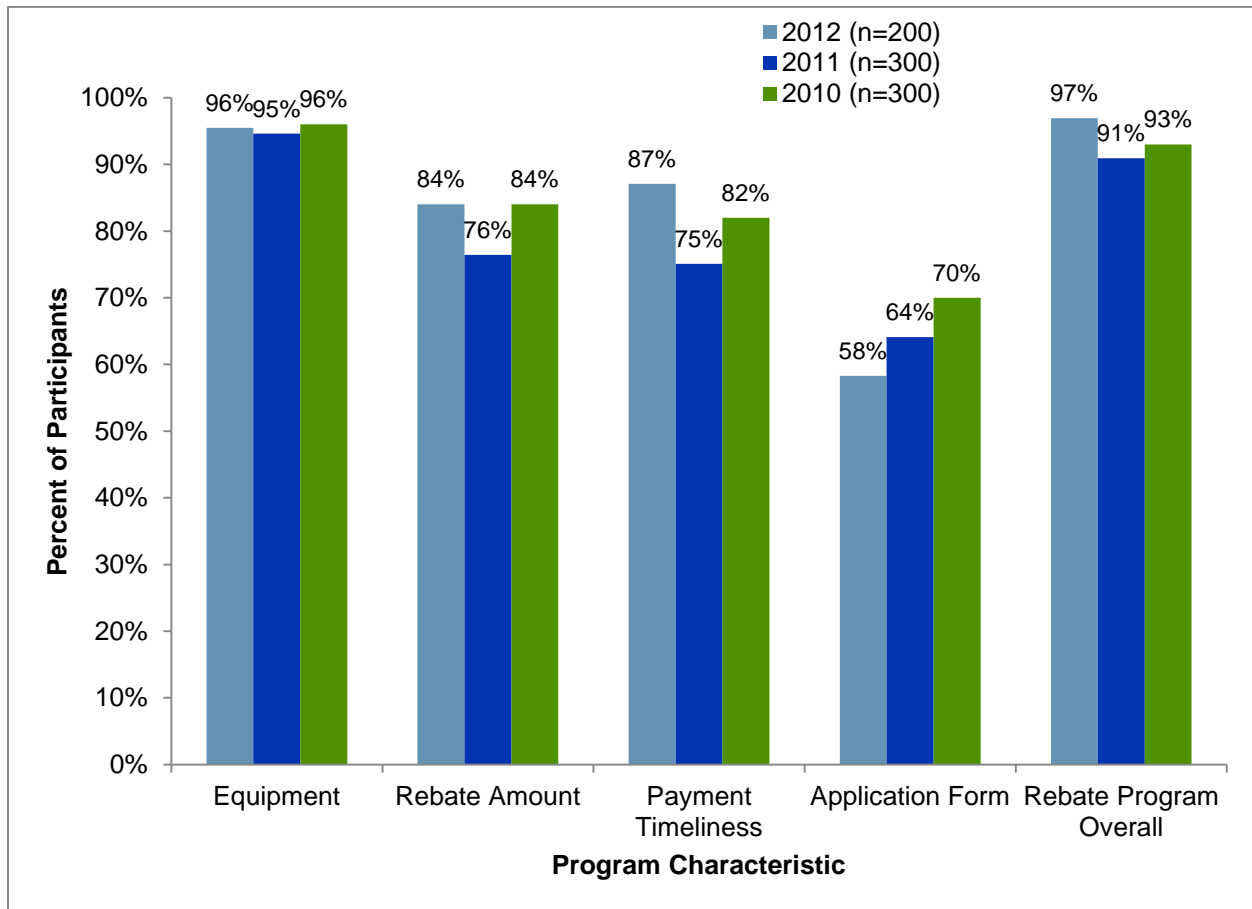
- *The 2012 participating HVAC contractors were more satisfied with program rebate amounts than the 2011 HVAC contractors had been.* Satisfaction with program rebates in general increased from 47 percent in 2011 to 55 percent in 2012. The percentage of contractors who said the water heater rebates were adequate to move customer demand increased from 57 percent in 2011 to 71 percent in 2012. The percentage saying that the setback thermostat rebates were adequate increased from 57 percent in 2011 to 77 percent in 2012. The percentage saying that the ECM drive rebates were adequate increased from 70 percent in 2011 to 81 percent in 2012.
- *The 2012 participating HVAC contractors were more satisfied with program rebate delivery than the 2011 HVAC contractors had been.* Satisfaction with program rebate delivery increased from 57 percent in 2011 to 65 percent in 2012.
- *2012 participating customers were much more likely to cite HVAC contractors as their reason for participation than 2011 participants:* Respondents in 2012 were more likely to say they bought the equipment based on contractor recommendations (41%) than in 2011 (21%). This finding, along with the evidence of a growing list of participating HVAC contractors, indicates the



program is more successfully using these trade allies as an extension of the program marketing and outreach efforts.

- 2012 HVAC program participants were generally more satisfied than their 2011 counterparts. Figure 1-2 shows that 2012 participants were more satisfied than 2011 participants for all aspects of the program except for the rebate application forms.

Figure 1-2. HVAC Program Satisfaction, 2010 - 2012



- The percentage of 2012 Online Audit participants who first heard about the audit via word of mouth nearly doubled from 2011 levels. Fifteen percent of 2012 Online Audit participants said they first heard about the program via word of mouth. In comparison only eight percent of 2011 participants and six percent of 2010 participants cited this.
- The percentage of users of the Online Audit Tool who said that the tool was easy to use increased in 2012. This percentage increased from 78 percent in 2011 to 84 percent in 2012. The



introduction of a streamlined version of the tool in late 2011 was likely an important factor in this increase.

- *The percentage of users of the Online Audit Tool who said that the tool provided useful information increased in 2012. This percentage increase from 54 percent in 2011 to 68 percent in 2012. In addition, the percentage of respondents who said that the tool provide information that was “very useful” increased from 30 percent to 37 percent during this same period.*
- *The percentage of Onsite Audit participants who were “very satisfied” with the audit scheduling process increased from 72 percent in 2011 to 88 percent in 2012.*

1.5.2 Program Challenges

- *The 2012 participating HVAC contractors were less satisfied with EU’s HVAC rebate program than they had been in 2011. Satisfaction with the program as a whole declined from 87 percent to 77 percent.*
- *Only 16 percent of the 2012 participating HVAC contractors were satisfied with EU’s marketing efforts for the HVAC rebate program. This was a decline from 43 percent satisfaction in 2011.*
- *The 2012 participating HVAC contractors were much less satisfied with the rebates for energy-efficient furnaces and boilers than they had been in 2011. The percentage of contractors who said the rebates for 94%+ AFUE furnaces were adequate to move customer demand decreased from 60 percent in 2011 to 45 percent in 2012. The percentage of contractors saying that the rebates for 92%+ AFUE boilers were adequate to move customer demand decreased from 63 percent in 2011 to 30 percent in 2012.⁴*
- *Only 58 percent of participating customers were satisfied with the HVAC program’s rebate application forms.*
- *The percentage of Online Audit program participants who were “very satisfied” with the program declined from 2011 to 2012. Table 1-1 shows that only 52 percent of the 2012 participants were very satisfied compared to 75 percent of the 2011 participants (this overall satisfaction question was not asked in 2010). The most-cited reason for participant dissatisfaction was not receiving the energy kits.*

⁴ In an April 2013 memorandum CLEAResult noted that in the fourth quarter of 2012 it doubled the EU rebates for 95% AFUE furnaces, 92% AFUE boilers, and thermostats. The program participants that the evaluators surveyed participated before these rebates were increased.



- *Participant satisfaction with Onsite Audit program declined in 2012.* Only 83 percent of the 2012 Onsite Audit program participants were satisfied with the overall program compared to 96 percent in 2011.
- *The percentage of Onsite Audit program participants who heard about the program from word-of-mouth declined from 2011.* Only 17 percent of the 2012 participants said they heard about the onsite audit program from friends, neighbors or coworkers, compared to 30 percent in 2011. It is not clear why word-of-mouth referral increased for the Online Audit program (see above), but decreased for the Onsite Audit program over this same period.

Table 1-1. Satisfaction with the Online Audit Program as a Whole, 2011 - 2012

Response Category	2012 (n=300)	2011 (n=200)
Very satisfied	52%	75%
Somewhat satisfied	36%	16%
Neither	10%	5%
Somewhat dissatisfied	2%	2%
Very dissatisfied	<1%	2%
Don't know	<1%	0%
Total	100%	100%

1.5.3 Opportunities for Improvement

- *Improving the EU website for HVAC participants and contractors:* When asked how the HVAC rebate program could be improved, nearly two thirds (62%) of the contractors providing recommendations said they wanted simplified, streamlined information that is completely online. When asked if any of the non-EU rebate programs they participated did anything the contractors considered best practices, eleven contractors responded. Almost all, ten out of eleven, stated that having program information, application and rebate management all online is a best practice that they appreciate in other utility programs.⁵
- *More marketing of the HVAC program:* As noted above, only 16 percent of the 2012 participating HVAC contractors were satisfied with EU’s marketing efforts for the HVAC rebate program. In addition, over half (52%) of the HVAC program participants recommended increased advertising as the best way to increase program participation.⁶

⁵ In an April 2013 memorandum, CLEAResult indicated that it would be piloting an online rebate application.

⁶ In an April 2013 memorandum, CLEAResult acknowledged it need to improve its performance in this area and outlined some planned activities including creating a single application that can be used by any EU Electric or EU



1.6 The Residential Appliance Recycling Program

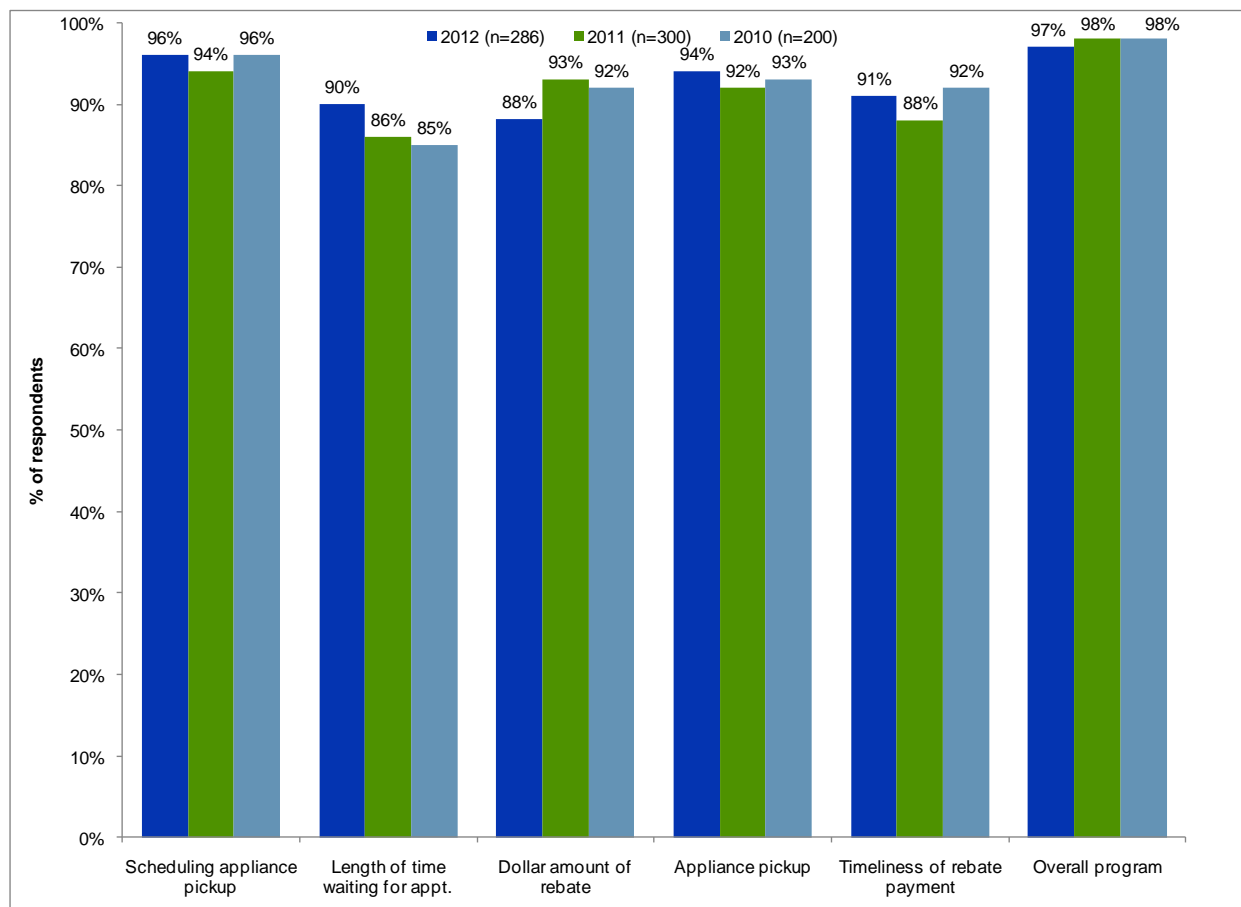
This section summarizes findings from the larger report concerning the Residential Appliance Recycling program.

1.6.1 Good News

- *Participant satisfaction with the amount of time waiting for an appliance pickup has increased over time.* Figure 1-3 shows that the percentage of participants who have been satisfied with the amount of time they had to wait for an appliance pickup has increased steadily over time from 85 percent in 2010 to 90 percent in 2012.
- *The program continues to achieve the highest satisfaction ratings in the EU program portfolio.* In 2012 97 percent of the program participants were satisfied with the program.

Natural Gas territory contractor, restructuring Trade Ally Representatives by geographic area to help them develop an in-depth familiarity with the market participants and ensure that larger Trade Allies receive in-person and phone contact on a regular basis; and promoting Home Performance program benefits at “employee events” for participants in the C&I program.

Figure 1-3. Satisfaction with the Residential Appliance Recycling Program



1.6.2 Program Challenges

- Satisfaction with the rebate amount took a dip in 2012.* Figure 1-3 shows that participant satisfaction with the amount of the program rebates declined to 88 percent in 2012 from 93 percent in 2011. However, our survey also revealed that about two-thirds (65%) of 2012 participants said they would still use the program service even if no incentive was provided. The convenience of appliance disposal was the most-cited (48% of respondents) primary reason why 2012 survey respondents said they participated in the program.

1.7 The Residential Low Income Program

This section summarizes findings from the larger report concerning the Residential Low Income program.



1.7.1 Good News

- *The new RLI program guidelines that CLEAResult and MCAAA developed for the CAAs have been well received. In May 2012 CLEAResult distributed to the CAAs Income Qualified Energy Optimization Program Guidelines (“Guidelines”). The Guidelines describes the process, responsibilities between MCAAA and CLEAResult and the forms CAAs need to submit for payment. We asked CAA managers how useful the guidelines were and the large majority of interviewees (9 of the 11) found the Guidelines to be extremely useful.*
- *CAA satisfaction levels with CLEAResult and MCAAA continue to be much higher than they were in 2010: Although there was a slight dip from 2011 levels, the levels of satisfaction of the CAA representatives with the performance of CLEAResult and MCAAA in 2012 were still much higher than they had been when we first interviewed the CAA representatives in 2010 (*



- Figure 1-4).
- *Program participants have generally been very satisfied with the RLI program. Although program satisfaction took a small dip in 2012 (Figure 1-5), ninety percent of the participants still said that they were satisfied with the program.*



Figure 1-4. CAA Satisfaction with CLEARResult and MCAAA, 2010-2012

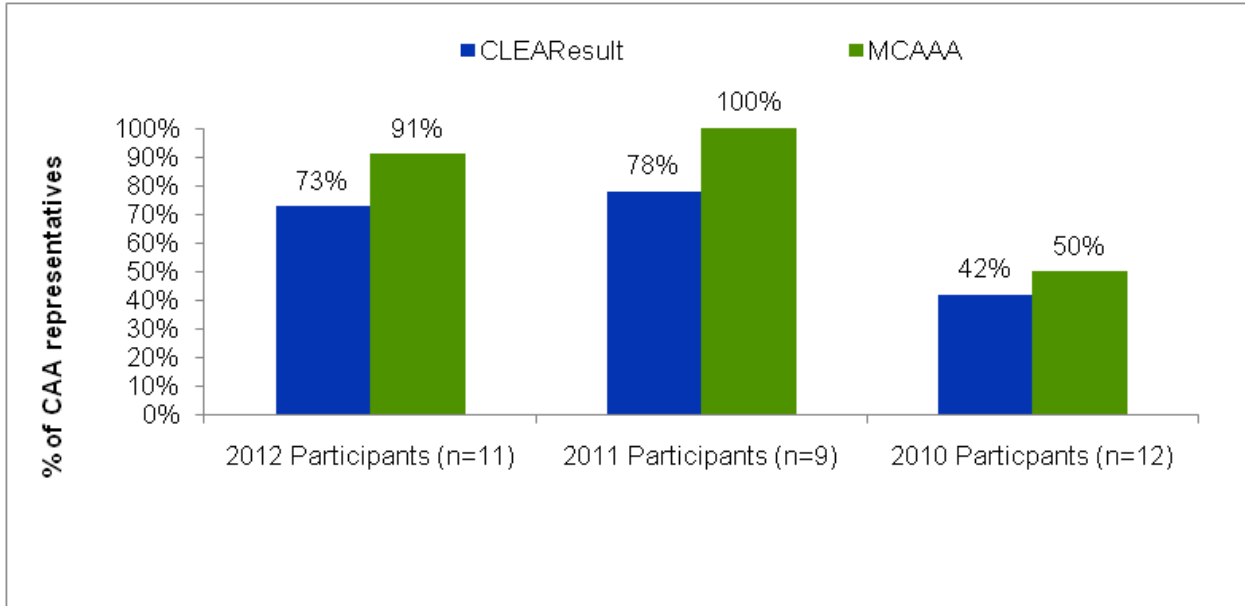
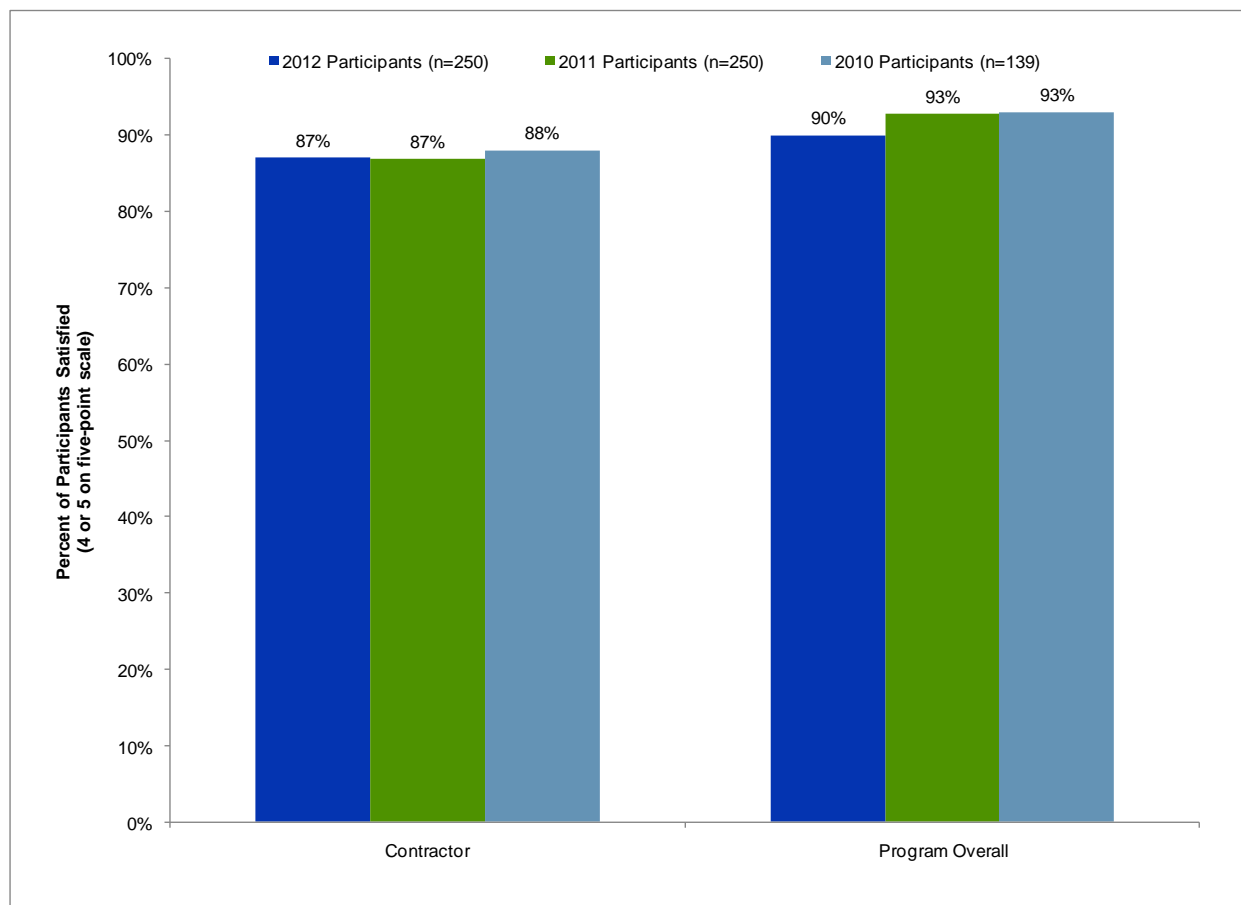


Figure 1-5. Participant Satisfaction with the RLI Program



1.7.2 Program Challenges

- *The CAAs have experienced significant cuts in funding for energy improvements:* In our interviews last year respondents had a bleak outlook on their ability to deliver energy improvements in 2012 due to the anticipated phasing out of ARRA funds, the permanent discontinuation of MPSC funds, and the reduction in LIHEAP grants. The magnitude of these cuts was not as severe as anticipated because unused carryover ARRA funding was redistributed to CAAs. Yet even with carryover ARRA funding:

 - All eleven CAA managers we interviewed said that they experienced fewer jobs, reduced staffing, reduced contractor services, and reduced measure usage since 2011.
 - Some CAAs reported as much as a 50 percent reduction in staffing and third party contractor services since 2011 and some CAAs reported having done only 20 percent of the work they had done in previous years and overall fewer jobs prior to the arrival of the ARRA funding.



- The statewide U.S. Department of Energy (DOE) funding allocation that provides administrative support and technical support for low income programs is being reduced statewide from \$20 million down to \$2 million. This will mean that some CAAs will not be able to deliver their low income programs.
- *Some of the CAAs have been reluctant to adopt pre/non-weatherization measures introduced by MCAAA and CLEAResult:* With the anticipation of reduced funding for the low income programs, CLEAResult and MCAAA developed alternative methods to get energy-saving measures installed in client homes. These measures, which are called Pre-Weatherization Measures or Energy Efficiency for Non-Weatherization Measures, include measures such as CFLs, faucet aerators, high-efficiency showerheads, pipe insulation, and natural gas furnace tune-ups. Yet some the CAA interviewees expressed hesitation to use these measures vs. the more traditional weatherization measures. Barriers they cited to greater use of these Pre/Non-Weatherization measures include the need to buy them in bulk, the upfront cost to purchase them, lack of space to store them, uncertainty with how much they will be used, minimal support fees, and concerns with negative customer experiences with some of the measures.
- *RLI program participants also expressed dissatisfaction with these pre/non-weatherization measures.* In 2012 RLI program participants only had satisfaction ratings of 90 percent or greater for 3 of the 13 measures we asked them about. In contrast, in 2011 at least 90 percent of participants were satisfied with every type of measure installed. We collected more than 50 explanations describing why participants were less than satisfied with these various energy-efficiency measures. Participants who were seniors were more likely to be dissatisfied with the faucet aerators and low-flow showerheads than younger participants. As noted, several of the CAA program implementers are also aware of the low satisfaction for these measures. During our interviews with CAAs, at least a third of them stated they are no longer installing aerators because of the number of complaints.
- *Many CAAs have found the RLI program’s documentation requirements to be excessive and the reimbursement process to be too slow.* These issues are discussed in the “Opportunities for Improvement” section below.

1.7.3 Opportunities for Improvement

- *Reducing the RLI program documentation requirements:* In general, the interviewees viewed the RLI program’s measure documentation requirements as excessive and requested that the RLI program streamline the process by eliminating content duplicated on other forms or for other grant sources. Some claimed that the time required to submit documents as evidence of measures installed is causing considerable hardship due to limited staffing. To help reduce the measure documentation paperwork burden, they had some suggestions including making use of the database FaxPro, exploring whether paperwork submitted for DOE is sufficient evidence for

EU's documentation needs, and allowing information for prescriptive measures that can be purchased in bulk (e.g., CFLs, refrigerators) to only be reported on an annual basis or when measure efficiency changes. In general, they recommended that EU coordinate with the utilities and CAAs to develop solutions that are acceptable to all parties involved.

- *Streamlining the payment process:* As CAA budgets are reduced to historically low levels, waiting too long to be reimbursed for measures installed can put additional strains on CAA finances. Some CAA interviewees indicated that the current reimbursement system – which typically involves a six-week turnaround -- is neither fast enough nor consistent enough. Many of the CAA managers like to see payment occur within 30 days or less. Additionally, some interviewees expressed interest in electronic transfers and/or receipt of advanced payments for higher-cost measures. Furthermore, the lag in payment is preventing the RLI program from reaching its full potential since CAAs have stopped using it weeks in advance of their year-end closure. At least one interviewee said that the review process, prior to payment, could be more proactive in making corrections rather than holding up payments when oversights occur. Some interviewees also said that they spend too much time tracking small cost expenditures such as payments for CFLs. Some have even reported not submitting the paperwork due to what they view as a cumbersome process.
- *Mitigating CAA barriers to greater use of Pre-/Non-Weatherization measures:* As discussed above, the CAA interviewees identified a number of barriers to greater use of the Pre-/Non-Weatherization measures that CLEAResult and MCAAAA are trying to get installed in low income housing. Several CAAs indicated they do not have excess cash to purchase these measures in advance nor can they pay for their staff hours to install them. If the preference is to use CAAs to deliver these measures, there will need to be an increase in support fees, purchases of these measures in advance, and solutions for storage such as compensation for a storage locker. After a closer examination of the solutions the program may conclude these Pre/Non-Weatherization Measures are not a good fit in the current arrangement and that hiring third-party implementers to install these measures is a more simplified solution.
- *Improving the management of the low-income direct install program:* As noted above, 2012 RLI program participants were much less satisfied with the direct install measures than they had been in 2011. In addition, as discussed in the main body of the report, many of the CAA representatives said that direct install campaigns of CLEAResult and its subcontractors could benefit from better communications and coordination with the CAAs and more evidence of an overall strategy for market penetration.
- *Improving the inspection process:* The CAA representatives had a number of recommendations on how the inspection process could be improved. These recommendations included:



- Developing a section in the Program Guidelines on protocols for performing onsite inspections which would describe inspection procedures and how CAAs will be informed of inspections;
- Ensuring onsite inspectors have a photo ID badge or some kind of credentials during the site visit;
- Developing a customer/client notification letter for each CAA that clearly states the purpose and provides a CAA point of contact that will enable the customers/clients to follow up if they wish to verify the authenticity of the inspection request,
- Allowing the CAAs to be notified ahead of time of customers/clients who have been selected for inspections in case they might be cautious or guarded about allowing the inspectors in; and
- Giving the CAAs the option of doing an inspection ride-along.

1.8 The Behavioral Study Pilot Program

This section summarizes findings from the larger report concerning the Behavioral Study Pilot program.

1.8.1 Good News

- *Eighty percent of the program participants we interviewed said that the program helped them reduce their energy use.*

1.8.2 Program Challenges

- *There was evidence that the program is losing track of some program participants who would be interested in continuing their participation.* Among the ten participants we interviewed who we assumed had dropped out of the program (due to extended periods of inactivity), three of the ten attributed their dormancy to not hearing from Efficiency UNITED as expected. In addition, when we were developing the dropout participant sample frame, of the 101 total households we categorized as potential dropouts, we removed thirty of these from our sample frame because they wanted to continue the program.
- *Payment of program incentives appears slow.* Nearly half of the participants who completed the program reported that the incentive took between one and two months to arrive. Four of the 20 participants we interviewed had not yet received an incentive nearly three months after the tracking data indicated they had completed the program.



- *There was some evidence that program participants were getting fatigued the longer they stayed with the program.* Participants reported being the most satisfied (85% of respondents) with the first module, but only 72 percent of participants were satisfied with the third module.

1.8.3 Opportunities for Improvement

- *The program needs to examine its program tracking data to find participants with prolonged periods of inactivity to find out why they are inactive.* As noted above, among the ten participants we interviewed who we assumed had dropped out of the program (due to extended periods of inactivity), three of the ten attributed their dormancy to not hearing from Efficiency UNITED as expected. Other participants may be dormant for other reasons such as barriers to action that the pilot program may be able to mitigate.
- *The program needs to speed up its incentive payments.* As noted above, 20 percent of participants we interviewed had not yet received an incentive nearly three months after the tracking data indicated they had completed the program.

1.9 The Commercial and Industrial (C&I) Program

This section summarizes findings from the larger report concerning the C&I program.

1.9.1 Good News

- *The 2012 C&I participants were much more likely to say that the objective of their projects were to save energy than they had in years past.* This is good news for the program since projects that have other objectives besides energy efficiency are more likely to be free riders. The percentage of participants who said that the purpose of their project was to improve equipment efficiency increased from 69 percent in 2010 to 83 percent in 2011 and then to 94 percent in 2012.
- *The impacts of the recession seem to be lessening.* The 2012 survey asked participants if the recent economic downturn affected the way their company makes decisions about the purchase of energy using equipment. Only 50 percent of the 2012 participants said that their equipment purchasing decisions were being impacted by the economic downturn. This compares to 64 percent in 2011 and 74 percent in 2010.

1.9.2 Program Challenges

- *There was evidence that the 2012 program was getting involved in C&I projects later than the 2011 program had, which can increase free ridership.* Only 47 percent of the 2012 C&I program participants said they had heard of the program before starting their project. In contrast, 70 percent of the 2011 C&I program participants said they had heard of the program before starting



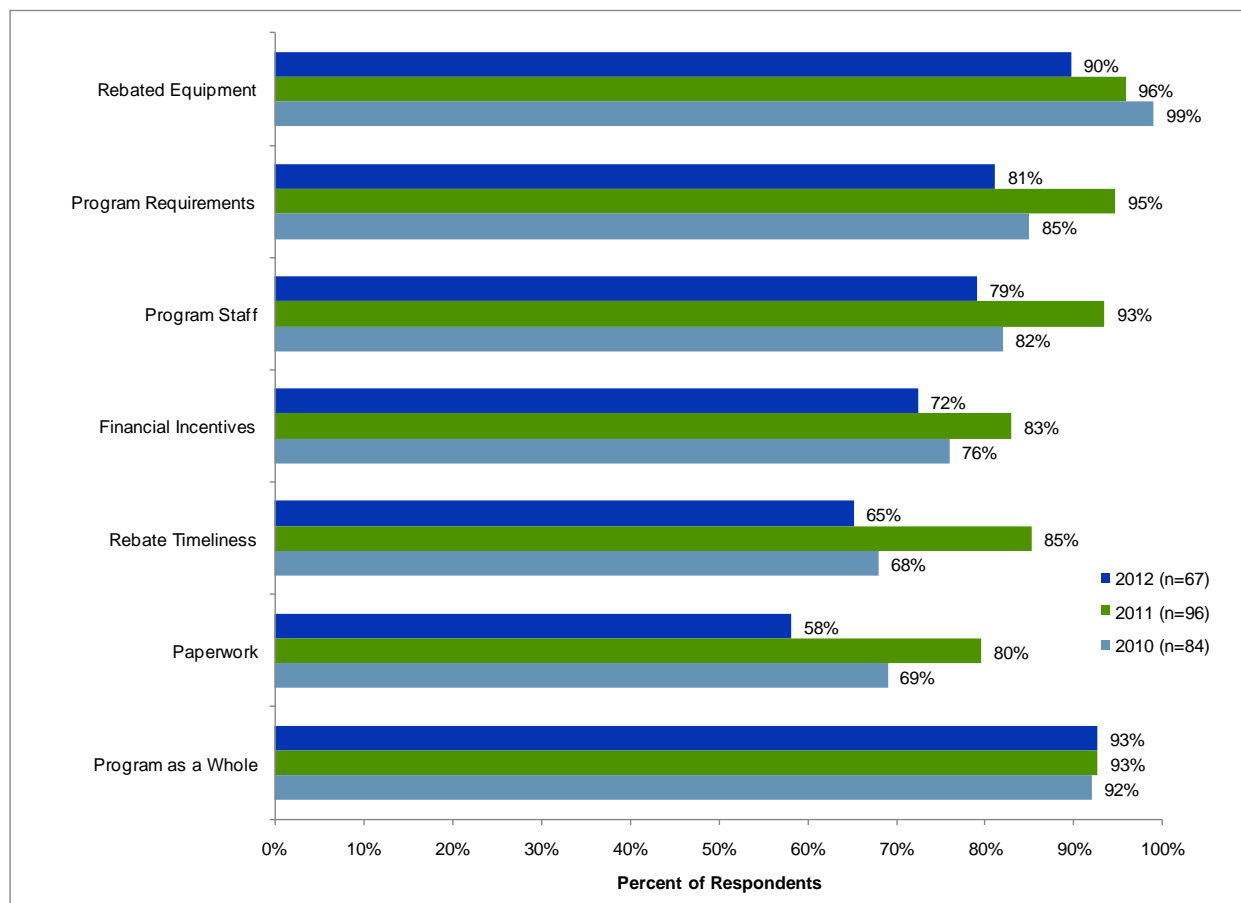
their project. The 2012 C&I program participants were much more likely (13% of respondents) to hear about the program after they made the project decision than their 2011 counterparts (only 3%). These trends are causes for concern because, in general, the later an energy efficiency program becomes involved in a project, the less it will be able to influence the energy-efficiency options of the project and the greater the free ridership.

- *Although overall program satisfaction remained high in 2012, there was declining satisfaction with all of the program components since 2011.* Figure 1-6 shows that while satisfaction with the C&I program as a whole remained very high (93%), the 2012 participants were less satisfied than the 2011 program participants for nearly every program attribute. This is an odd pattern of results, and it is unclear what could have caused it. There were two major changes in 2012 – bringing program administration in house, and an increased use of direct installs particularly to the hospitality sector. It is possible one or both of these changes caused this pattern, but any factor that adversely affects all of the specific program characteristics should also affect the overall rating.

1.9.3 Opportunities for Improvement

- *Increasing program marketing and outreach:* When we asked 2012 participants what the program could do to increase participation, the most commonly provided suggestions included: increasing marketing (35%) and increasing communication and being more proactive (33%). In contrast, only 19 percent of respondents suggested increasing rebate levels as a way to increase participation.

Figure 1-6. Participant Satisfaction with the C&I Program



1.10 Findings from the Nonparticipant Surveys

In the 2012 evaluation we conducted a general population CATI survey of 782 residential customers in the MCAA service territories. These general population surveys are sometimes informally referred to as “nonparticipant surveys” because unless a utility’s energy efficiency programs are very active, most of the customers who are surveyed through random digit dial methods will turn out to be nonparticipants. In addition, DNV KEMA screened out program participants during the sample selection and in the initial survey questions. Some key findings from the nonparticipant surveys included:

- *Demographic differences:* The nonparticipants’ demographics differ from the participants’ in the following ways:
 - Nonparticipants were less likely than participants to own their homes, less likely to live in single-family detached homes, more likely to have one or five (or more) residents, were older, were less educated, and had lower incomes.



- Nonparticipants were less aware of ENERGY STAR, less concerned with reducing household energy consumption, and less concerned with the environment or global warming.
- *Awareness of EU programs:*
 - Forty percent of the 2012 respondents were aware of the EU programs. This is an increase from the 2011 general population survey when 34 percent of the respondents reported awareness of the EU programs.
 - Utility bill stuffers were the main source of program information for those respondents that were aware of any programs.
 - If looking for information on rebate programs, respondents would prefer to get information from the utility itself, either by calling the utility, checking the utility website, or getting information in a bill stuffer or direct mail.
- *Reasons for not participating and barriers to energy efficiency participation:*
 - The main reason respondents did not purchase CFLs more often was that there was currently no need for additional CFLs. This explanation is reinforced by numerous respondents noting that CFLs are long lasting, thus negating the need to purchase additional bulbs.
 - The main reason nonparticipant purchasers of larger equipment (clothes washers, water heaters, HVAC equipment, or dishwashers) did not participate in the rebate programs was because the respondents did not know the rebates were available.

2. Findings from In Depth Interviews with Program Actors

This chapter summarizes our findings from the in-depth interviews with various program actors including:

- Representatives of twelve EU utilities;
- Two representatives of the Wisconsin Public Power Institute (WPPI) who help the municipal utilities implement the EU programs;
- Thirty-one contractors who participated in the EU Residential HVAC Program;
- Twenty retailers who participated in the upstream lighting component of the EU Energy Star Products Program; and
- Eleven Community Action Agency (CAA) program managers.

2.1 The MCAAA Utility Perspectives

This section includes our process evaluation findings from the perspective of the EU utilities. We interviewed twelve of the EU utilities (including four of the new municipal participants) as well as two representatives from WPPI. Our interviews revealed that the WPPI representatives were important representatives of the municipal utilities in many aspects of EU. They helped keep the municipal utilities informed of EU program activities and assisted in the delivery of the EU program, especially when the EU field reps were working with C&I customers in the municipal service territories. In some cases they also provided financial incentives that could be added to the incentive package offered by EU.

2.1.1 The Involvement of the EU Utilities in Program Marketing and Delivery

This subsection discusses the familiarity of the EU utilities with the MCAAA program portfolio, their involvement with program marketing and delivery, whether they have plans to become more involved in EU in the future, and what their reasons might be for any future level of EU activity. Because there were eight municipal utilities that joined EU since our last report, we were interested in knowing to what degree these utilities were engaged in the delivery of the EU program portfolio. Since this was the second straight year we had interviewed the other EU utilities, we were also interested in knowing whether their involvement in program delivery had changed in the past year.

2.1.1.1 MCAAA Utility Familiarity with the EU Program Portfolio and Program Processes

We asked the EU utilities whether they were familiar with the EU program portfolio and to what extent they were involved with these programs. Representatives of all twelve EU utilities that we interviewed said they were familiar with the EU programs, including four of the new municipals.



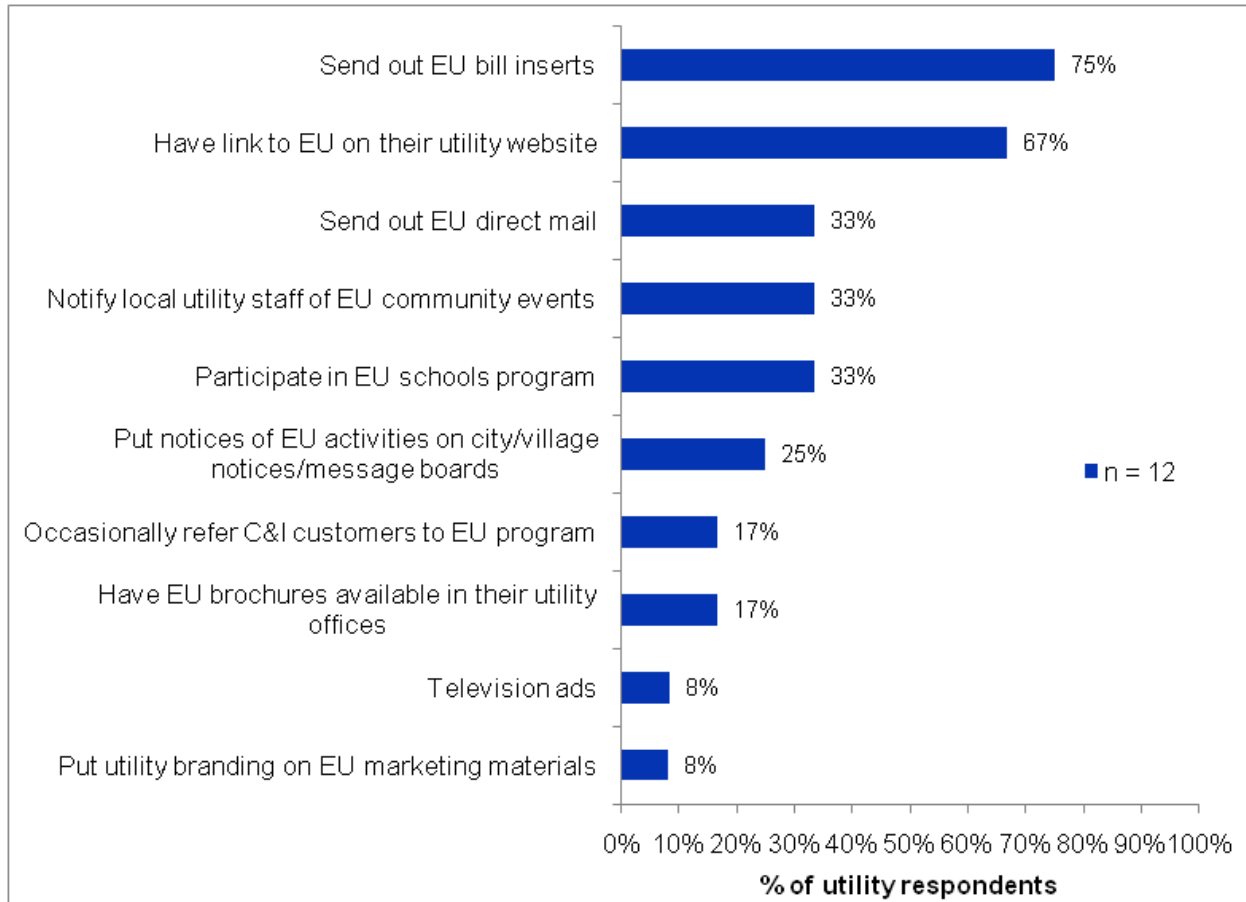
There appeared to be two main factors driving this high level of program familiarity – the quarterly EU update meetings and the activity of the WPPI representatives. All of the utilities we interviewed said that they had participated in at least one of the quarterly meetings, either by phone or in person. A number of the utilities we interviewed expressed their appreciation that EU was varying the location of these quarterly meetings so that they could sometimes participate in person without driving too far. The municipal utilities reported that the WPPI representatives (two of whom we also interviewed) played a key role in keeping them informed of program activities. Some of the utilities who we had interviewed the previous year also said that CLEAResult had improved its reporting and other communications since the last time we had interviewed them.

Yet, as was the case last year, the level of familiarity with the EU program portfolio varied from utility to utility. Very few of the EU utilities we interviewed indicated familiarity with all of the EU programs or all of the EU processes (e.g., checking customer eligibility, rebate application processing, etc.). The extent of this familiarity is indicated in the sample sizes for the satisfaction ratings of the various EU programs and processes, since we did not ask the utilities to rate their satisfaction with programs or processes they were unfamiliar with.

2.1.1.2 MCAAA Utility Involvement with Program Marketing and Delivery

We asked the MCAAA utility representatives whether they assisted CLEAResult in the marketing of the EU program. Figure 2-1 shows that three quarters of the utilities we interviewed said that they send out bill inserts promoting EU program and two thirds said that they have links to the EU website on their utility website. Other commonly-cited marketing activities included sending out direct mail promoting EU programs, notifying local utility staff of community events where EU promotions are going on, and getting involved in EU's schools program.

Figure 2-1. EU Marketing Activities of the EU Utilities

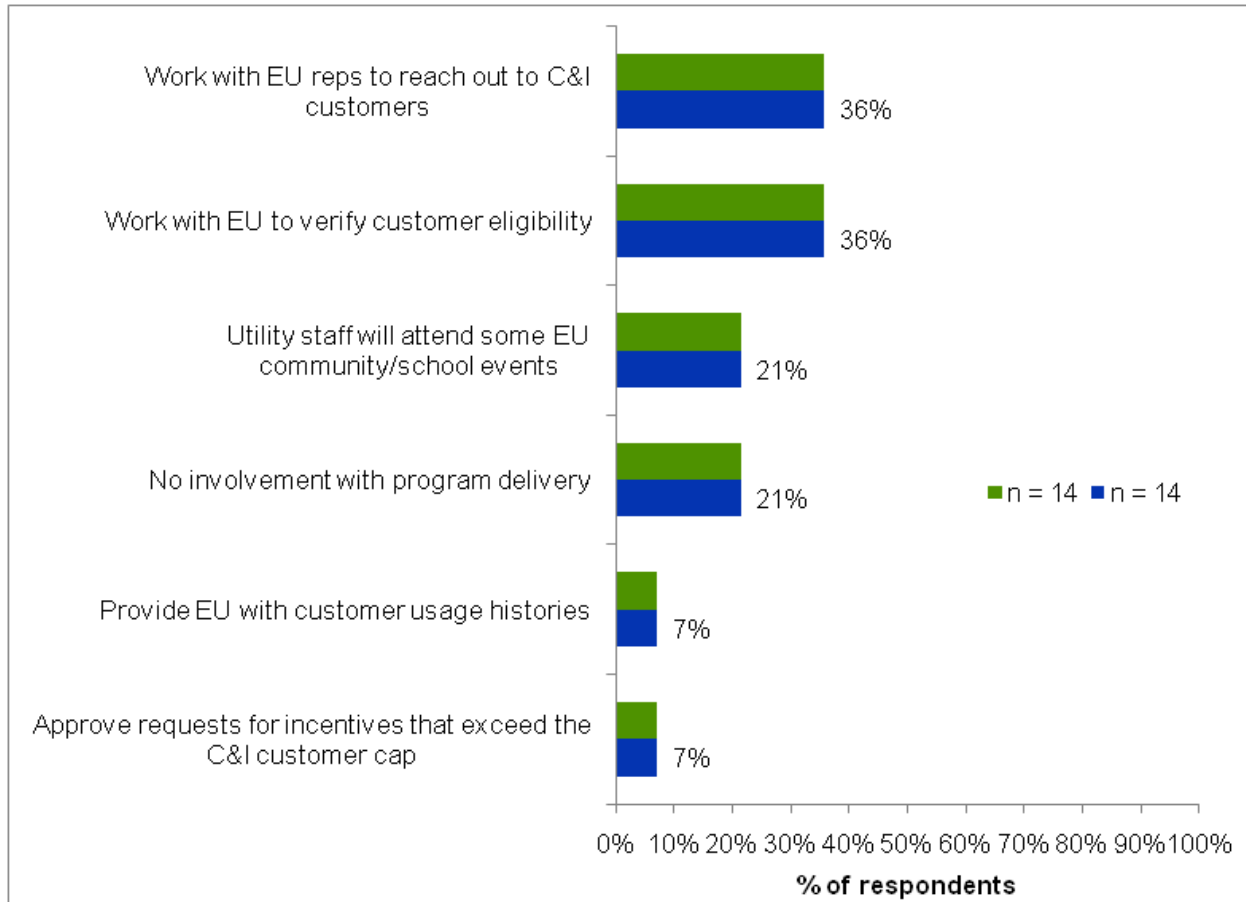


Note: Responses exceed 100% because multiple responses were accepted.

We also asked the utility representatives, whether they have been involved with assisting CLEAResult or their subcontractors with any aspects of delivering the EU programs in their service territories. Figure 2-2 shows that about a fifth (21%) of the respondents did not assist EU in program delivery and that the most common types of assistance included working with EU representatives to reach out to C&I customers and working with EU to verify customer eligibility for the EU programs.



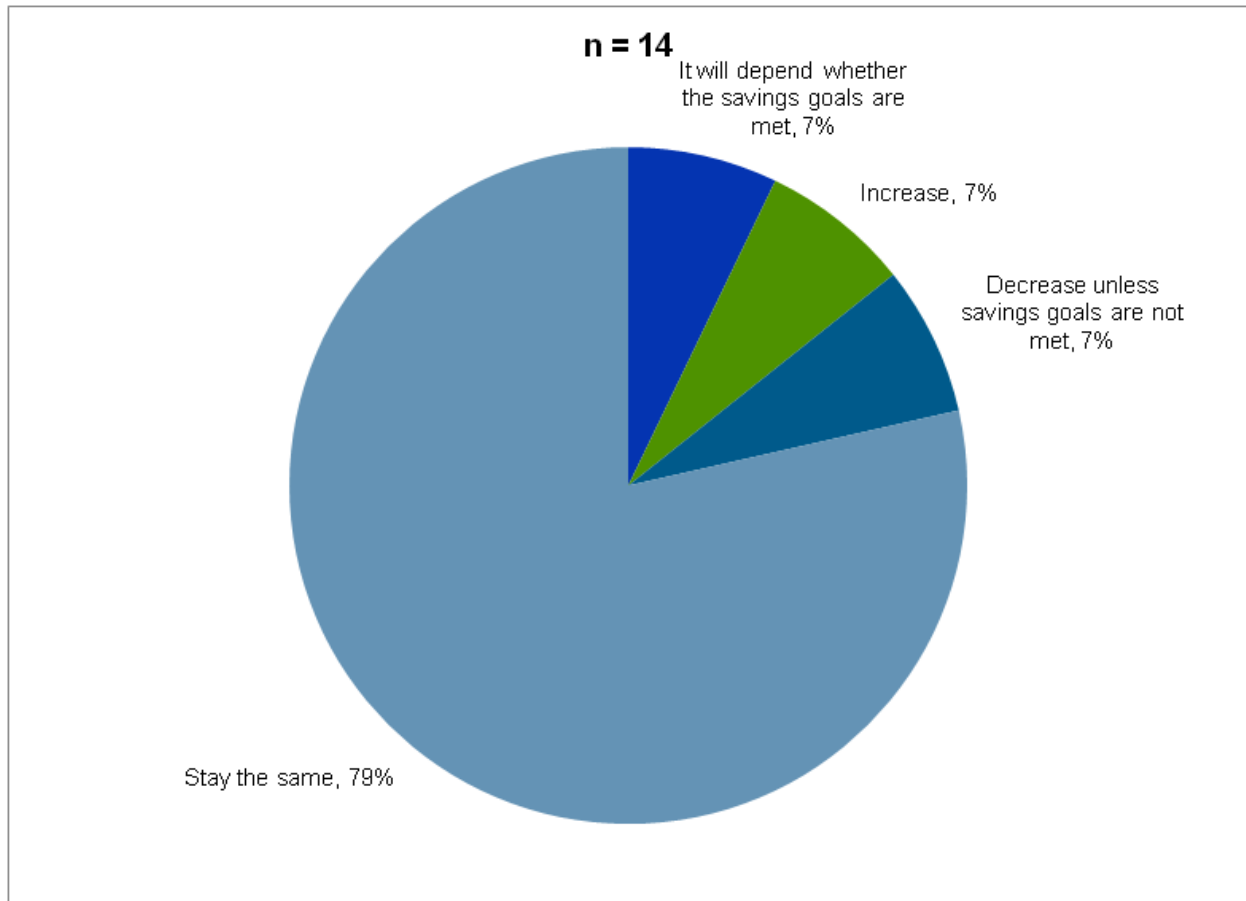
Figure 2-2. EU Program Delivery Assistance Provided by EU Utilities and WPPI Reps



Note: Responses exceed 100% because multiple responses were accepted.

We also asked the MCAAA utility representatives whether going forward they expected their level of involvement with EU to increase, decrease, or stay about the same. Figure 2-3 shows that the large majority of utility and WPPI representatives said that their level of involvement would stay about the same. One respondent said that their level of involvement would increase and two others said their level of involvement might change if the energy savings goals were not met.

Figure 2-3. Whether Utility Reps Expect Their Level of Involvement with EU Program Marketing/Delivery to Change



The utility representatives gave a variety of explanations for their expectations that their levels of involvement with EU would stay the same. Some representative examples of these explanations include:

- Satisfaction with how the EU programs are going:
 - “Again, I see the programs are functioning well. Things are going well. I don’t see where we would need to either intervene to correct a problem nor do I see the things going away where we’d have to... just walk away from it. So that’s why ... we’ll stay about the same.”
 - “Efficiency UNITED does a good job. You know, they were hired for that particular purpose, and it seems to be working out.”
- Not having the staffing resources to do more:



- “Well, I guess it would be, it’s typically the availability of staff. Right now, as the economy has been, we’re kind of limited as far as staff that I have available out in ... the front desk. So it’s kind of like ... if I had more staff available, I’d probably put a little more time into it, but I can only do so much. [The other staff] have to do their other daily work too.”
- “We don’t have a large presence on the ground there (their service territory).”
- *Not liking the state requirements to fund the EU programs:* “I suppose if there were some reason for us to be involved ... we might be. I mean, right now, we have no incentive to be involved ... and I should preface it by saying we’re not, as a company, we’re not the world’s biggest fan of the legislation ... we don’t really like the legislation. That said, ... we think we’ve given CLEAResult and MCAAAA everything they’ve asked for. We are engaged in the process. But unless there was some reason for us to be more involved or if there were some advantage to us, ... there’s just really not a reason that we’re aware of for us to be involved.”

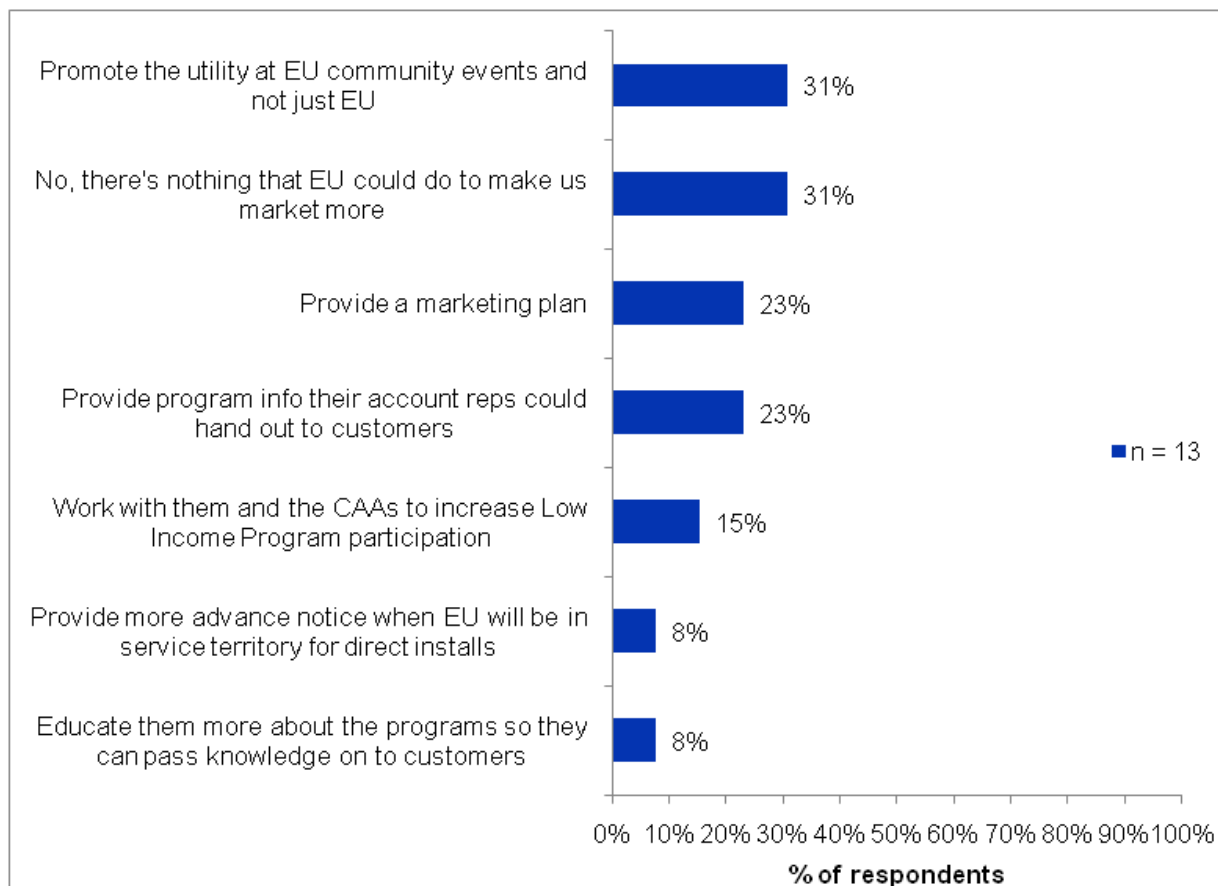
The one utility representative who said that their level of involvement would increase explained that she had recently been added to the utility staff and that EU was one of her areas of responsibility.

“[Involvement with EU] might increase a little bit because ... before I got involved, we weren't very involved. And the idea was that we were going to get more involved, so it might increase a little bit.”

We asked the utility and WPPI representatives what factors might encourage them to be more active in the marketing and delivery of the EU programs. A number of them mentioned the possibility that they would not meet the energy saving goals. A couple of the utility representatives expressed concern in particular about the EU Low Income Program not meeting goal and wondered if they might be able to help EU in some way.

We also asked them whether the EU programs could do anything – such as provide them with program brochures or other marketing materials – that would encourage them to do more marketing for the program. Almost a third (31%) of the respondents said there was nothing that the EU programs could do to get them to market more. Of those providing suggestions, the most common ones were for EU to promote the utilities (and not just EU) at the community events (31% of respondents), to provide a marketing plan (23%), and to provide program information such as brochures that the utility account representatives could hand out to customers. Figure 2-4 provides the full range of responses.

Figure 2-4. What EU Could Do to Encourage the Utility Reps to Market the EU Programs More



Note: Responses exceed 100% because multiple responses were accepted.

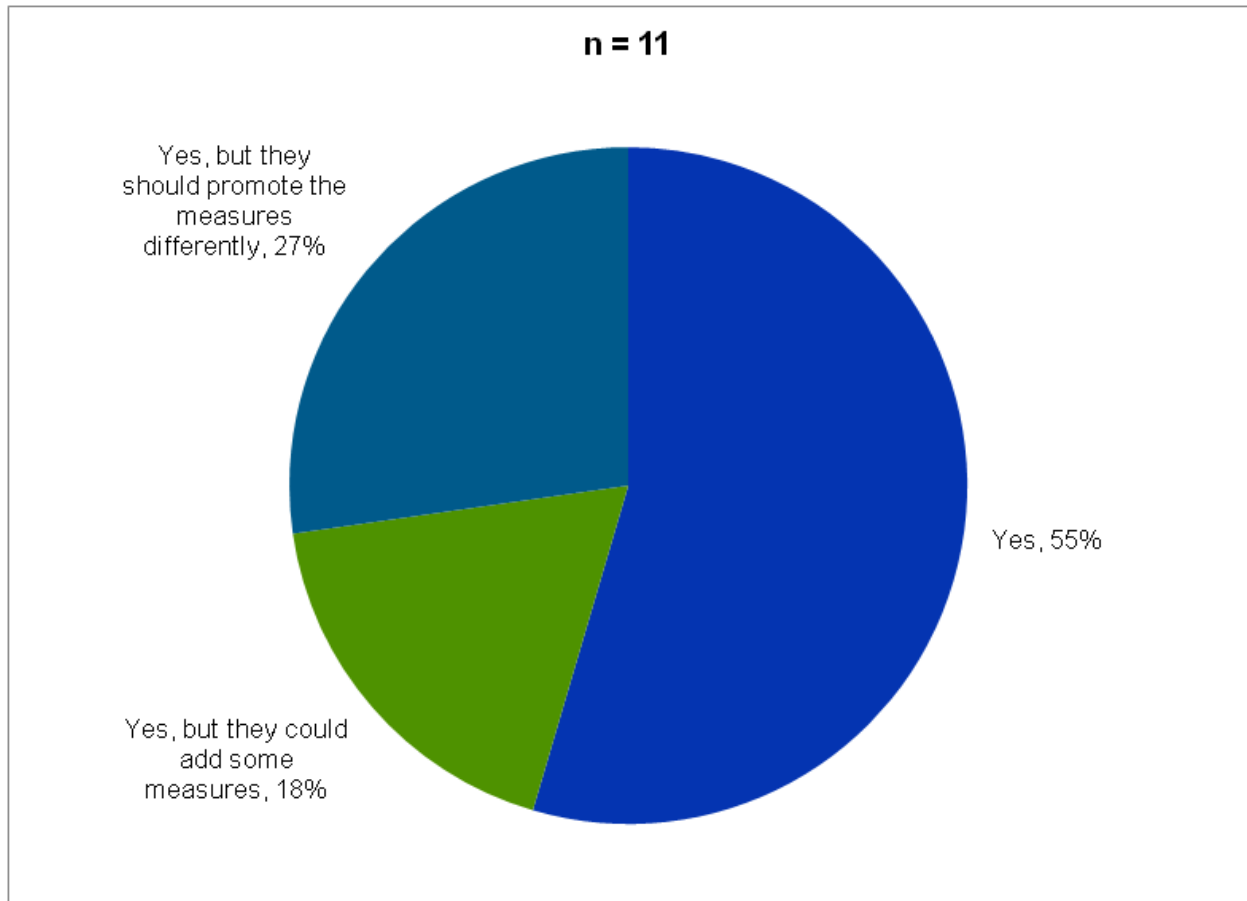
2.1.2 MCAAA Utility Assessment of Program Design, Marketing and Delivery

We also asked the utility representatives and the two WPPI representatives to assess the design of the EU programs, their marketing and outreach activities, and the program delivery. The following subsections summarize the responses of these utility representatives on these topics.

2.1.2.1 Assessing the EU Program Design

We asked the utility representatives whether they thought the EU programs were currently offering the right mix of energy-efficient technologies. Figure 2-5 shows that slightly more than half (55%) gave an unqualified “yes” to this question, while the remainder either thought some energy-efficient measures should be added or that EU should change the emphasis on which measures it promoted.

Figure 2-5. Whether the Utility Reps Thought the EU Programs Were Offering the Right Mix of EE Technologies



Some suggestions for adding measures to the program included:

- Recycling other equipment besides refrigerators/freezers such as air conditioners;
- Finding ways for people who are dependent on medical equipment (e.g., oxygen, dialysis) to save energy; and
- Offering customers a place where they could go online and figure out how much power their appliances were consuming.

Respondents who thought EU should promote differently the measures they are incenting had the following suggestions:

- More promotion of LED lighting;
- More promotion of energy-efficient lighting;
- More emphasis on building shell measures; and



- Greater promotion of C&I energy-efficient measures vs. residential measures.

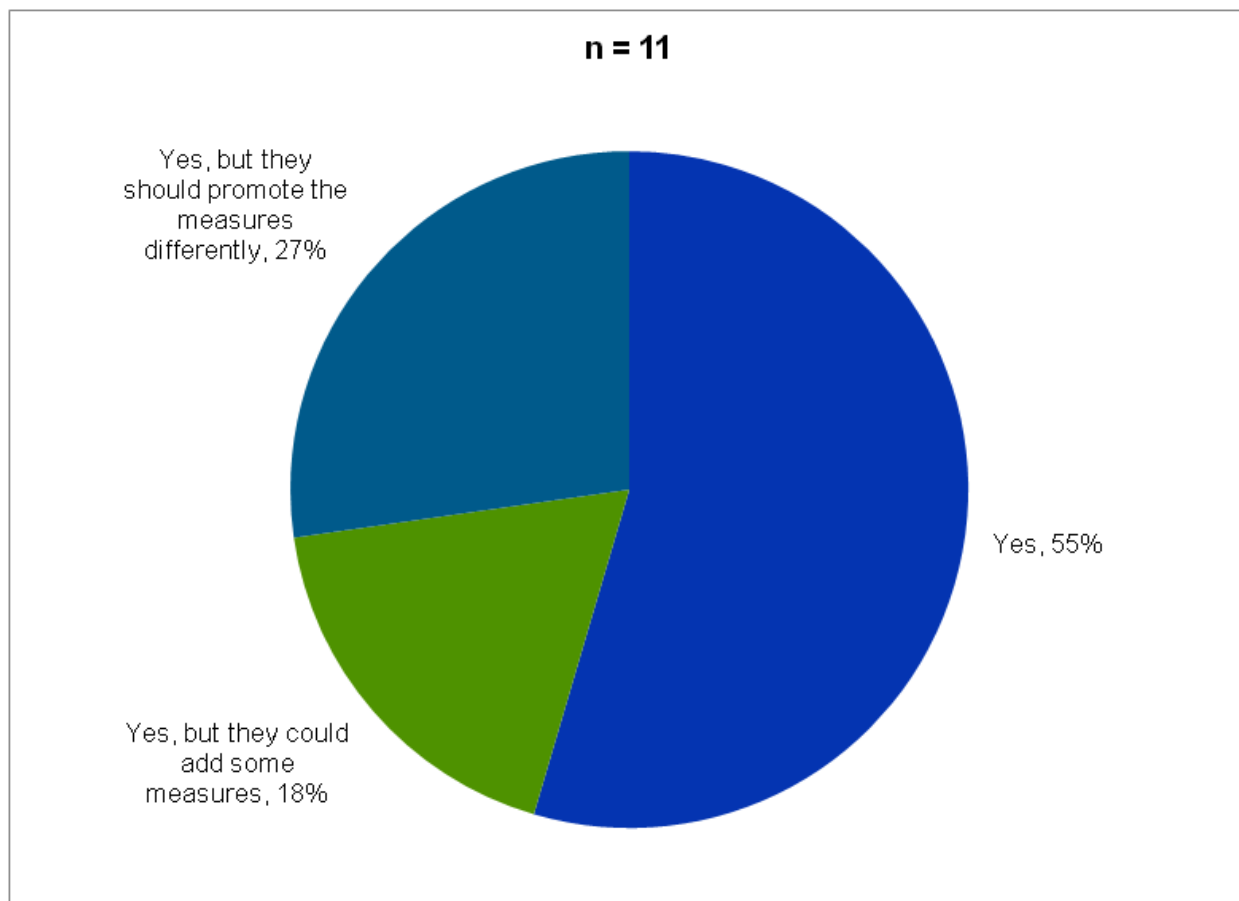
We also asked the utility representatives whether they thought that EU's current rebate levels were adequate to encourage the adoption of energy-efficient technologies by their customers. The large majority (70%) of respondents thought that the rebate levels were adequate (Figure 2-6).

Two respondents said the rebate levels were not adequate. One claimed that it was sometimes difficult to move C&I projects forward only with the incentives that the EU C&I Program was offering. He said:

When I'm working with the C&I reps with Efficiency UNITED ... once we figure out what the incentives are, if the customer looks at it and says, well, that's not enough for me to get a product moving, WPPI Energy offers energy-efficiency monies that we bump up and add extra incentives to the project.

The other respondent said that EU was spending too much on program implementation and not enough on financial incentives. "If we're required to have this program, I'd prefer more money go back to my customers in the form of cash rather than, again, implementation costs," he said. "... I have said openly I would prefer the incentives be bigger to our customers and reduce other payments that aren't going directly into my customers' hands."

Figure 2-6. Whether the Utility Reps Thought the EU Rebate Levels Were Adequate to Encourage Adoption of EE Technologies



2.1.2.2 The Relative Effectiveness of Different Marketing Activities

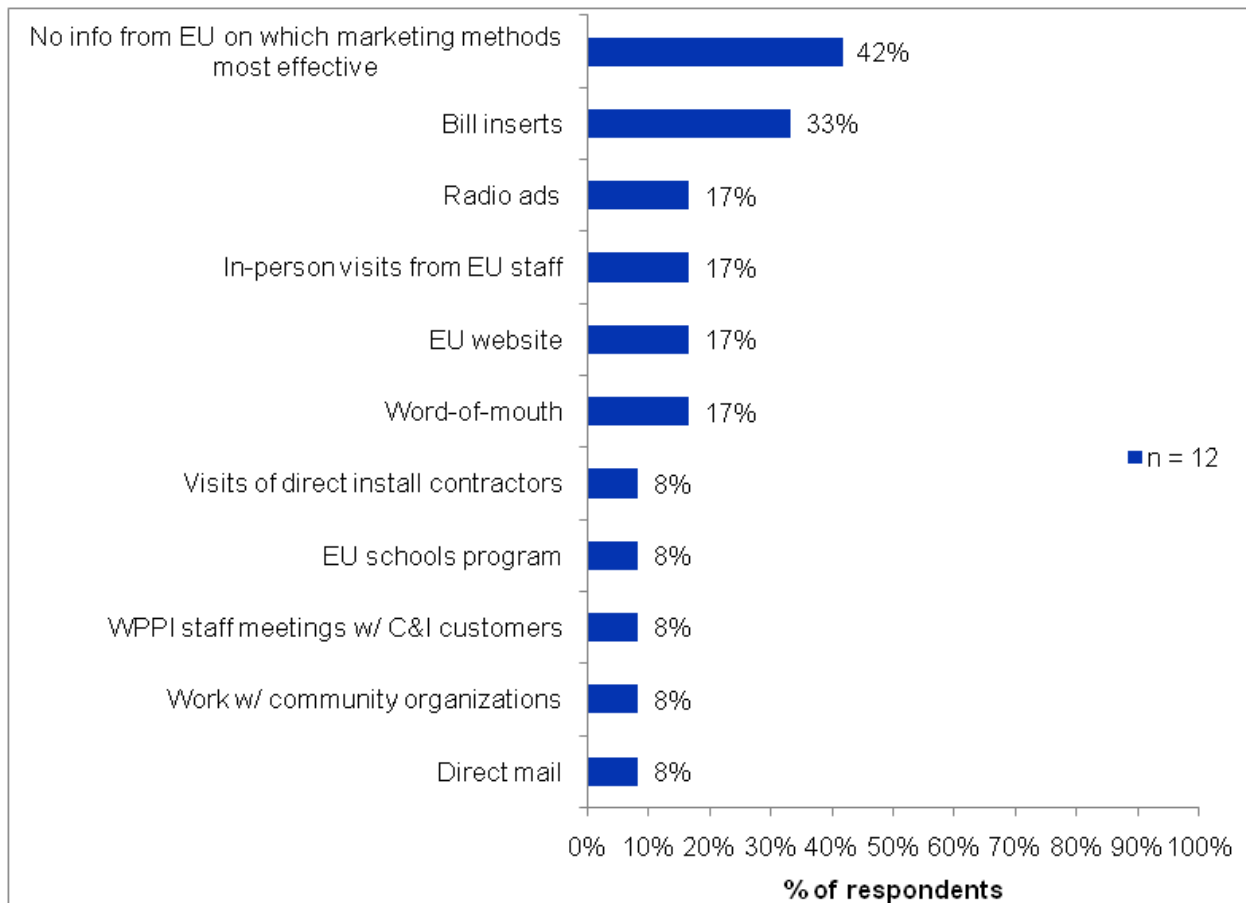
We asked the utility representatives about the relative effectiveness of EE marketing and outreach activities. We first asked them which marketing and outreach activities they deemed to have been most effective. The most common response was that EU and the implementation contractor CLEAResult did not provide the respondents with information that would allow them to judge the relative effectiveness of the various marketing methods. “I don’t really know,” said one of these respondents. “...I get those reports ... and those kind of let us know how they’re doing against goal and things like that. But I don’t really know from their perspective which of their marketing outreaches has been effective compared to others.”

Among those respondents who were willing to identify which marketing methods were most effective, the most common response was the billing insert (33% of respondents). Radio ads, in-person visits from EU



staff, the EU website, and word-of-mouth were each identified by two different utility representatives. Figure 2-7 shows all the responses.

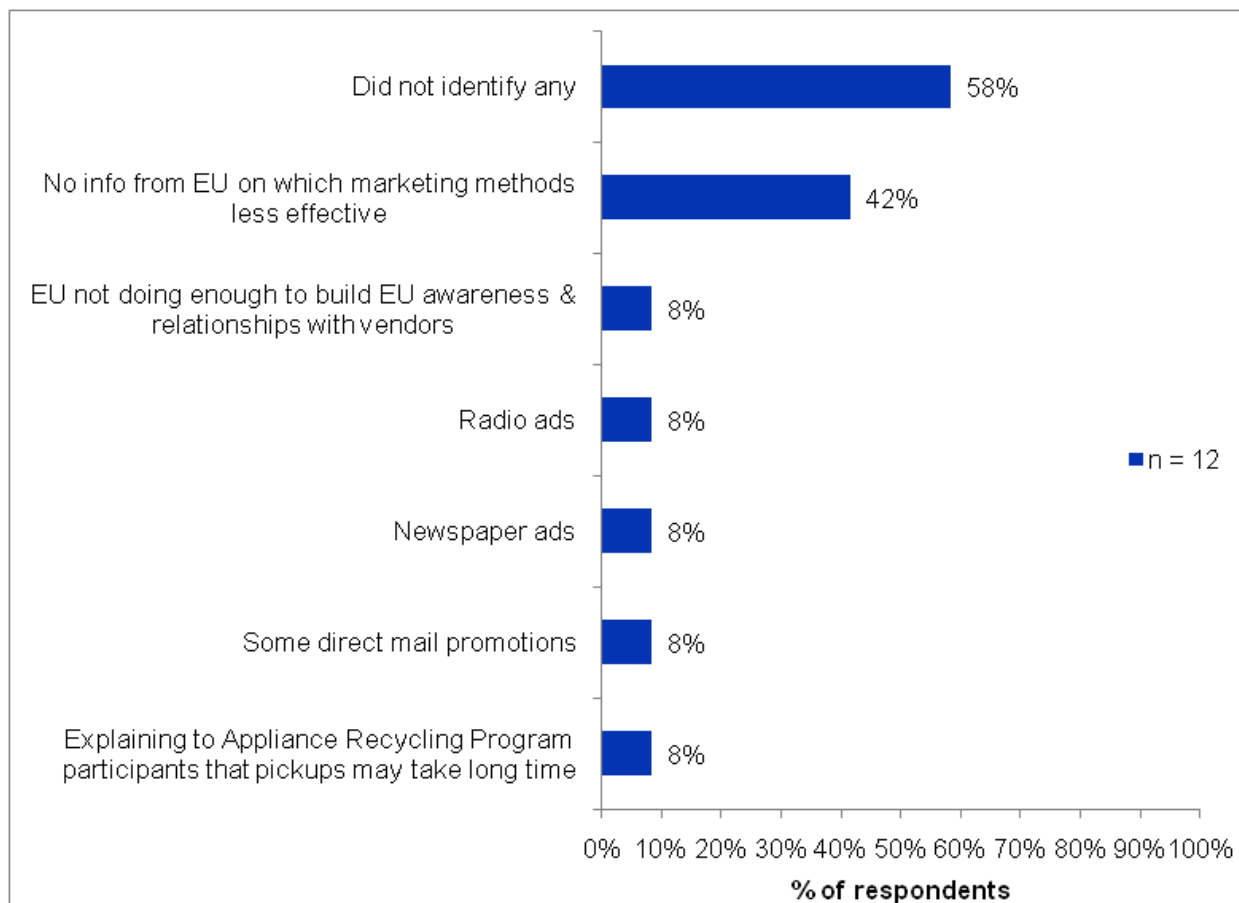
Figure 2-7. Which EU Marketing/Outreach Activities Have Been Most Effective According to Utility Reps



Note: Responses exceed 100% because multiple responses were accepted.

We also asked the utility and WPPI representatives which EU marketing and outreach activities have been less effective. Figure 2-8 shows that nearly all the utility representatives did not identify less-effective methods, with many making the point noted above – that EU does not provide them with information on which marketing activities are more/less effective than others.

Figure 2-8. Which EU Marketing/Outreach Activities Have Been Less Effective According to Utility Reps



Note: Responses exceed 100% because multiple responses were accepted.

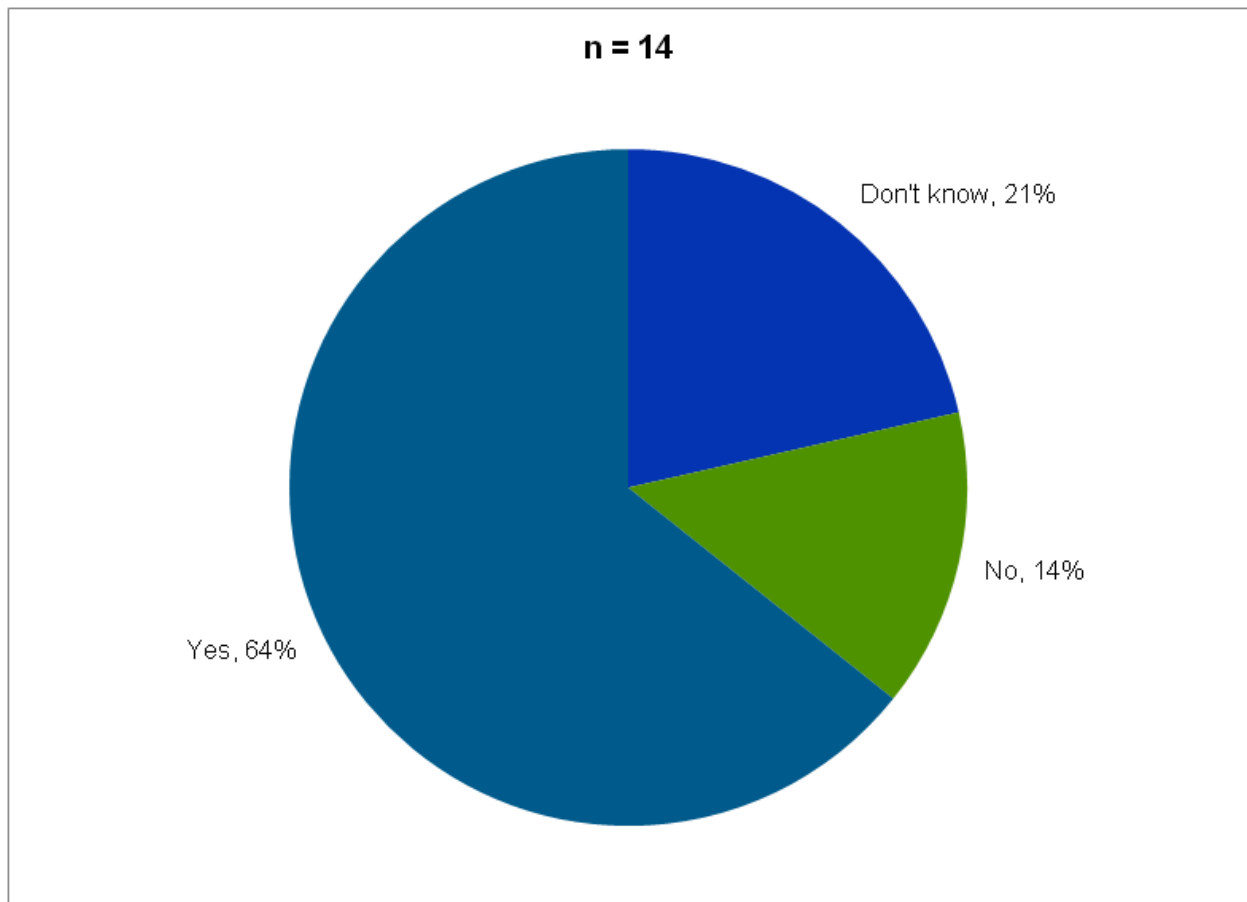
2.1.2.3 The Allocation of Marketing Resources

We asked the utility and WPPI representatives whether CLEAResult and its subcontractors were spending an appropriate amount of resources on marketing and outreach for the EU programs. Figure 2-9 shows that almost two-thirds (64%) of the respondents said that an appropriate amount of resources was being spent.

Of the two respondents who thought that an appropriate amount was not being spent, one thought CLEAResult and its subcontractors were spending too little. “We should push advertising a little more here up in the UP to make people aware of what we have,” said the first respondent. “I don’t think we advertise enough up here. I don’t think people have like a true understanding of what Efficiency UNITED is all about.”

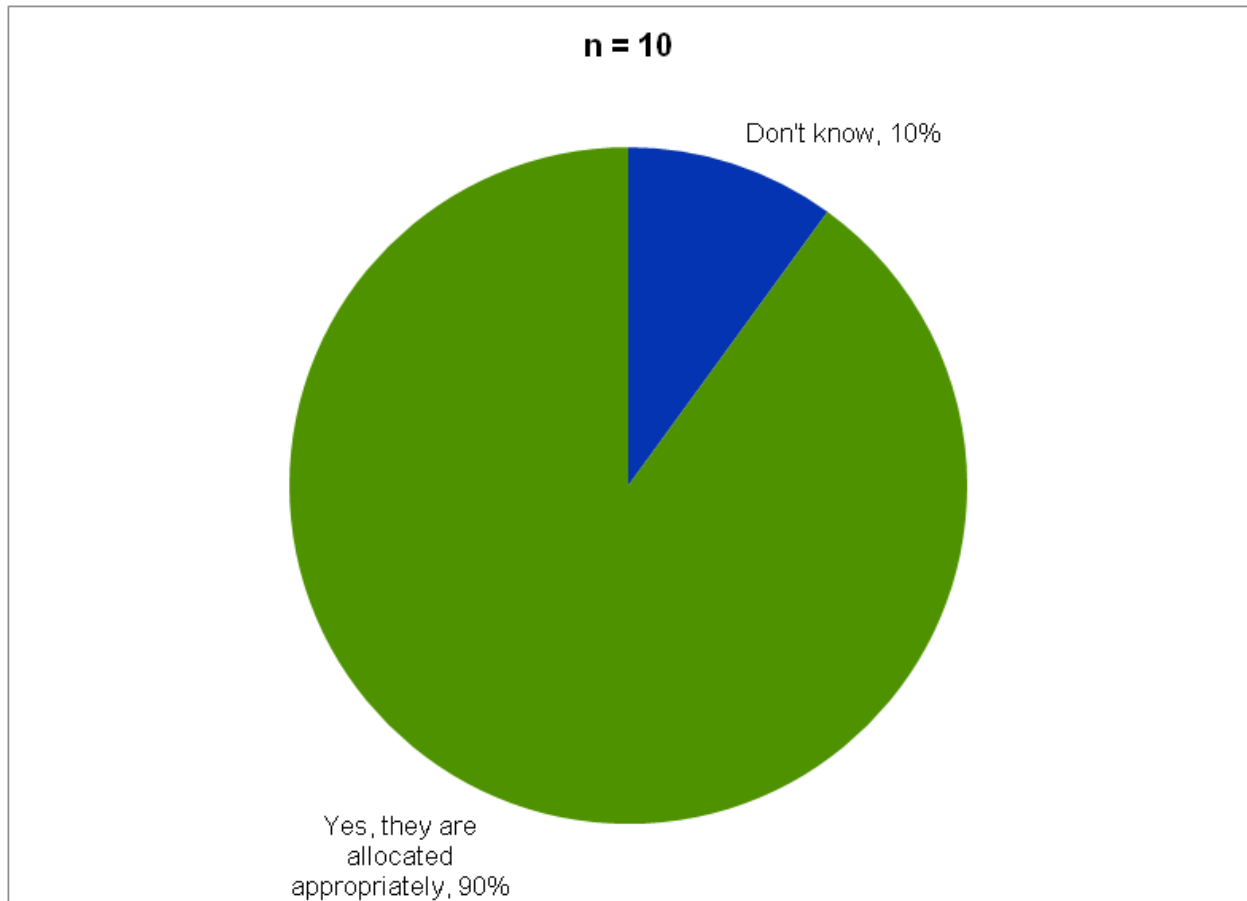
In contrast, the other respondent thought CLEAResult and its subcontractors were spending too much on marketing. The representative claimed that the municipal utilities in general were unhappy that so much money was being spent on marketing – especially expensive radio and newspaper ads – and that funding the smaller utilities to talk to their customers on a one-to-one basis would produce better results.

Figure 2-9. Whether CLEAResult and Subcontractors Are Spending an Appropriate Amount of Resources on EU Marketing/Outreach According to Utility Reps



We also asked the utility and WPPI representatives whether marketing and outreach responsibilities are allocated appropriately between CLEAResult and the utilities. The respondents were nearly unanimous in saying that the marketing responsibilities were properly allocated (Figure 2-10).

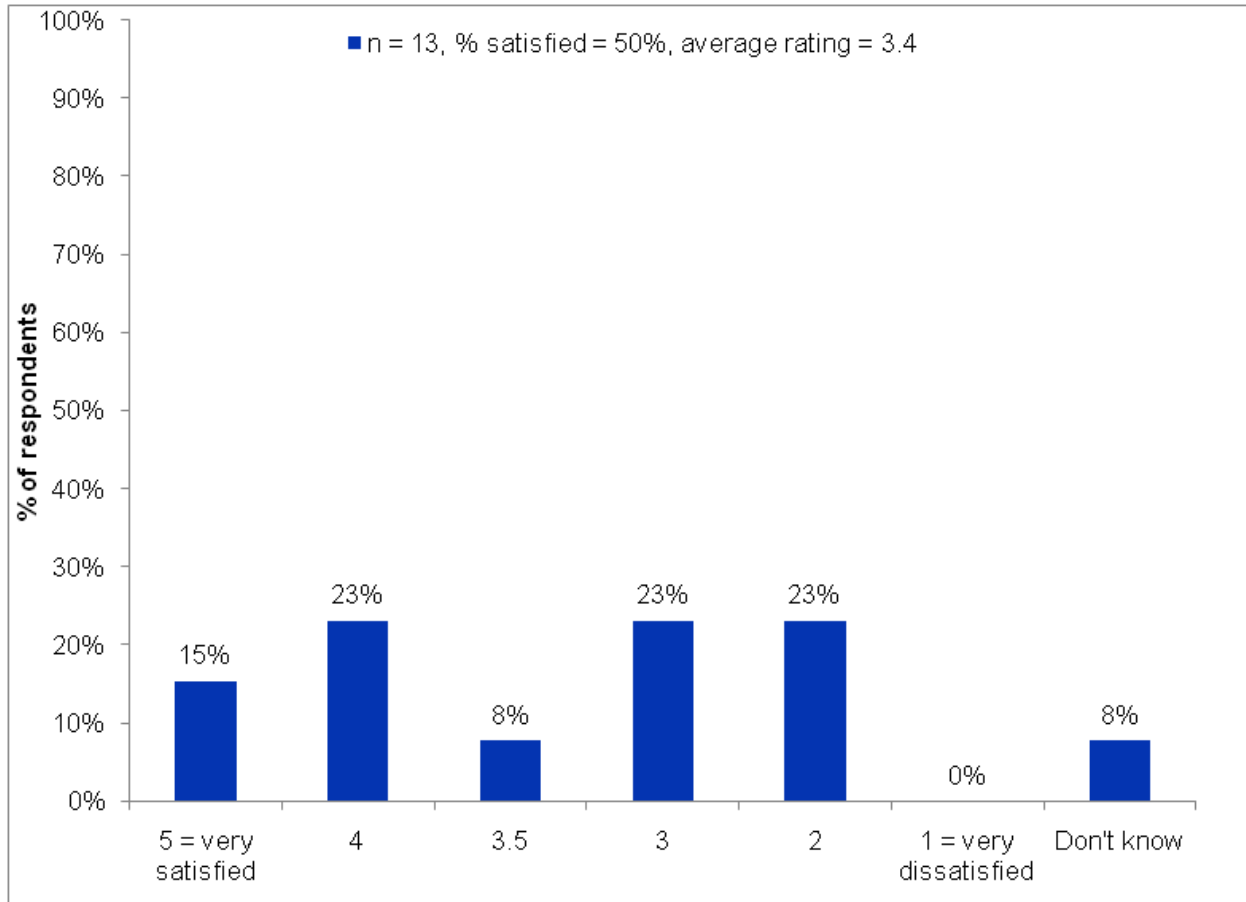
Figure 2-10. Whether Marketing/Outreach Responsibilities Are Allocated Appropriately Between CLEAResult and the Utilities According to Utility Reps



2.1.2.4 Satisfaction with EU Marketing/Outreach

We asked the utility and WPPI representatives to rate their satisfaction with the EU marketing and outreach activities. We told them to use a five-point satisfaction scale where five indicated “very satisfied” and one indicated “very dissatisfied.” Figure 2-11 shows that only half of the utility representatives who provided satisfaction ratings were satisfied (greater than a 3 satisfaction rate) with the EU marketing/outreach activities. The average satisfaction rating was 3.4.

Figure 2-11. Utility Rep Satisfaction with EU Marketing/Outreach Activities



The following are some of the explanations that utility representatives provided for why they gave satisfaction ratings of three or less:

- "It's not under, but it's not exceptional."
- "Just because I think we could do more to get the customers involved and just help them understand the whole efficiency [concept]."
- "We haven't been really contacted yet to kind of coordinate better with them on their communication schedule."
- "Too much money spent. Need it in incentives and not on advertising."



2.1.2.5 Satisfaction with EU Program Processes

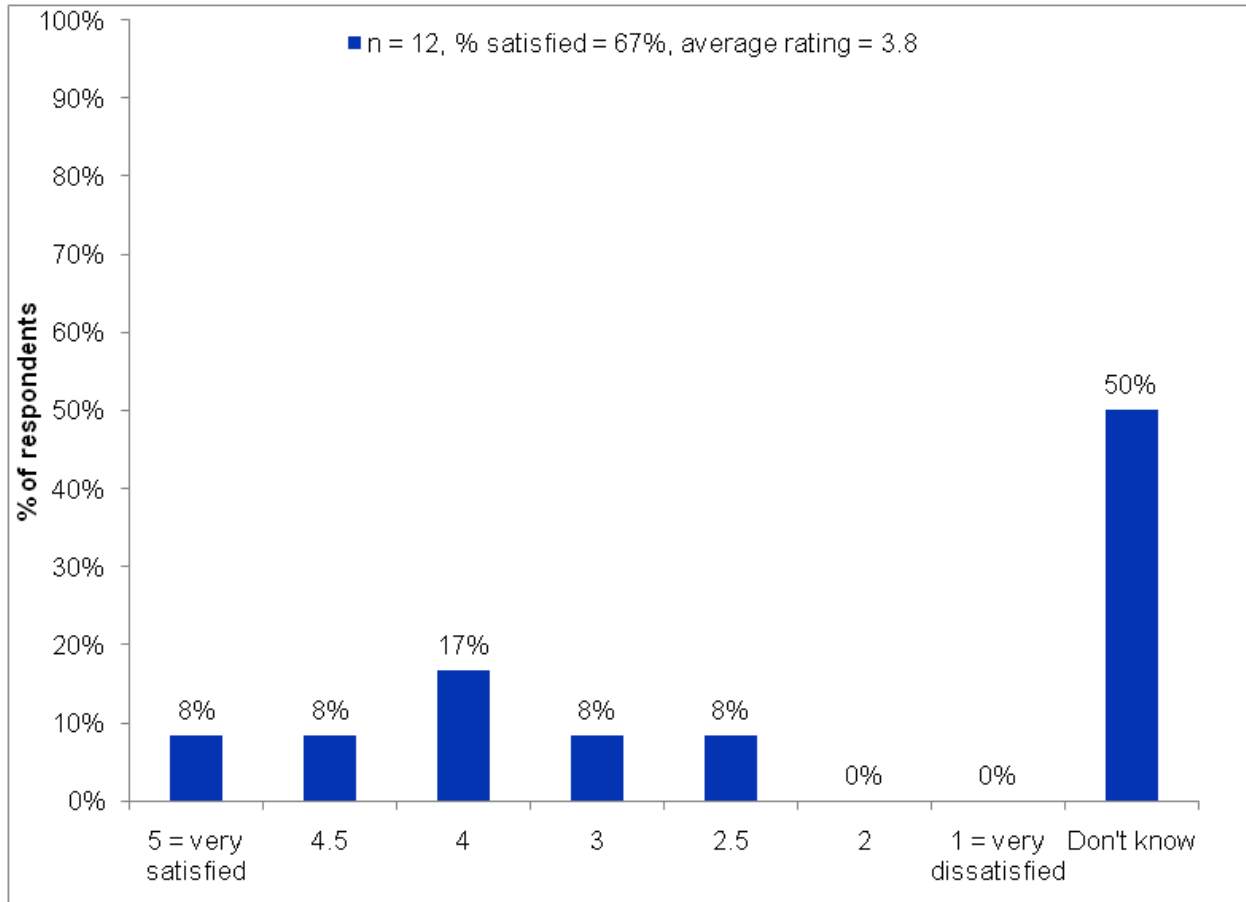
In addition to asking the utility representatives how satisfied they were with the EU marketing activities, we also asked them how satisfied they were with program processes such as checking customers for EU eligibility, processing rebate applications, and making rebate payments. When they were asked how satisfied they were with EU's efforts to check the eligibility of their customers for program services or rebates, half of the respondents did not consider themselves familiar enough with this process to provide a satisfaction rating (Figure 2-12). However, two thirds of those who provided satisfaction ratings for this process were satisfied with it for an average satisfaction rating of 3.8.

The two respondents who gave satisfaction ratings of three or lower had the following comments

- “I think the hoops that the customers have to jump through to be eligible for the programs, it makes it difficult because of the rules set by Public Act 295. I have dissatisfaction with the public act, not how CLEAResult is actually running with it.”
- “[EU staff are] out in the community, and they're having these kiosk-type locations set up, so customers come and sign up to purchase material, and then they can't find the one in the system. So our level of activity has continued to increase with regards to validating customers.”



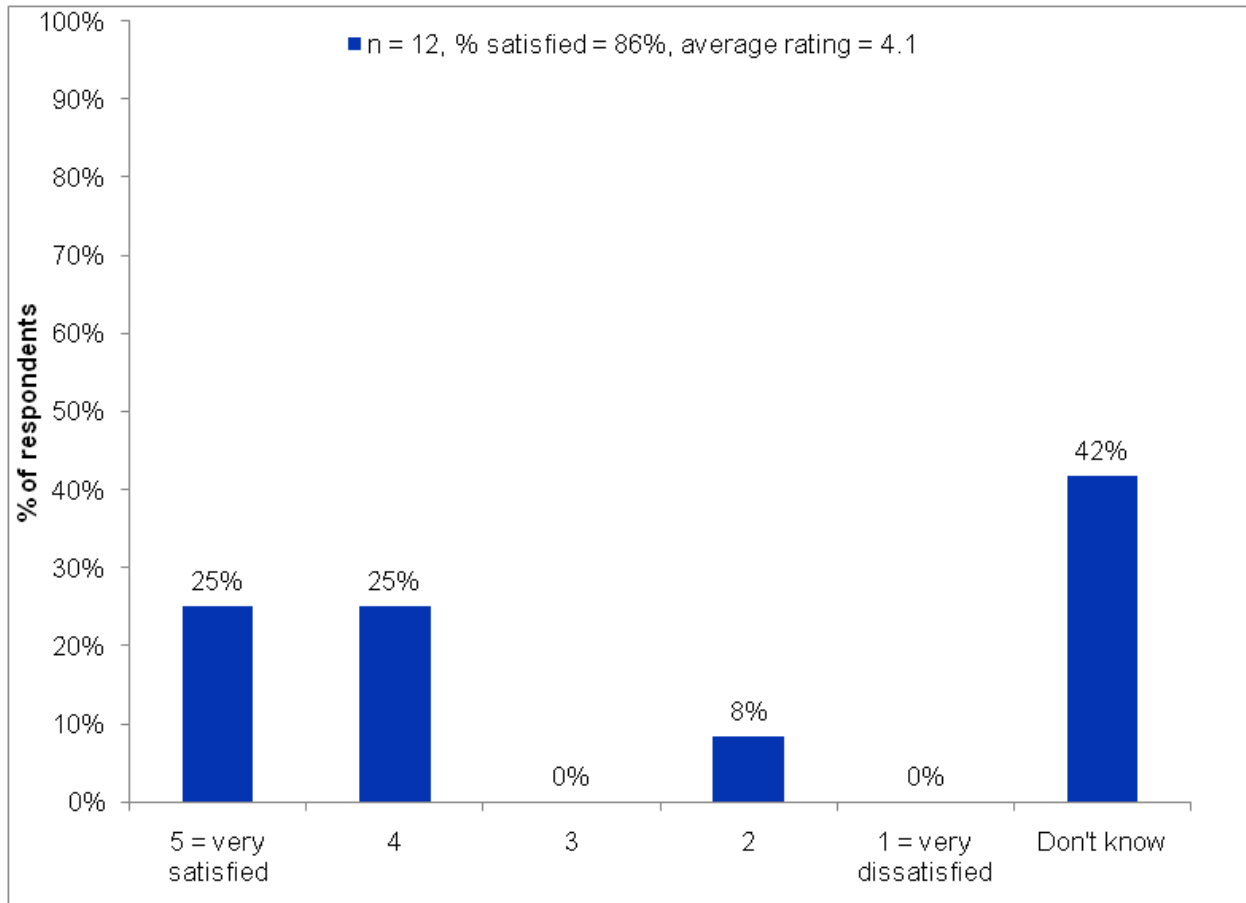
Figure 2-12. Utility Rep Satisfaction with EU Customer Eligibility Verification Process



We asked the utility representatives how satisfied they were with EU’s processing of rebate applications for their customers. Once again a high percentage (42%) of respondents did not consider themselves familiar enough with this process to provide a satisfaction rating (Figure 2-13). However, those who were familiar enough to provide a satisfaction rating were generally more satisfied with the rebate application processing than they had been with the customer verification process. Eighty-six percent of those who provided satisfaction ratings were satisfied with an average satisfaction rating of 4.1. The one respondent who was less-than-satisfied said there was “too much back and forth on the paperwork” and that the process “was not nearly timely enough.”



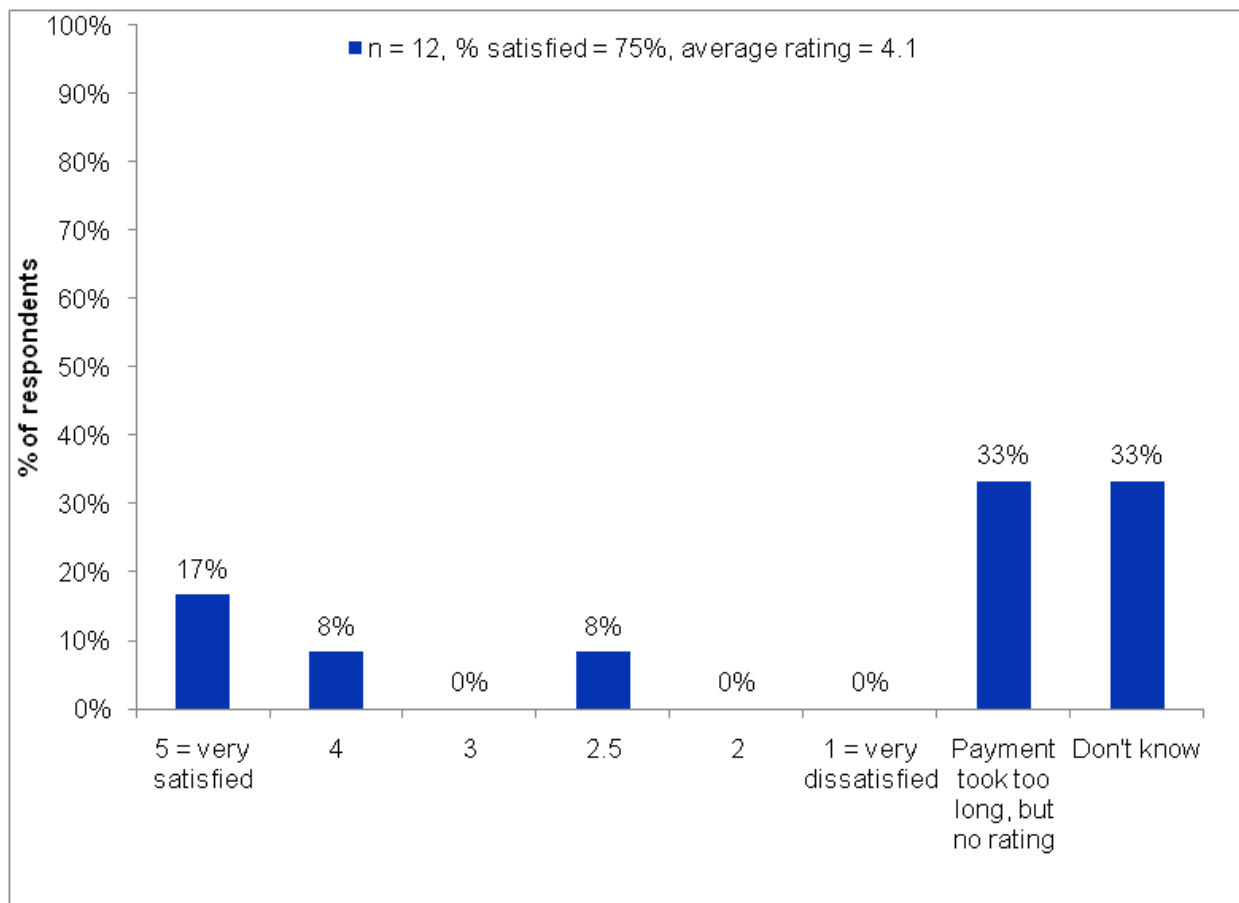
Figure 2-13. Utility Rep Satisfaction with the EU Rebate Application Processing



Finally we asked the utility representatives how satisfied they were with EU’s payment of the program financial incentives. In this case only a third of the respondents provided satisfaction ratings (Figure 2-14) with an average satisfaction rating of 4.1. Another third of the respondents said the payments took too long but did not provide a satisfaction rating. The final third said they were not familiar enough with the program to provide a satisfaction rating.



Figure 2-14. Utility Rep Satisfaction with the EU Payment of Financial Incentives



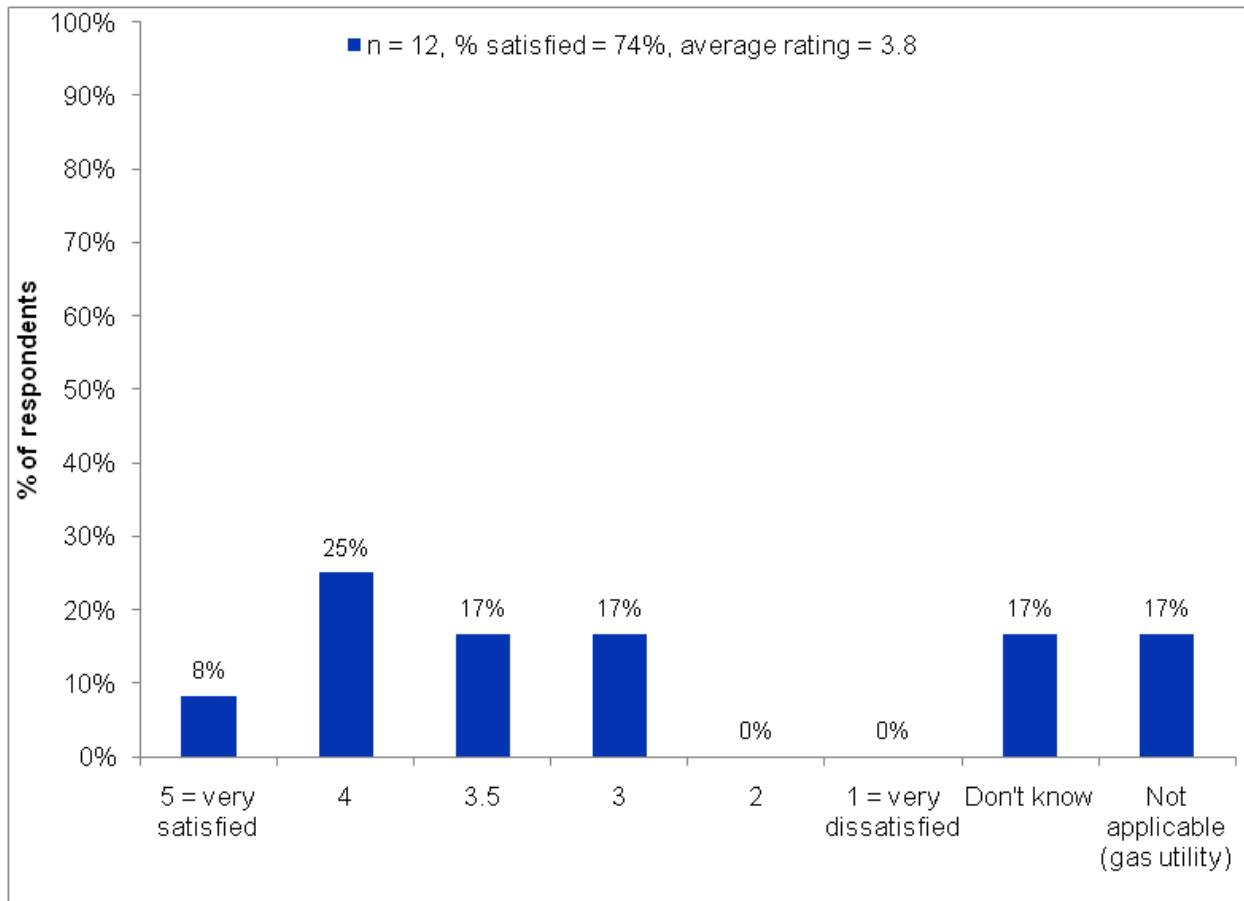
2.1.2.6 Satisfaction with EU Programs

Our 2011 interviews with the MCAA utility representatives had found that they were only generally familiar with two EU programs – the Online/Onsite Weatherization Program (then called the Audit and Weatherization Program now called the Home Performance Program) and the Appliance Recycling Program. So we asked the 2012 utility representatives how satisfied they were with these two programs.

Only three of the thirteen respondents said they were familiar enough with the Audit Program to provide satisfaction ratings for it. Two of these provided the Audit Program with a satisfaction rating of 3 and the other provided it with a satisfaction rating of 3.5 (actually 3-4, which we coded at the midpoint). The two respondents who provided ratings of 3 said that they had not reached their energy savings goals for this program and that participation levels could be higher. The respondent who provided the 3.5 rating expressed concern that the online audit component of the program was inaccessible to the many customers in their service territory who did not have Internet access.

More of the utility representatives were familiar with the Appliance Recycling Program. Figure 2-15 shows that nearly three quarters (74%) of those providing satisfaction ratings were satisfied with the program for an average satisfaction rating of 3.8.

Figure 2-15. Utility Rep Satisfaction with the Appliance Recycling Program



One respondent who gave a satisfaction rating of three for the Appliance Recycling Program provided the following comment:

I think ... there were some misconceptions on the refrigerator pickup. Because we live in the UP, a lot of people were frustrated with leaving them outside, for them not to come pick it up for a couple of weeks or so and having someone 18 years old on it. ...I just think that was a little misleading for the customers. That's the only thing I heard people complaining about was the refrigerator recycling ... , I think they were just frustrated, and they just said it's not worth the money.



The other respondent who gave a satisfaction rating of three noted that the Appliance Recycling program in their service territory had not achieved its energy savings goal.

2.1.2.7 Satisfaction with EU as a Whole

We asked the utility representatives a number of questions getting at their assessment of EU as a whole, beyond particular design features, activities, processes, or programs. First we sought their assessment of the performance of CLEAResult, the primary implementation contractor for the EU program portfolio. Figure 2-16 shows that of those providing satisfaction ratings, half of the utility representatives were satisfied with CLEAResult's performance (4 or 5 rating) while the other half provided ratings of three.

The utility respondents had a lot of positive things to say about CLEAResult. Some of the positive feedback on CLEAResult's performance included:

- “They’ve improved tremendously over the past year.”
- “I like their staff. They’ve been good to work with ... They’re pretty motivated. They seem to ... really work well.”
- “Nice people. Working with a system that is poor, but nice people.”
- “I was impressed at the meeting with some of their new staff that they've got onboard. ... They certainly seem to be pretty engaged program leads, and I was impressed with their enthusiasm for the program and where they wanted to take it. It sounds like they were always looking for opportunities for improvement, so I was pretty impressed with them.”
- “They seem to make pretty good contact as far as with seeing how are things going, checking on that. Pretty much I get a call, I don’t know if it’s monthly, but it’s quite often that they will call and ask if there’s any questions or concerns what’s going on, that kind of situation.”

The five utility representatives who gave satisfaction ratings of three indicated either dissatisfaction with CLEAResult not attaining energy savings goals, dissatisfaction with CLEAResult's lack of a marketing plan and general coordination of marketing efforts with utilities, or a desire to have more transparency as to where CLEAResult is spending program funds.



Figure 2-16: Utility Rep Satisfaction with CLEAResult

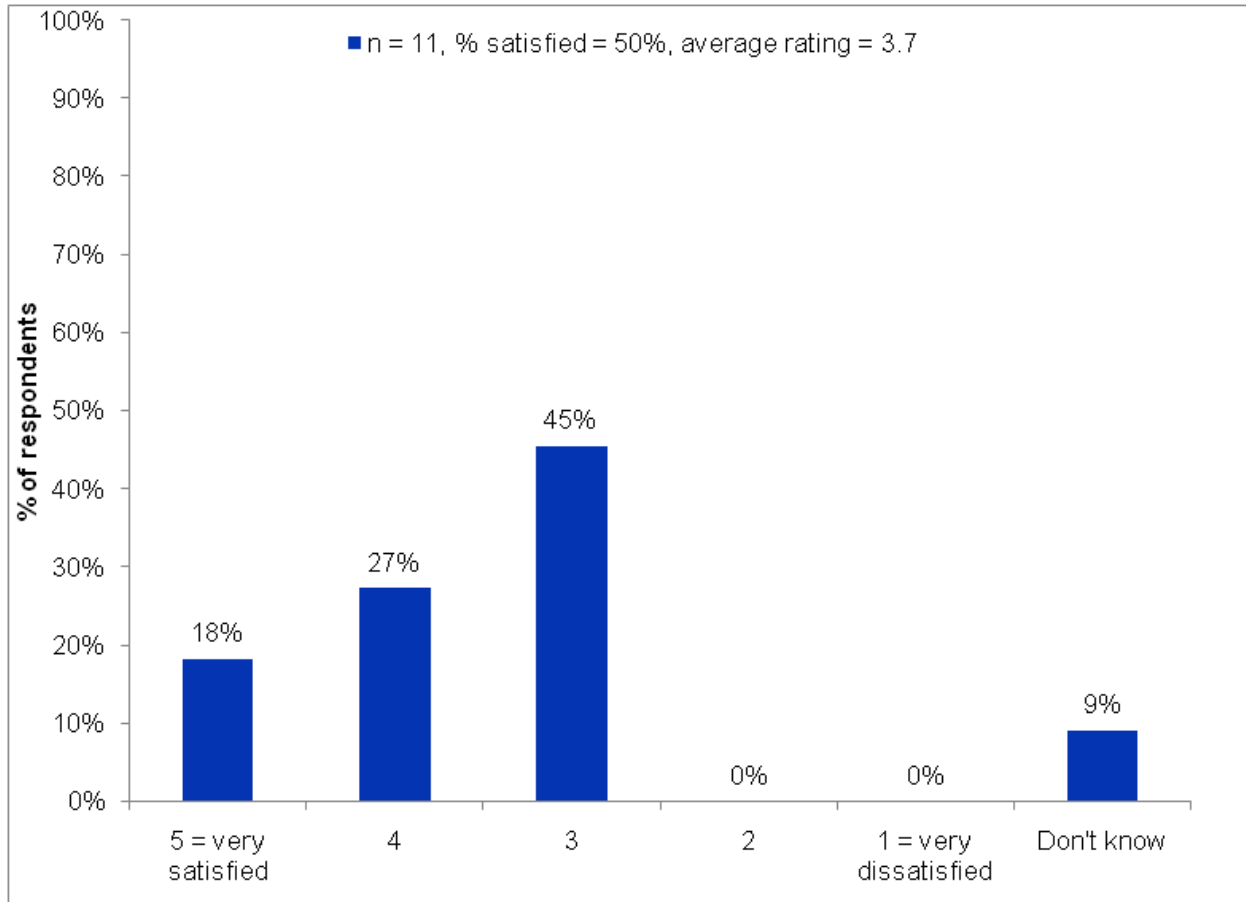
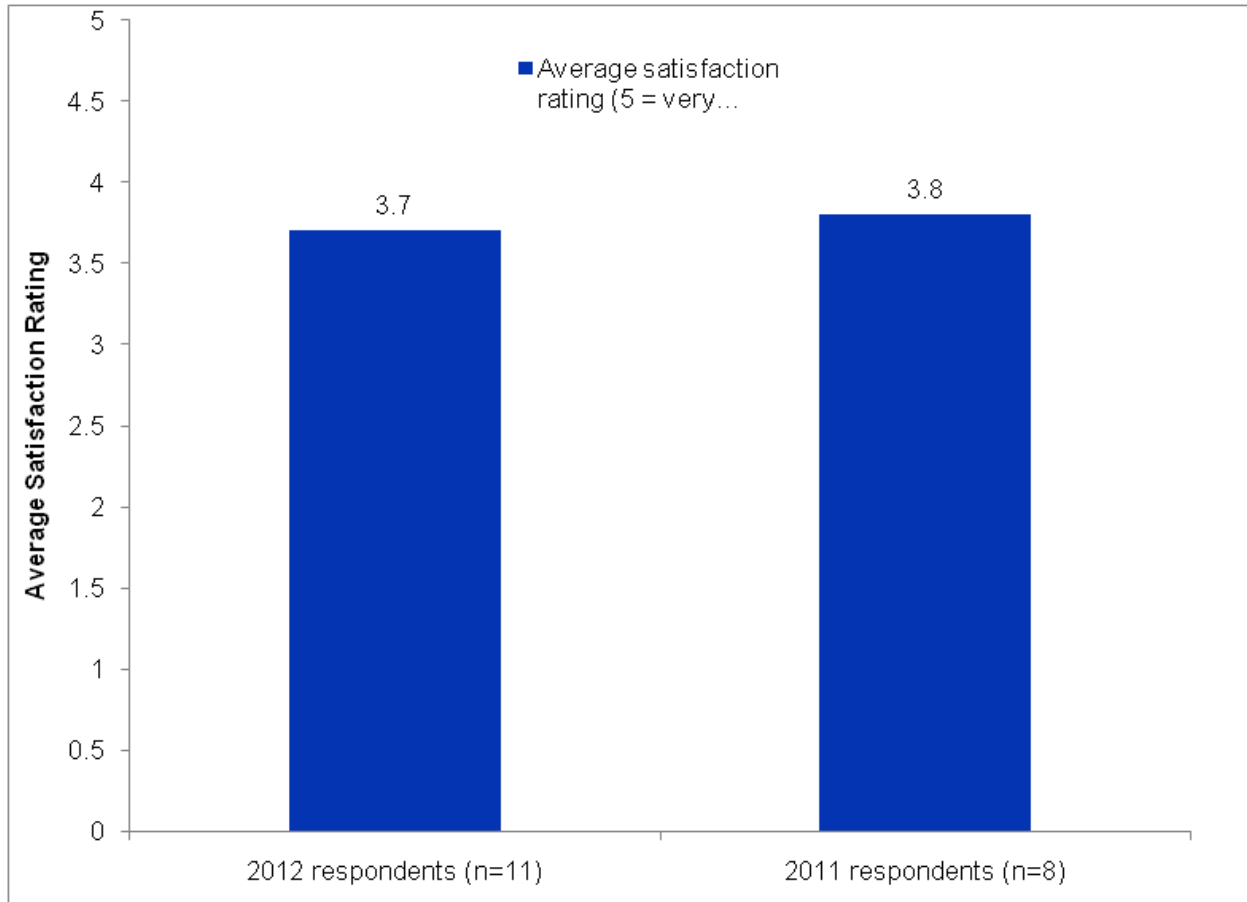


Figure 2-17 compares the average utility satisfaction ratings with CLEAResult in 2012 with those we gathered in 2011.⁷ It shows that the two satisfaction ratings are nearly identical. The reasons for dissatisfaction with CLEAResult were fairly similar from year to year. The 2011 respondents who were less than satisfied, like their 2012 counterparts, were unhappy because savings goals had not been attained and because they believed that CLEAResult should provide more transparency on where it was spending program funds.

⁷ In 2011 the MCAA utility representatives were generally less familiar with the EU programs than they were in 2012 and therefore less willing than the 2012 respondents to provide satisfaction ratings for the various EU programs, processes, etc. For this reason we chose to only do 2012 vs. 2011 comparisons when there was a critical mass of respondents from 2011.

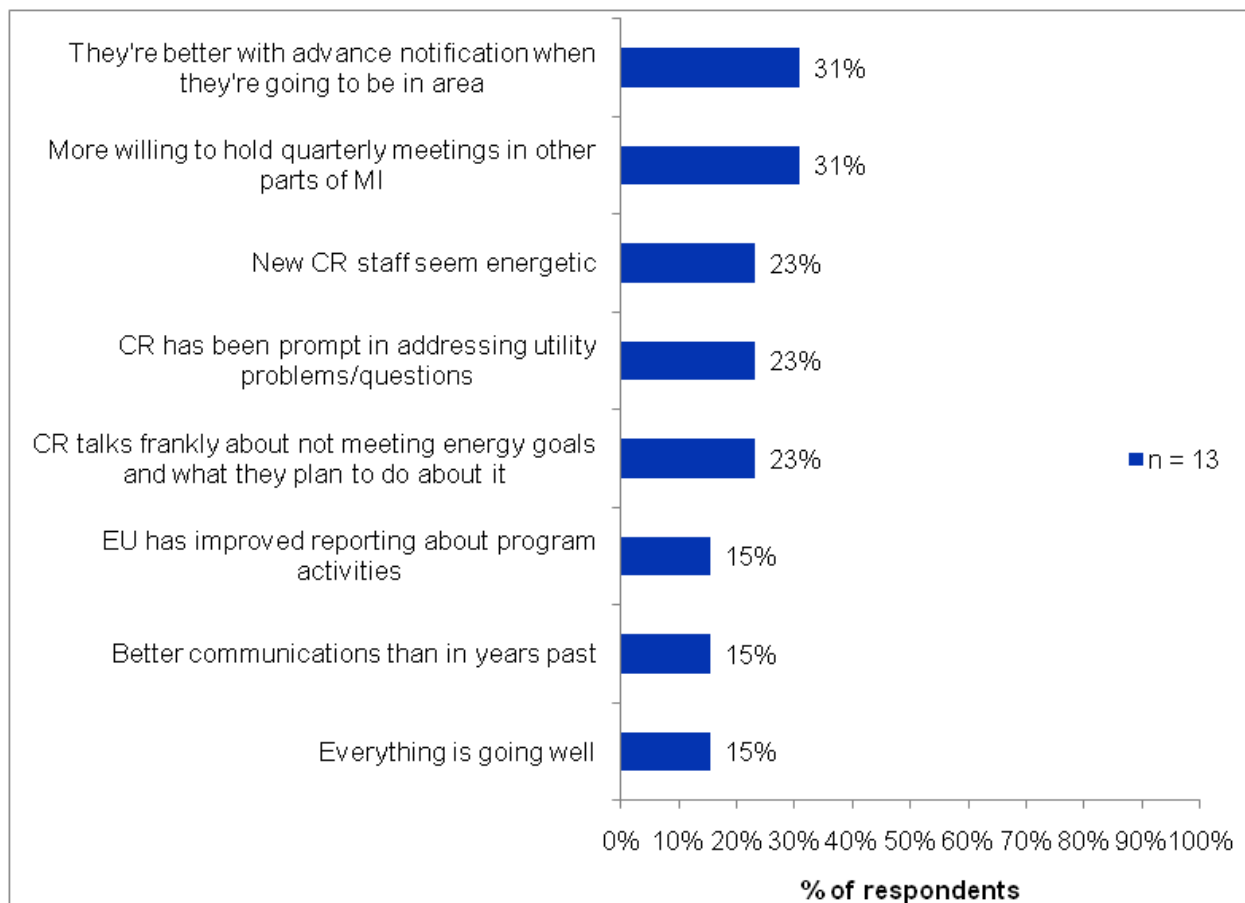


Figure 2-17. Utility Satisfaction with CLEAResult, 2012 vs. 2011



We also asked the utility representatives what aspects of the delivery and administration of the EU programs were going well. Figure 2-18 shows the responses to this question that were given by more than one respondent.

Figure 2-18. Aspects of EU That Utility Reps Thought Were Going Well (Multiple Responses Only)



Note: Responses exceed 100% because multiple responses were accepted. CR is an abbreviation for CLEAResult.

In addition, there were also a number of other positive aspects of EU which were each identified by only a single respondent. These included:

- The energy kits;
- The fact that the energy savings goals are being met;
- EU is providing information about their pilot programs on their website;
- The community events;
- The schools program;
- CLEAResult is doing a good job working with local retailers;
- The EU website; and
- The EU application forms are getting easier to use.

We also asked the utility representatives about areas of EU administration and delivery where there is room for improvement. Figure 2-19 shows the areas for improvement that were suggested by multiple

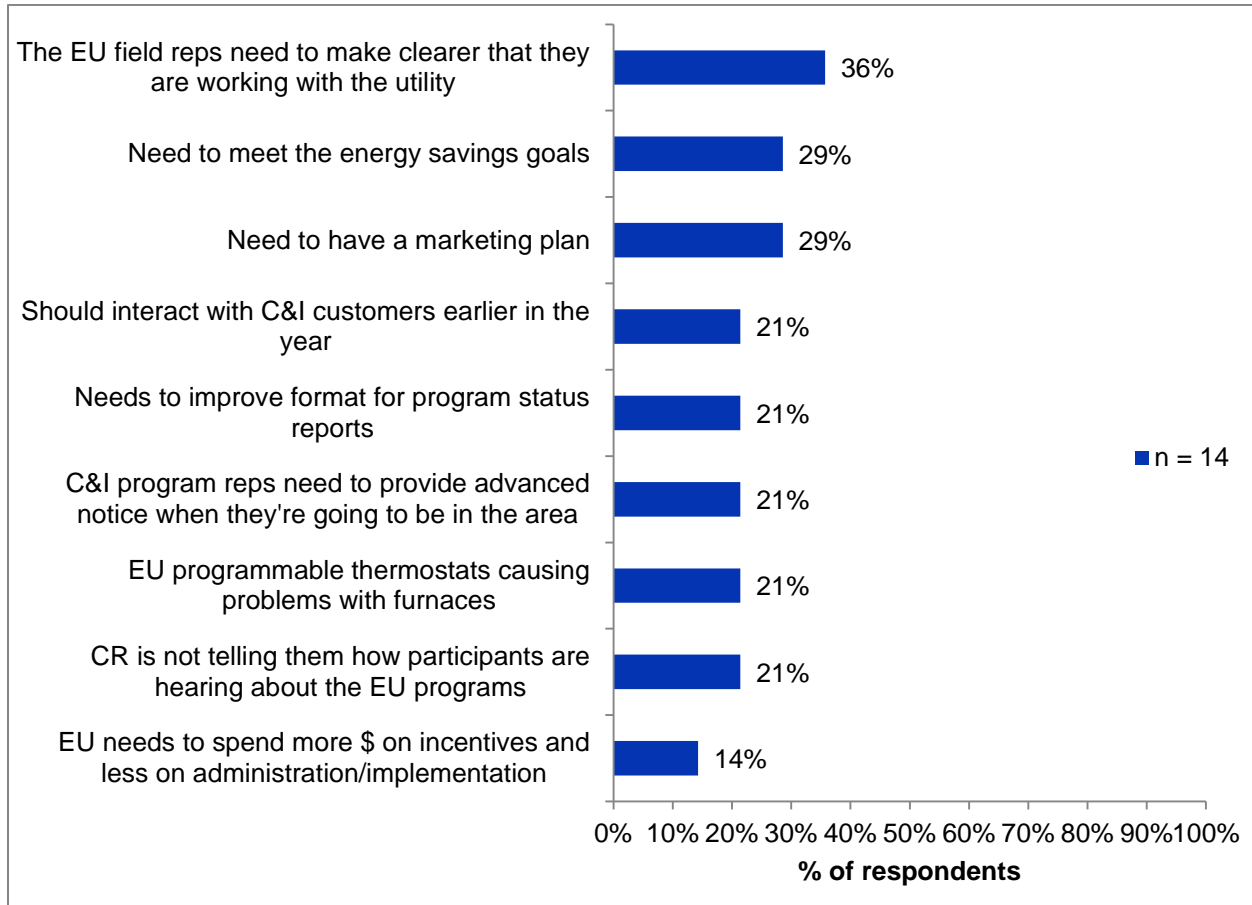


respondents. In addition to these, there were also other suggestions for improvement that were only made by a single respondent. These included:

- Need to have more stability in CLEAResult program management/staff (too much turnover);
- Need to make sure CLEAResult is changing the look of the EU promotional materials so they don't look stale;
- More transparency in how much EU is spending on program administration/implementation;
- Higher incentives, especially for C&I customers;
- More spending on incentives vs. marketing;
- More incentives to C&I vs. residential;
- Need timelier incentive payments;
- Need timelier pick up of appliances;
- Less paperwork;
- More validation of the deemed savings assumptions; and
- Need to have more interaction with vendors/contractors.



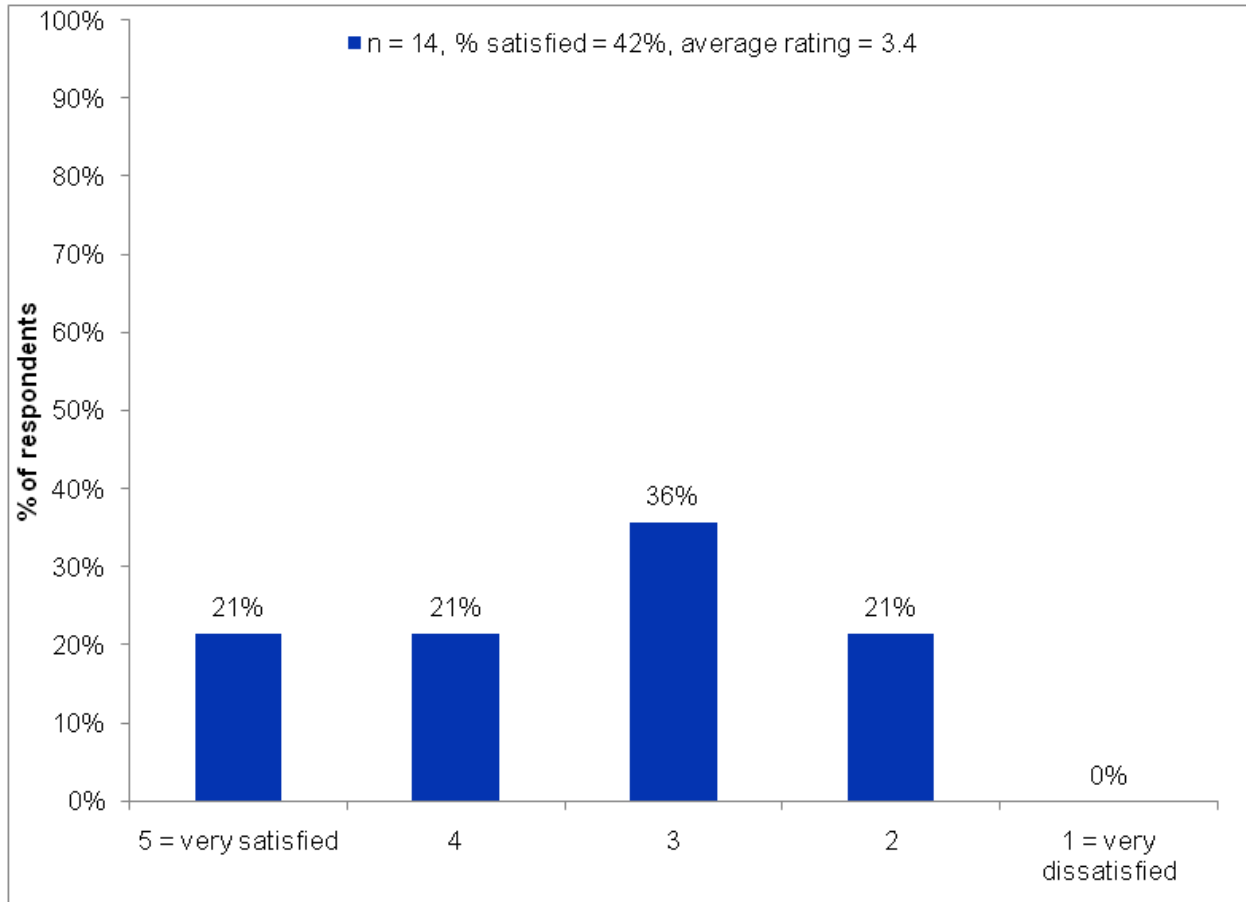
**Figure 2-19. Aspects of EU That Utility Reps Thought Needed Improvement
(Multiple Responses Only)**



Note: Responses exceed 100% because multiple responses were accepted. CR is an abbreviation for CLEAResult.

Finally we asked the utility representatives for their level of satisfaction with EU as a whole. Figure 2-20 shows that less than half (42%) of the respondents were satisfied with the program as a whole.

Figure 2-20. Utility Rep Satisfaction with EU as a Whole



Some of the comments from those who gave satisfaction ratings of three or lower included:

- “The C&I is, I think, a really good interaction. We know what’s going on. We see the results. For the residential, the low income we don’t see results.”
- “You know, I’m just going to stick with the [satisfaction rating of] three saying there’s always improvement in communications and stuff like that.”
- “Our customers are paying in 2% of their bill, and I’m not sure that aggregately we think that they’re getting a good value from the Efficiency UNITED program.”
- “We think they have taken steps forward, no doubt about it. And I think we gave them the benefit of the doubt when they first started. But we’ve been at this for a while. And again, when the example [one of the utility representatives] brought up with respect to a marketing meeting [between CLEAResult and the utilities], one wouldn’t think that is that challenging. If utilities are



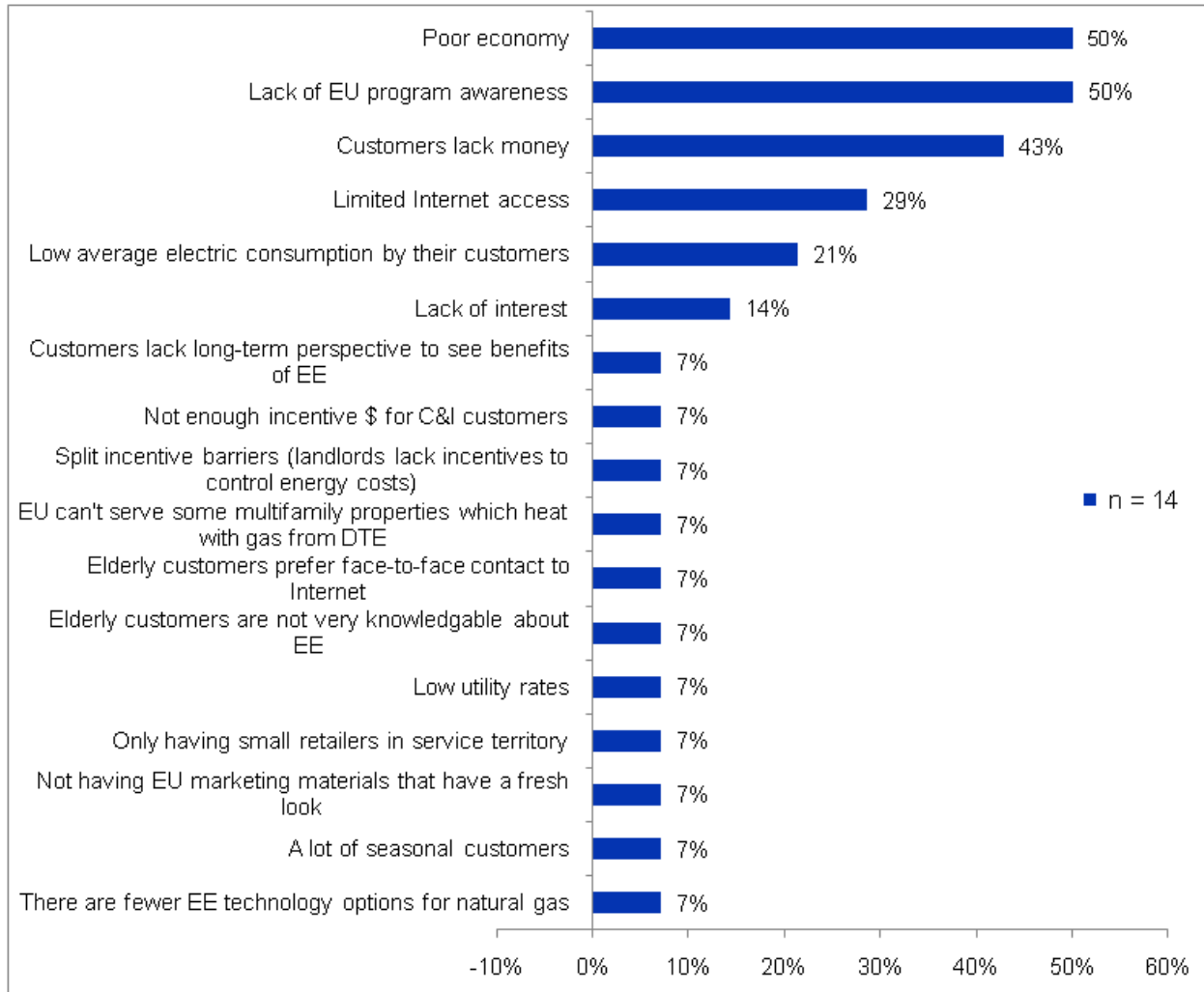
asking for it, it's a way for them to be more effectively reaching customers. Why we're still bringing that issue up a year after is beyond me.”

- “I’ve been very happy with how CLEAResult has carried out the programs. I’m just not happy with the Efficiency UNITED program because of how it’s set up through the legislation.”

2.1.3 MCAA Utility Assessment of Barriers to Program Participation and Energy Efficiency in General

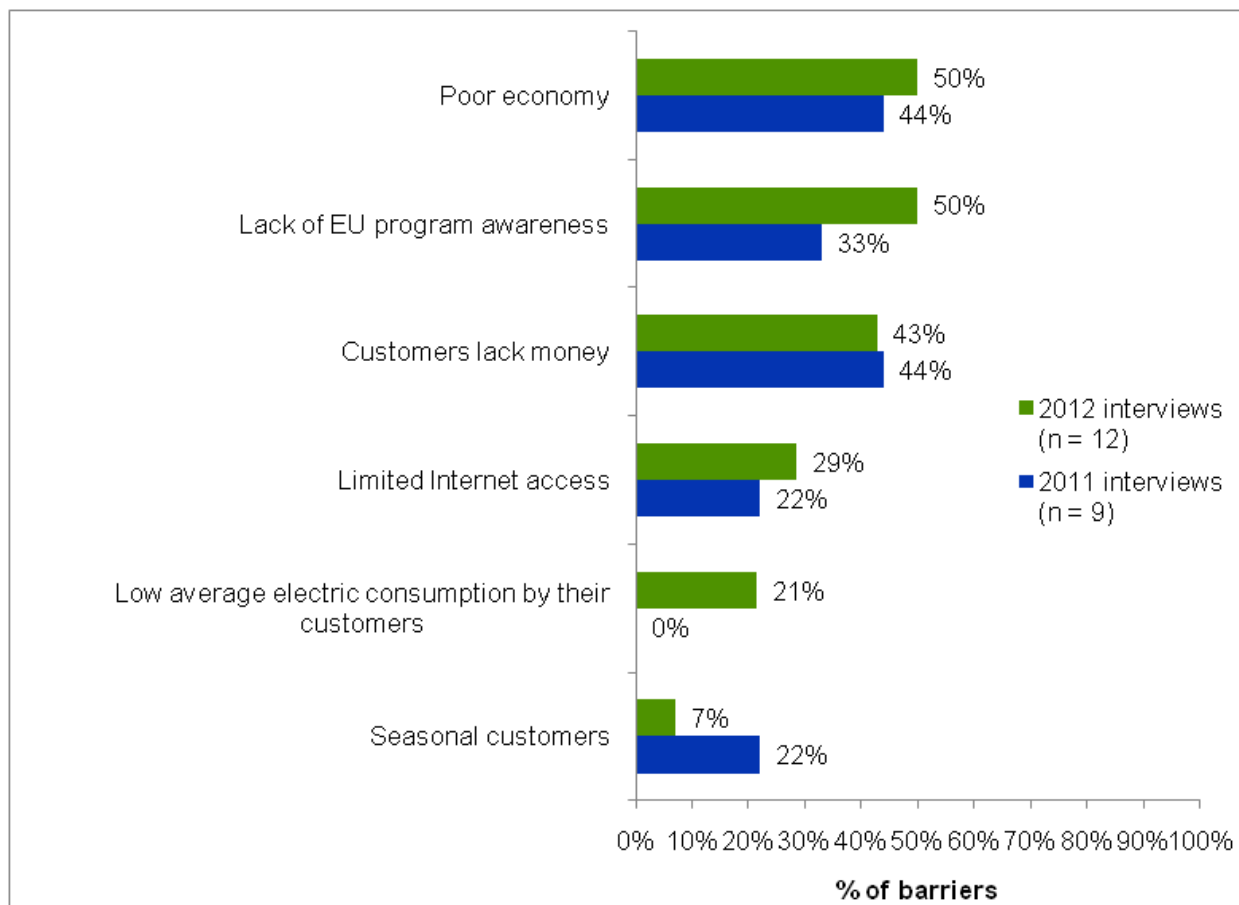
We asked the utility representatives what factors or barriers prevented their customers from participating in the EU programs or energy efficiency in general. They identified many different barriers with the most commonly-identified ones including the poor economy, lack of EU program awareness, customers lacking money, and limited Internet access. Figure 2-21 shows the full range of responses.

**Figure 2-21. Barriers to EU Participation and Energy Efficiency in General
According to Utility Representatives**



We compared the most-cited barriers that were identified in the 2012 interviews with the most-cited barriers from the 2011 interviews. Figure 2-22 shows that the major barriers cited in 2012 were very similar to the major barriers mentioned in 2011. Lack of program awareness increased as a program barrier in 2012, but it must be remembered that four of the municipal utilities we interviewed were new to the EU programs. The decline in the seasonal customer barrier from 2011 to 2012 is probably not very meaningful because the seasonal customer group is a subset of customers having low average electric consumption (the larger group also includes customers from the UP who do not have much air conditioning).

Figure 2-22. Major Barriers to EU Participation and Energy Efficiency in General, 2012 vs. 2011



2.2 Participating HVAC Contractor Interviews

DNV KEMA completed in-depth interviews with 31 participating HVAC contractors in January 2013. This section summarizes the findings from these interviews.

2.2.1 Methodology

The starting point for the 2012 HVAC contractor frame was a list of participating HVAC contractors that we obtained from the manager of the EU Home Performance Program. However, this list did not provide any information on how active these HVAC contractors had been in the program (e.g., how many EU-rebated HVAC measures they had installed). This information is important because it allows evaluators to make sure that the most active contractors are represented in the interviews. It also allows them, by using program activity as a proxy for company size, to stratify the HVAC contractors into classes of small, medium, and large HVAC contractors. This stratification is important since a simple random sample



without stratification would result in too many interviews with small HVAC contractors since these are the most numerous.

In 2011 DNV KEMA staff had been able to collect information on HVAC contractor EU program activity by laboriously reviewing thousands of rebate application forms. However, due to evaluation budget constraints, it was cost prohibitive to do this again in 2012. Therefore the evaluators made the simplifying assumption that the HVAC contractors on the 2012 list from the Home Performance Program manager had a similar level of program activity as they had in 2011. So for 49 HVAC contractors that appeared on both the 2011 and 2012 lists, we were able to attribute a level of program activity to them that allowed us to slot them into large, medium, and small company size strata.

There were an additional 83 contractors on the 2012 list that we could not match back to the 2011 list, presumably because they were new participants. For these contractors we had no information on their level of activity and we put them into a separate “unknown size” stratum. However, we knew from our 2011 evaluation that most of the HVAC contractors that were new to the program since our 2010 evaluation were smaller contractors. We also knew that this is a general pattern with HVAC rebate programs -- that the larger and more sophisticated HVAC contractors become involved with these programs at an earlier stage with the smaller HVAC contractors joining later. Therefore we made the educated assumption that these 83 contractors in the “unknown size” stratum were mostly smaller contractors.

Table 2-1 shows our final sample frame along with the target number of completed interviews and the number we actually completed. The table shows that we were able to hit our targets in all strata except for the very small medium stratum where we had no completed interviews. We made up for these five missing interviews in the small and unknown strata.

Table 2-1. Participating HVAC Contractor Sample Frame and Interview Disposition, 2012

Program Activity/ Company Size	Contractors in Strata	Target Completions	Completions
Large	11	5	5
Medium	8	5	0
Small	30	10	12
Unknown	83	10	14
Total	132	30	31



2.2.2 Characterizing the Participants

The average company size of the HVAC contractors we completed interviews with in 2012 (14 employees) was only slightly larger than the average in 2011 (11 employees) and the same as the average number of employees in 2010 (14 employees). The companies that completed 2012 interviews ranged in size from one to 70 employees. Most participants received a majority of their sales from the residential rather than the commercial sector. Residential sector sales shares for the 2012 participating contractors ranged from 10 to 100 percent, with an average of 81 percent (compared to an average of 77% in 2011 and 84% in 2010). Participating contractors installed between 24 and 3000, averaging just over 317 installations per year.

2.2.3 Equipment Discussed

We asked the 2012 participating contractors about a list of program eligible HVAC equipment types that was largely similar to the list we asked the 2010 and 2011 participating contractors about. Table 2-2 shows the 2010 and 2011 equipment lists.

Table 2-2. Program-Eligible HVAC Equipment, 2010, 2011 vs. 2012

2010 Equipment	2011 Equipment	2012 Equipment
CAC, 14 SEER or greater	CAC, 15 SEER or greater	CAC, 15 SEER or greater
Heat Pump	Air Source Heat Pump	Heat Pumps (Ground Source, Air, or Gas)
	Ground Source Heat Pump	
Water Heater, 0.62+ Energy Factor	Water Heater, 0.67+ Energy Factor	Gas Water Heater, 0.67+ Energy Factor
		Instant Gas Water Heater, 0.82 Energy Factor
		Electric Water Heater, 0.92 Energy Factor
		Heat Pump Water Heater
Set-Back Thermostat	Set-Back Thermostat	Set-Back Thermostat
Furnace, 92%+ AFUE	Furnace, 94%+ AFUE	Furnace, 94% AFUE
		Furnace 95% AFUE
Natural Gas Boiler, 87%+ AFUE	Natural Gas Boiler, 92%+ AFUE	Natural Gas Boiler, 92%+ AFUE
ECM Drives (Motors or Furnace Fans)	ECM Drives (Motors or Furnace Fans)	ECM Drives (Motors or Furnace Fans)
Hot Water Pipe Insulation	Hot Water Pipe Insulation	Not asked

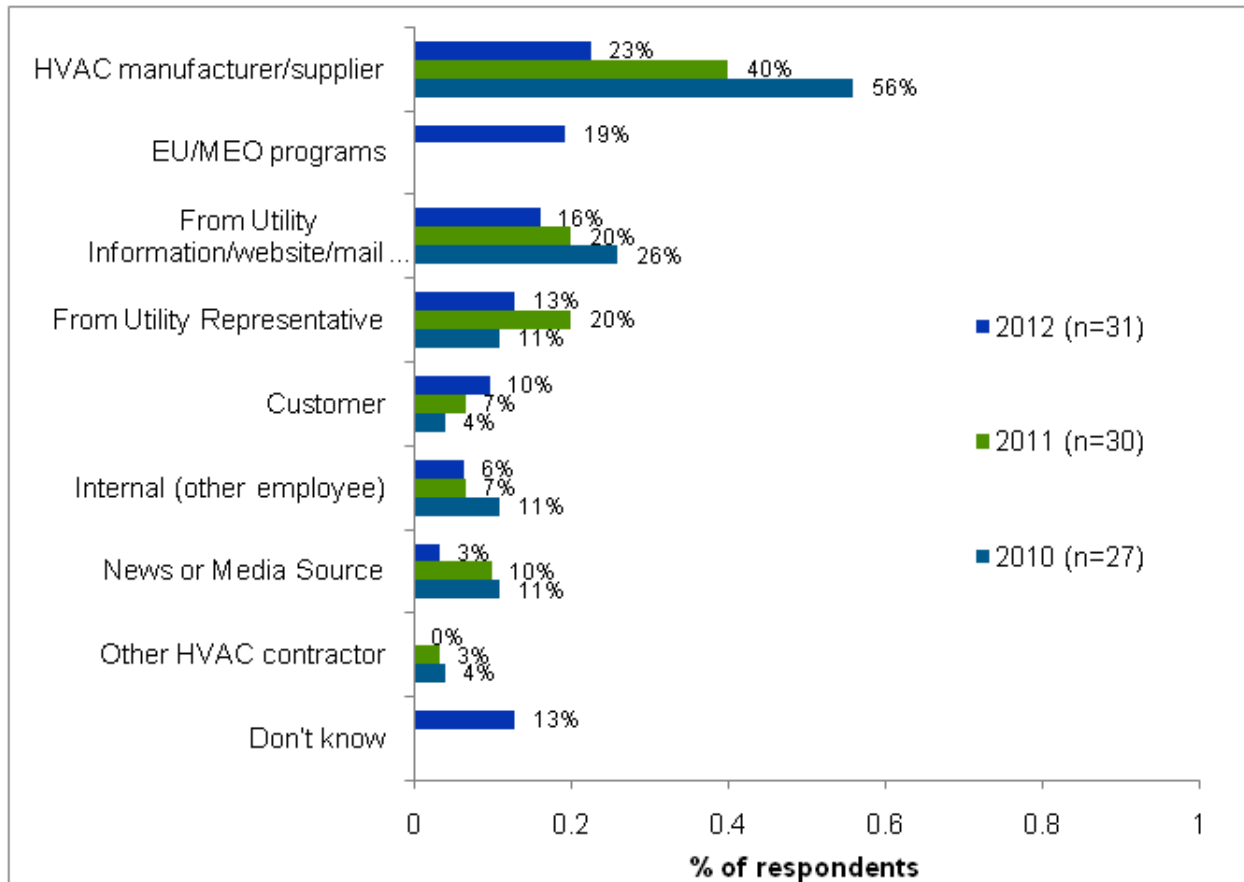


2.2.4 Sources of Information

Interviewers asked the 2012 participating HVAC contractors where they first heard of the program. The most-cited information source was still an HVAC manufacturer or supplier (23% of respondents). One-fifth said they heard from energy efficiency programs such as EU or Michigan Energy Options (MEO). Another almost one-fifth heard about the program through utility materials such as mailers, bill inserts, or the utility website. Figure 2-23 shows the full range of responses and compares them to the responses of the 2010 and 2011 participating contractors.

Unlike the first two years, a significant minority of contractors didn't remember where they had heard about the program. This may be because they had been participating long enough that they had forgotten. Also, 2012 participants were more likely to have heard about the program from energy efficiency programs such as EU or MEO.

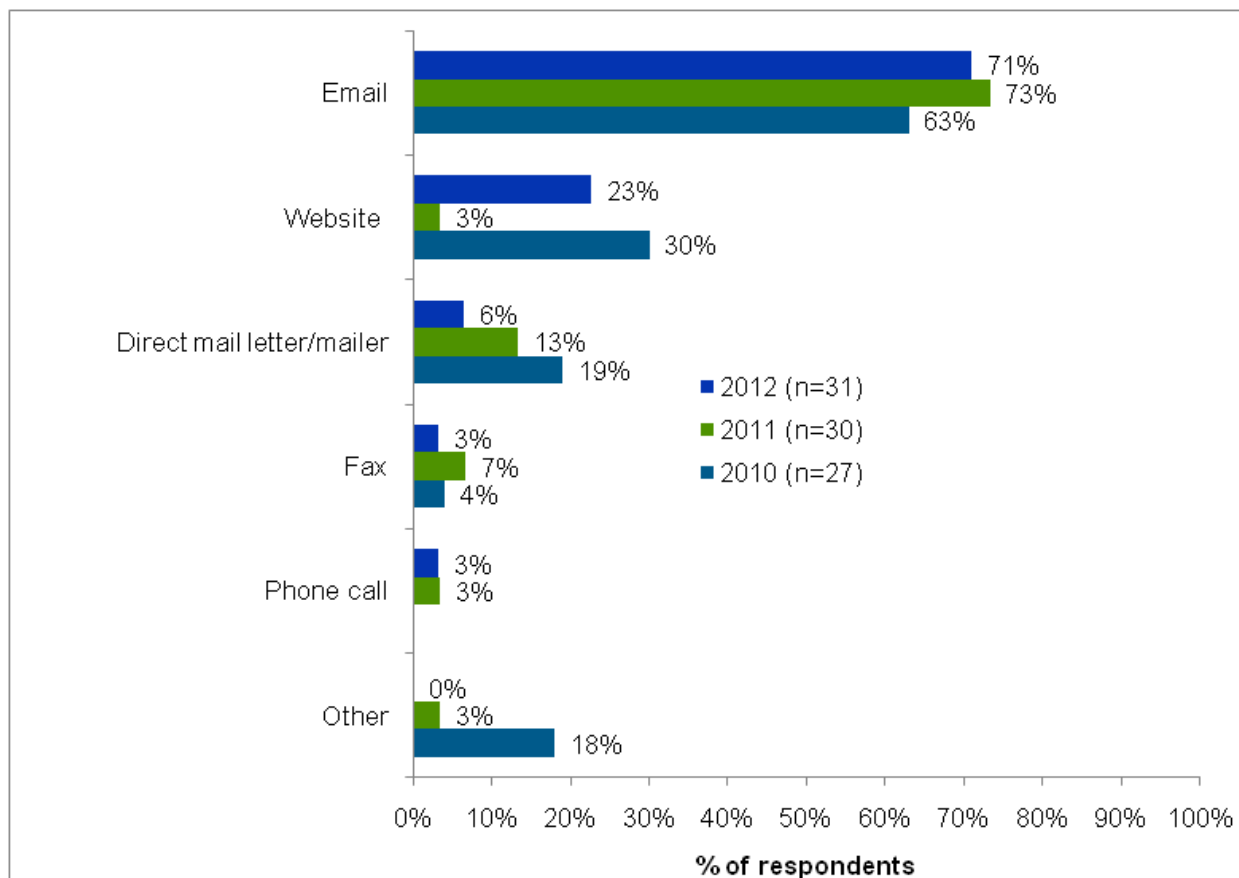
Figure 2-23. First Sources of Program Information for Participating HVAC Contractors, 2010, 2011 vs. 2012



Note: Total may exceed 100% because multiple answers were accepted.

The interviewers asked respondents about the best way for the program to send them information about program changes and updates (Figure 2-24). Nearly three quarters (71%) said email was the best way, a consistently high ranking over three years (73% in 2011 and 63% in 2010). According to 2012 respondents, the website was the second best way to share information (23% in 2012, 3% in 2011 and 30% in 2010). Direct mail was a distant third (6% of respondents in 2012 preferred that option). This was a reduction from the previous two years (13% in 2011 and 19% in 2010) and a smaller share of respondents suggesting faxes, website and phone calls.

**Figure 2-24. Best Ways to Provide Program Information
According to Participating HVAC Contractors, 2010, 2011 vs. 2012**

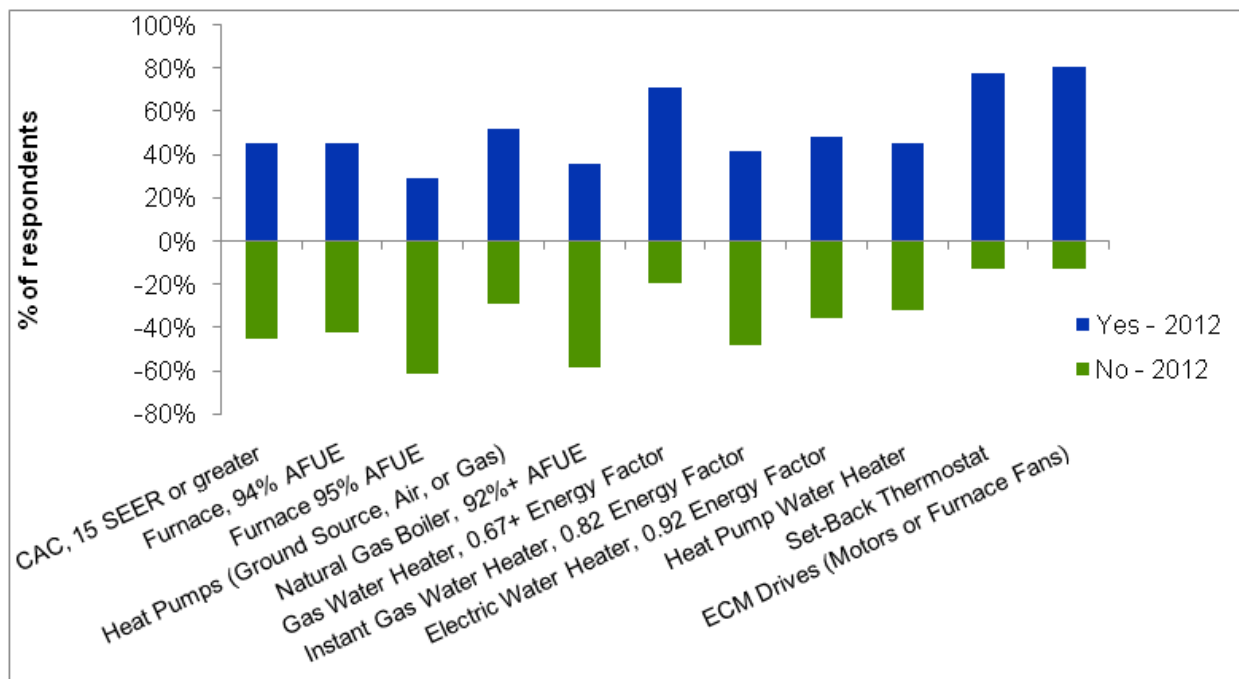


Note: Total may exceed 100% because multiple answers were accepted.

2.2.5 Adequacy of Rebate Levels

The interviewers asked respondents whether the program’s rebate levels were adequate to move equipment sales. Approximately one-half of the contractors indicated that the incentive levels were adequate for most measures except for furnaces at 95% AFUE, natural gas boilers and instant gas water heaters (Figure 2-25). The majority of respondents said the rebate levels were adequate for gas water heater (22 yes, 6 no), set-back thermostat (24 yes, 4 no), and ECM drives (25 yes, 4 no).

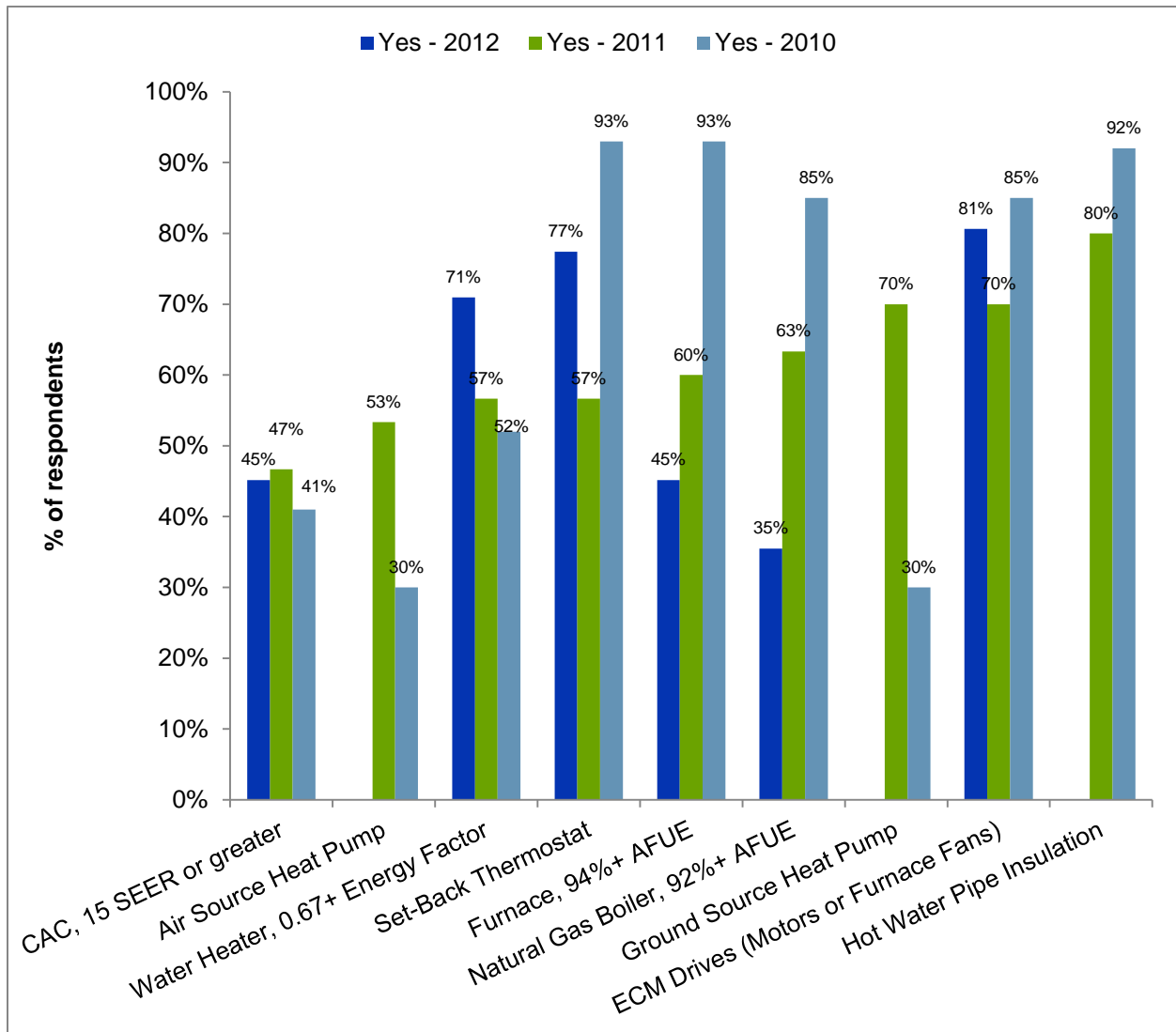
Figure 2-25. Percent of Participating HVAC Contractors Saying Rebate Levels Were Adequate, 2012



All categories do not sum to 100%, as numerous respondents did not know or refused to respond.

The list of measure rebates changed from 2011 to 2012. Figure 2-26 compares the three years for measures asked in 2010 and 2011. The 2012 HVAC contractors were much more likely than their counterparts in the previous two years to say that water heater rebates were adequate. They were almost as likely to say that central air conditions and ECM drives were adequate, and much less likely to say that 94% AFUE furnaces and natural gas boilers rebates were adequate. In 2011 the program increased the minimum AFUE for qualifying furnaces from 92% to 94% and for qualifying boilers from 87% to 92%. Yet although these higher efficiency furnaces/boilers are more expensive pieces of equipment, the program rebate amounts were at the same level (\$200) as they had been in 2010. In 2012 the rebate for the 94% AFUE furnace was reduced to \$100 (the 95% AFUE furnaces do get \$200 rebates. The 2012 HVAC contractors were not asked about air source heat pumps or ground source heat pumps in a separate category or about hot water pipe insulation.

Figure 2-26. Percent of Participating HVAC Contractors Saying Rebate Levels Were Adequate, 2010, 2011 vs. 2012



If a respondent said the rebate level for a particular type of equipment was inadequate, then the interviewer asked them what rebate level would be adequate. Not all respondents provided a response to this question. Table 2-3 shows the average rebate levels that the 2011 participating contractors said were needed to move equipment sales and compares this to the responses of the 2010 participating contractors.



Table 2-3. Average Rebate Levels Suggested by HVAC Contractors Who Thought Current Rebate Levels Were Inadequate

Equipment	Suggested Rebate Level		
	2010	2011	2012
CAC	\$230	\$338	\$325
Furnace 94%	\$250	\$325	\$307
Furnace 95%	NA	NA	\$398
Air Source		\$396	
Ground	\$292	\$300	\$480
Natural Gas Boiler	\$330	\$450	\$450
Water Heater	\$150	\$356	\$345
Instant Gas Water Heater	NA	NA	\$280
Electric Water Heater	NA	NA	\$125
Heat Pump Water Heater	NA	NA	\$190
Set-Back Thermostat	\$75	\$108	\$43
ECM Drives (Motors or Furnace Fans)	\$250	\$120	\$150
Hot Water Pipe Insulation	\$50	No response	NA

As shown earlier in this section in Table 2-2, the program continues to include higher efficiency measures each year. Both water heater and furnace rebates were expanded to include higher efficiency variations. Since higher efficiency equipment is more expensive equipment, it is not surprising that the 2012 participating contractors suggested higher rebate levels on most measures than the 2010 or 2011 participating contractors.

The interviewers asked if there are any other types of equipment the program should offer rebates for that it was not currently offering. Two respondents offered suggestions. One suggested providing rebates for higher efficiency refrigerators and another suggested duct work modifications, even though it is not a measure.

2.2.6 Satisfaction with the Program

Respondents provided satisfaction ratings for a variety of program characteristics such as application forms, websites, marketing efforts, rebate delivery, incentive amounts, and interactions with staff. We also asked them to rate their satisfaction with the program as a whole. We asked them to use a five-point scale in which five indicated “very satisfied” and one indicated “very dissatisfied.” Figure 2-27 shows the percent of contractors that were satisfied (gave a 4 or 5 on the five-point scale) with various characteristics of the program. Table 2-4 shows the contractor responses in more detail. If a respondent said they were less than satisfied (3 or less on the five-point scale), the interviewer asked them why.



Overall satisfaction with the program has decreased slightly (77% in 2012 from 87% in 2011) and there was a significant drop in satisfaction with marketing efforts (16% in 2012 from 43% in 2011). However, three other categories (interaction with program staff, program application forms, and program website) have remained mostly the same. Satisfaction with incentive amounts (55% in 2012 and 47% in 2011) and rebate delivery (65% in 2012 and 57% in 2011) has increased.

Figure 2-27. Percent of Participating HVAC Contractors Satisfied (4 or 5 on five-point scale), 2010, 2011 vs. 2012

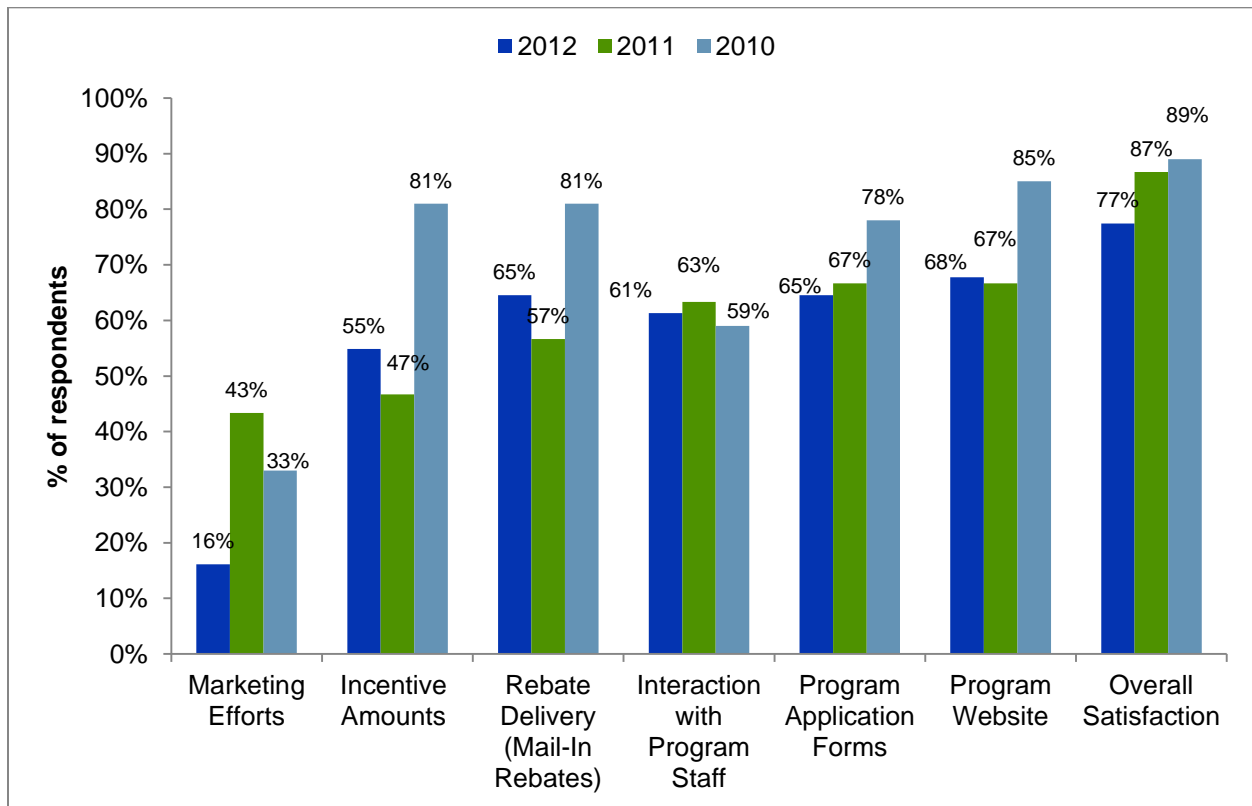




Table 2-4. HVAC Contractor Satisfaction with Program, 2012

	Don't know/ no response	1 - Very Dissatisfied	2	3	4	5 - Very Satisfied
Program Application Forms	3%	6%	13%	13%	23%	42%
Program Website	10%	0%	16%	6%	42%	26%
Marketing Efforts	19%	16%	26%	23%	10%	6%
Rebate Delivery (Mail-In Rebates)	16%	6%	10%	3%	29%	35%
Incentive Amounts	3%	0%	16%	26%	42%	13%
Interaction with Program Staff	13%	0%	6%	19%	19%	42%
Overall Satisfaction	0%	0%	10%	13%	48%	29%

n=31 contractors for all characteristics.

The following subsections provide a little more information on these satisfaction responses and reasons for dissatisfaction with the program.

2.2.6.1 Website

Two thirds of the respondents were satisfied with the program website. The few contractors who were less than satisfied said the website was too difficult to navigate and rarely updated.

2.2.6.2 Incentive Amounts

Slightly over one-half (55%) of respondents were satisfied with the program incentive levels. Of the respondents who were less than satisfied all stated that the incentive amounts should increase.

2.2.6.3 Application Forms

Two-thirds of respondents were satisfied with the rebate application forms. As discussed elsewhere, we consider average satisfaction levels below 80 percent as indicators that a program has some room for improvement. When asked why they were less-than-satisfied, most mentioned difficulties filling out the forms. The majority of those who responded when asked why they were dissatisfied responded that the forms should be available online instead of paper only. Others stated that the forms asked for too much information which was largely seen as irrelevant.



2.2.6.4 Rebate Delivery

Two-thirds of contractors said they were satisfied with the rebate delivery. The reasons given by less-than-satisfied contractors were that the rebates take too long to arrive or papers were lost.

2.2.6.5 Interactions with Staff

Two-thirds of contractors were satisfied. Some of the contractors who were less than satisfied provided reasons, including that it was hard to reach staff, and that they could improve their knowledge of the program.

2.2.6.6 Marketing Efforts

Satisfaction with the program marketing efforts was much lower in 2012 than previous years (16%). Less-than-satisfied contractors all said that either they were not aware of the any marketing or that it was very hard to find. Others stated that marketing materials were outdated and need to be updated.

2.2.6.7 Overall

A majority (77%) of respondents were satisfied with the program overall. Only two contractors provided reasons for being less than satisfied. One stated that the program process overall should be simpler, and another stated that the program should be updated and put online.

2.2.7 Contractor Recommendations

The interviewers asked the respondents if they had any recommendations for improving the recommendations. Ten (32%) of the respondents did not have any recommendations. Those that did have recommendations fell into the following categories.

- *Program website (62% of contractors providing recommendations):* The contractors said they wanted simplified, streamlined information that is completely online. Some also stated that if the program was online there could be better email updates.
- *Response time (24%):* The contractors stated that response time could be improved for approving or denying rebates. Contractors also stated that there needed to be improved response time about communication overall through the program, including that information about the projects should be sent directly to contractors instead of customer's homes.
- *Marketing (14%):* The contractors said that the program could do more to market itself. All of the contractors who made this information also specifically recommended that information about the program be included on the utility bill to customers.



- *Rebate levels (10%):* A number of contractors stated that the rebates for approved measures needed to increase.
- *Other recommendations (10%):* Contractors said that the program needs to ensure that rebate funds do not run out too quickly and that the contractors need advance notification when the funds are running low. Also, other contractors stated that it would be helpful to have more training or webinars about the program.

2.2.8 Utility Differences

The survey asked contractors if they noticed any differences between the various utilities involved in the rebate program. Twelve respondents did not mention differences between participating utilities. A number of contractors did mention they observed differences but spoke mostly about the difference between the online capabilities of other programs and the administration and rebate levels of the Consumer Energy and DTE programs.

When asked if any of the participating utilities did anything the contractors considered best practices, eleven contractors responded. Almost all, ten out of eleven, stated that having program information, application and rebate management all online is a best practice that they appreciate in other utility programs. One mentioned that ductwork is rebated in other states.

2.3 Participating ESP Retailer Interviews

This section summarizes our findings from in-depth interviews with retailers who participated in the upstream lighting component of the ESP program.

2.3.1 Introduction

To learn more about the Residential and Small Business ENERGY STAR Products (ESP) program, DNV KEMA completed:

- *In-depth interviews with 20 retailers participating in the ESP program⁸:* Similar to the 2011 evaluation, retailers were asked questions about their knowledge of the ESP program, the extent of their marketing and promotional efforts, and their level of satisfaction with the program.
- *An in-depth interview with the ESP program manager:* This interviewee primarily dealt with managing the ESP program's retailer delivery of discounted CFLs.

⁸ Twenty-one retailers were interviewed and one interview was cut. The retail store had just lost the department manager and there was no representative available who was familiar with the program.

This section summarizes the findings from these interviews.

2.3.2 Program Description

The ESP Program was launched in November 2009 in all utility service territories. At the time of the interview, the upstream lighting component of the ESP program had been running for three months and employed three ESP program field specialists to help stock and provide point of sale promotional information to participating retail stores. In addition to the field specialists and the program manager, the ESP program has three employees who provide support services and worked community events.

The program began as a coupon-based rebate program for CFLs and in the summer of 2012 began an upstream buy-down program where the program negotiated with CFL manufacturers to buy down the price that they charge to retailers. This change has enabled the program to increase the numbers of participating retailers. Previous participants were limited to ACE Hardware, True Value Hardware and Do It Best stores. In the first three months the program expanded to Lowes, Home Depot, Wal-Mart, Menards, Big Lot, Dollar Tree, Family Dollar and other stores like Batteries Plus that also sell CFL bulbs. The program is also looking to expand to other stores that sell light bulbs such as Walgreens. The program sent out RFP to businesses to recruit stores.

The ESP program also coordinated with the Wisconsin Energy Conservation Corporation (WECC) which is implementing a similar upstream lighting program for other Michigan utilities in the area. This coordination was necessary in order to figure out which program would supply which stores in cases where a store might serve utility service territories both inside and outside the EU service area. Along with the upstream lighting program, energy efficiency kits are still promoted, although less vigorously than last year because of attendant costs of measures.

The program is marketed to the community primarily through newspapers and radio. The CLEAResult interviewee stated that there could be additional work done to increase knowledge of the program.

Marketing this program is something that we need to do more. When we look at the media outlets that we're using and specifically newspaper, the circulation rate doesn't change enough such that we get new eyes looking at it after we run multiple ads. We have to think about, well, how else can we change our marketing billboards or TV ads so that we get a different set of eyes and get a different number of impressions.

Working with big box retailers adds additional space requirements to the shelf displays. The interviewee stated that the program follows each company's space requirements for signage and program displays strictly. Additionally, the program does not require that retailers collect or supply sales information in an automated manner (i.e., through scanner data).

Each retailer has its own set of goals and policies. We have to develop a relationship, learn the culture and understand the policies and procedures of each store so that we can then conduct the



business of actually promoting the sale of CFLs in the store or in the marketplace. Each retailer submits point of sale (POS) data in a different format.

2.3.3 Retailer Product Offerings and Program Knowledge

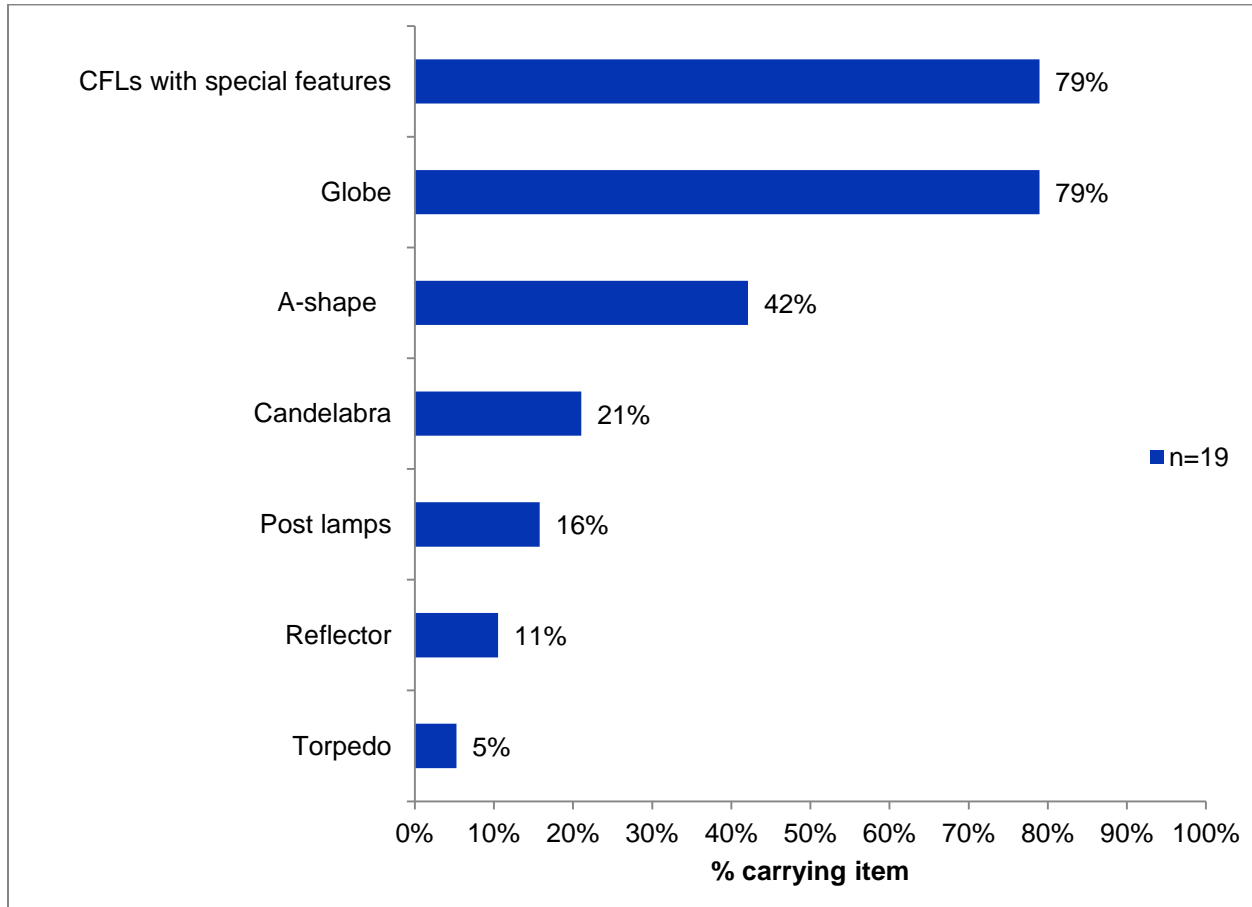
This section summarizes the product offerings of the participating retailers and their level of program knowledge.

2.3.3.1 Product Offerings

Considering the diversity of the participating retailers, it is not surprising that there was a wide range in the numeric estimates of CFLs sold in 2012. Four sold large amounts, between 800 and 5,000 (20%). Three sold between 300 and 350 bulbs in a year (15%). Another four sold around 100 bulbs in a year (20%) and nine did not know (45%).

Retailers were asked if their store currently sells specialty CFLs that do not have the spiral shape, and if so, which types of CFLs they carried in their stores. Nineteen replied that they did sell specialty bulbs. As Figure 2-28 shows, CFLs with special features (such as 3-way dimmable components) and globe CFLs were the most common (79% said they carried each). Most retailers also carried a number of other varieties.

Figure 2-28. Types of Specialty CFLs Carried According to Participating Retailers



DNV KEMA also asked retailers to estimate the shares of all lighting products sold in their stores represented by CFLs, incandescents, halogens, and LEDs. Sixty-eight percent of respondents (n=13) reported that CFLs comprise twenty to fifty percent of all bulbs sold. Incandescents still represented a major market share, with about one-third (32%) saying that they constituted over half of the market and almost half of respondents said that incandescent were between twenty and fifty percent of the market (42%). LEDs still comprise only a small fraction of lighting product sales (Table 2-5).



Table 2-5. Share of Light Bulb Types in Total Lighting Sales According to Participating Retailers

Percentages	0-20%	20-50%	Over 50%
CFLs	26%	68%	5%
Incandescents	26%	42%	32%
Halogens	90%	11%	0%
LEDs	95%	5%	0%

In December 2007 Congress passed an energy bill called the Energy Independence and Security Act (EISA). One component of the EISA legislation calls for a gradual phase-out of inefficient lamps over time starting in 2012. Eighty-five percent of the respondents were aware of the legislation. Almost one-half (40%) of the respondents stated that the legislation did impact their light bulb sales or stocking practices. Of those who said that the legislation had an impact, three retailers stated that it actually caused them to stock more incandescent bulbs, “we stocked up on 100 Watt bulbs then people came and bought them all.” Three stated that they no longer carry the inefficient lamps. Two stated that they still carry “limited stock on discontinued items for folks who absolutely refuse to buy energy efficient products.”

2.3.3.2 Program Knowledge & Impact

Most (67%) retailers first heard about the program through the EU representatives visiting the store. A little over one-fourth (29%) stated that they did not remember how they first heard about the program and one learned about the program through internal, company communication. Interviewees stated that they also heard about the program through store displays or internal communication (14%) and one mentioned a radio advertisement.

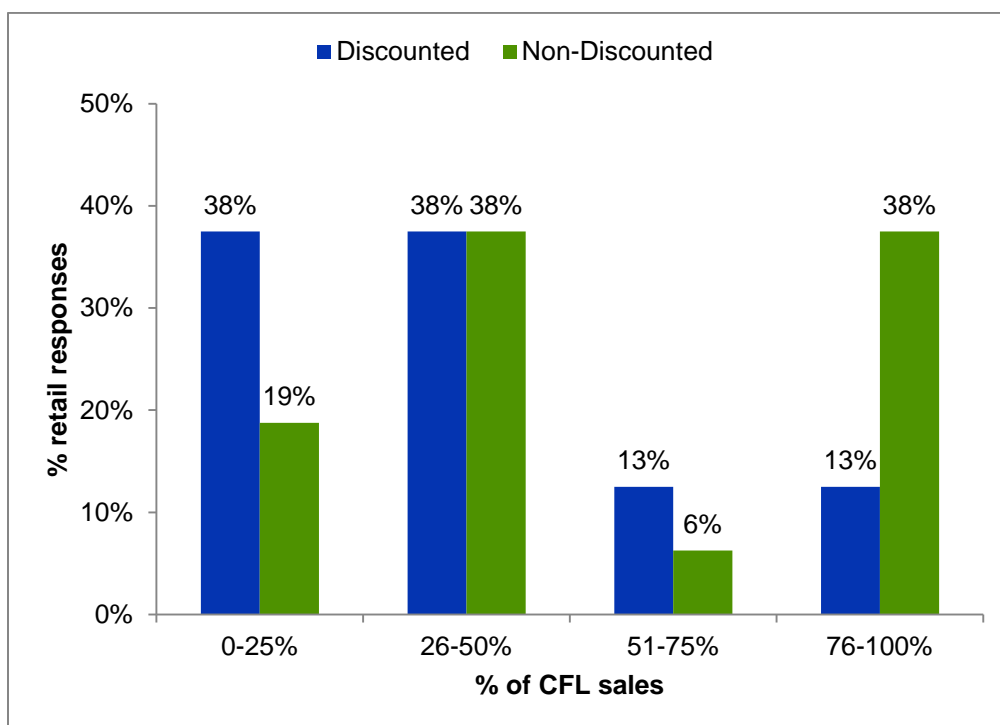
One-third of the retailers said that they had been involved with the ESP program since 2010 or earlier. Only a few joined in 2011 (14%) and another one-third started the program in 2012 (33%) while some did not know when their store joined the program (19%). The majority of all the retailers had sold CFLs before entering the program (86%). The same percentage of retailers (86%) also stated that they continue to sell CFLs during the times of the year that the discounts from the Efficiency UNITED program are not available.

During the time that the program offered buy-down discounts, all of the stores made CFL sales that were discounted and sales that were not. There was a large variability by store in the percentage of discounted and non-discounted CFLs (Figure 2-29).⁹ It is important to remember that the upstream lighting

⁹ The average of all responses shows 41% of CFLs sold were rebated during the program period and 59% of CFLs were not. Since there is a wide range of responses, the average may not accurately describe the majority of responses.

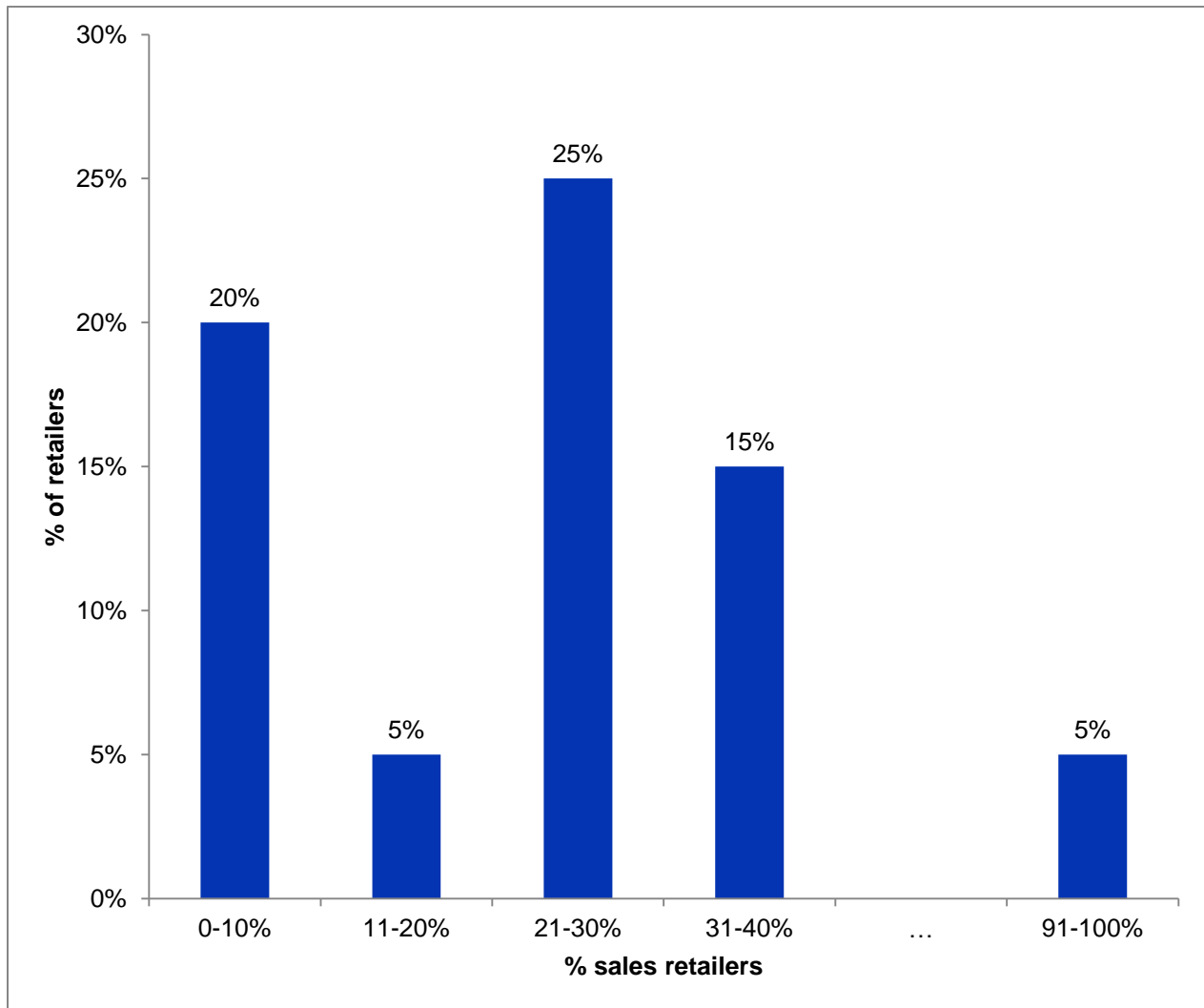
component of the ESP program did not launch until the summer of 2012 and so when the retailers were being interviewed, they only had about six months of experience with this new program.

Figure 2-29. Distribution of Discounted vs. Non-Discounted CFL Sales According to Participating Retailers



All of the store representatives we interviewed stated that they thought their stores would still sell CFL bulbs even if the discounts had not been available (100%). At the same time, most (62%) stated that they expected the numbers of CFL bulbs sold would have been lower if the program had not provided discounts. Approximately one-fourth (24%) stated that they thought the sales rate would be the same with or without the program and three (14%) did not answer. Of those who thought that sales would be lower, most (24%) stated that the reduction would be between twenty to thirty percent and seven (33%) did not answer (Figure 2-30). Interestingly, one interviewee (5%) stated that CFL sales would decrease by almost 100% without the program. Over half (52%) said that discounts drive sales for customers. Three stated that customers are more aware of benefits and would buy the bulbs anyway.

Figure 2-30. CFL Sales Reductions in the Absence of the Program According to Participating Retailers



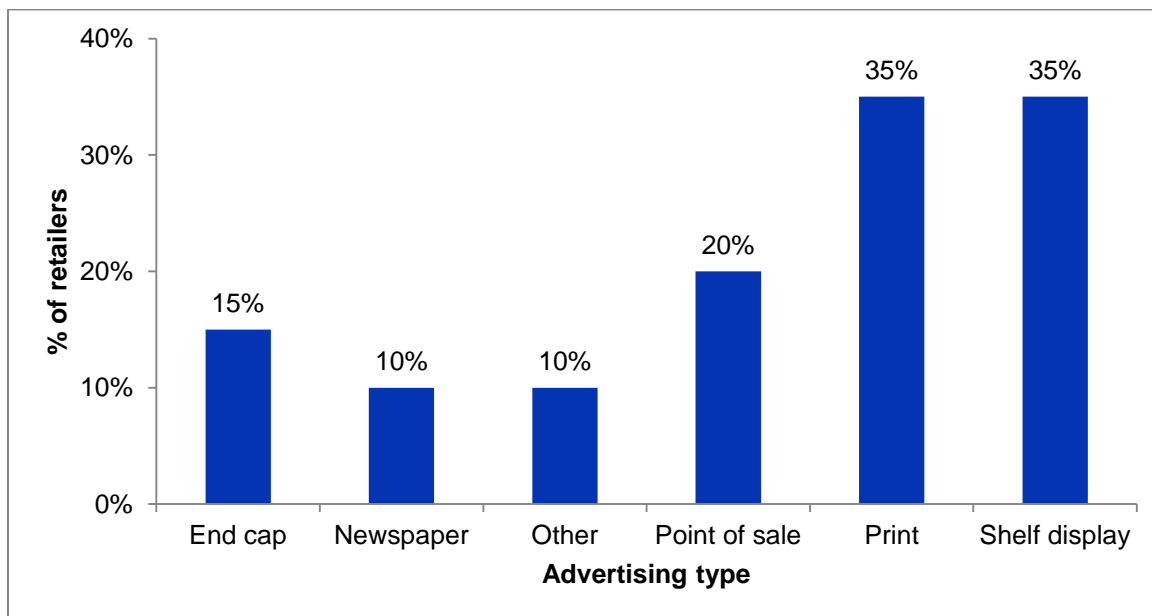
Of those who said that rebates or discounts were important, most stated that it was because CFLs are too expensive to be competitive at full price. At the same time, all of the interviewees stated that the present amount of the discount was enough to encourage customers to purchase a CFL bulb.

2.3.4 Retailer Marketing and Promotional Activities

As part of the program, some advertising materials were provided and retailers were encouraged to display advertising. As the CLEAResult interviewee mentioned, retailer space restraints and corporate policies required program flexibility throughout implementation. Retailer interviewees were asked whether their store engaged in any marketing or promotional activities. Sixty-five percent said that they

did engage in some marketing, and the same percentage stated that they were provided with point of sale signage from EU. Print and shelf displays were the most common marketing materials (Figure 2-31).

Figure 2-31. Retailer Marketing Activities



Interviewees were also asked how active their company has been in promoting the CFL discounts offered by EU. Almost one-half (40%) responded that their companies were very active (a response of 4 or 5 on a scale of 1 to 5 where 5 indicates “very active” and 1 indicates “not very active,” and 5 “very active”). Those who stated that they were not active (45%) were asked why they haven’t promoted the program. The most common response was that CFLs were not a priority for the retail store or for customers themselves. Two interviewees stated that their store relies solely on in-store company signage, and another stated that CFLs simply last too long: “everybody who wanted them now has them and they are not buying more because the bulbs last too long.”

2.3.5 Program Challenges

Retailers were asked what barriers limit the sale of ENERGY STAR CFLs. One half (50%) did not recognize any barriers. The other half stated that CFL functionality (20%), high cost (20%), customer preferences (15%) and mercury (10%) were all barriers to sales.

In the interview with the CLEAResult program manager, program challenges were also discussed. The CLEAResult interviewee said that while participating retailers were happy to devote some shelf space, there were challenges getting the program promoted. End caps were in high demand and therefore not always available to the program. There were some additional challenges mentioned during the interview:

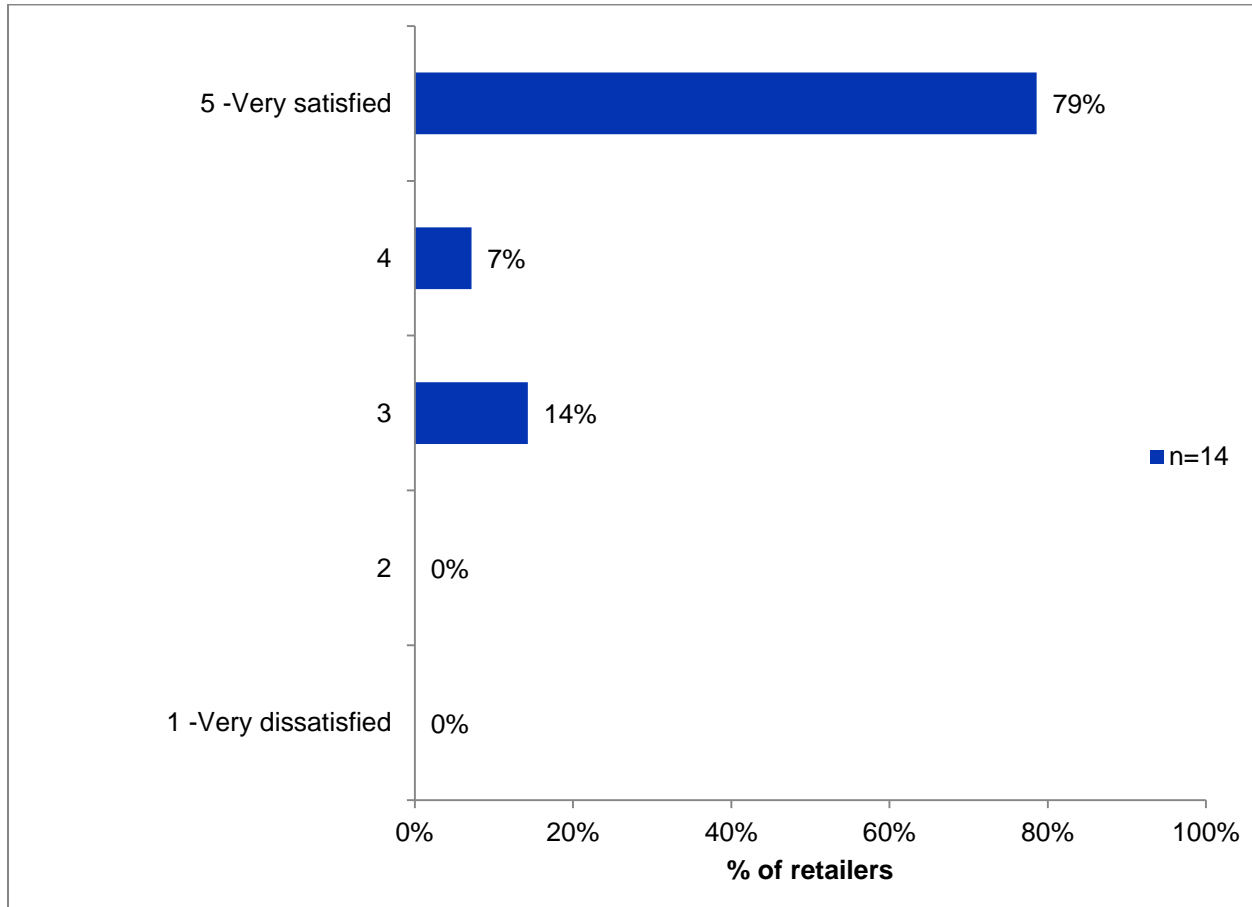


- The distance covered by the ESP program necessitates a great deal of driving in order to attend stores in person. In order to address this challenge, the team has monthly conference calls to check in. The ESP program specialists, who visit individual stores provide point of sale promotional information, are divided by area. One is dedicated to the Upper Peninsula and two are dedicated to the Lower Peninsula service territories.
- Initiation of the program demanded a steep learning curve for program administrators. Reconciling invoices with payments to the retailers and using Pulse, the new tracking system were time-consuming challenges. According to the interviewee, greater experience with the program should address these issues

2.3.6 Satisfaction with the ESP Program

DNV KEMA asked the participating retailers about their level of satisfaction with program information, marketing, interactions with program staff, and their satisfaction with the program as a whole. Satisfaction with program information was high, though only those who remembered getting information were asked their rating (n=14 respondents, see Figure 2-32). A majority of respondents stated that they were satisfied (86%) were satisfied (answered 4 or 5 on a 5-point scale, where 1 is “very dissatisfied” and 5 is “very satisfied”) with program information, with the remainder being less than satisfied (14% answered in the 1-to-3 range). This question was not asked in the 2011 survey of participating retailers.

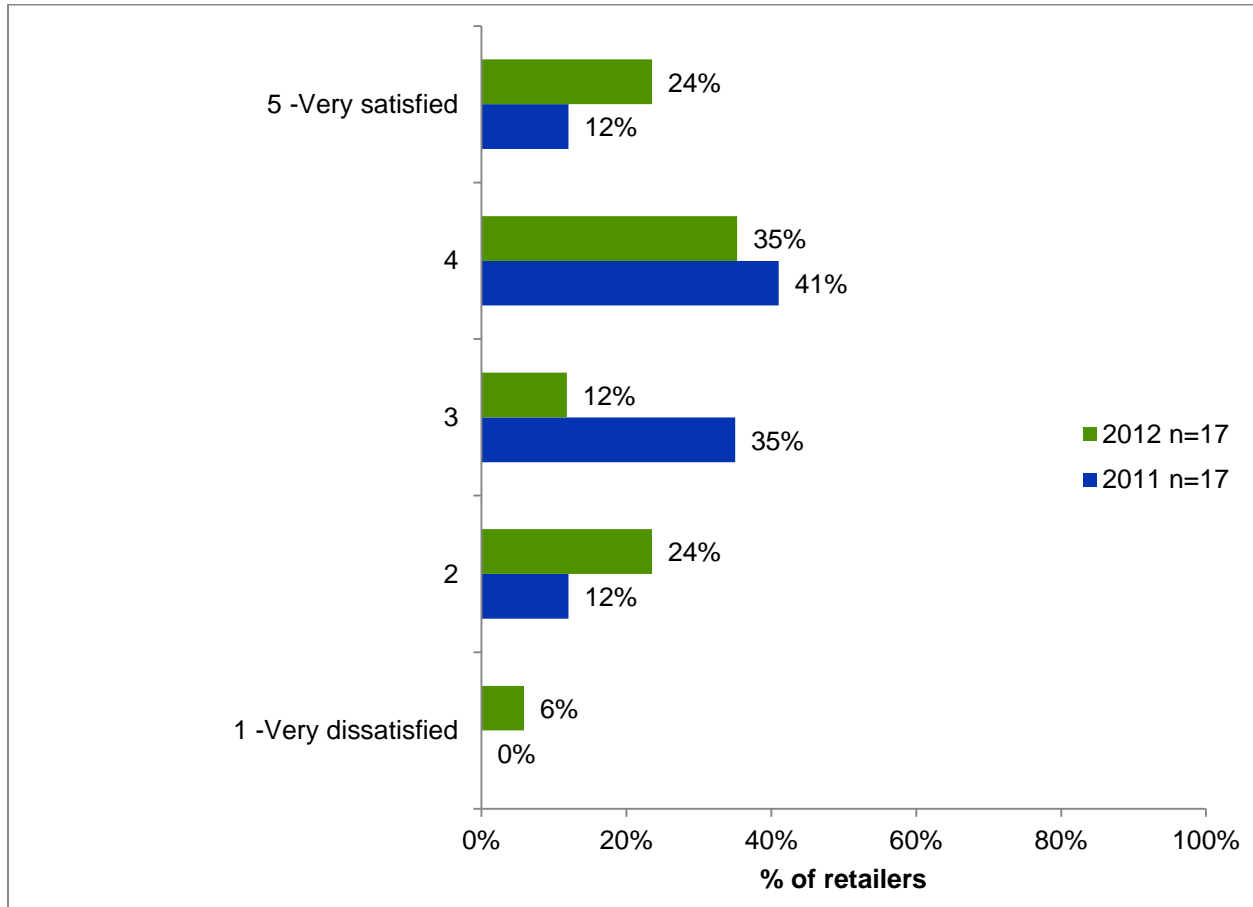
Figure 2-32. Participating Retailer Satisfaction with Program Information



The two respondents who were less than satisfied with program information stated that it was because there should have been more information about “how stores are supposed to participate in the program” and the information provided was “too brief and too infrequent.”

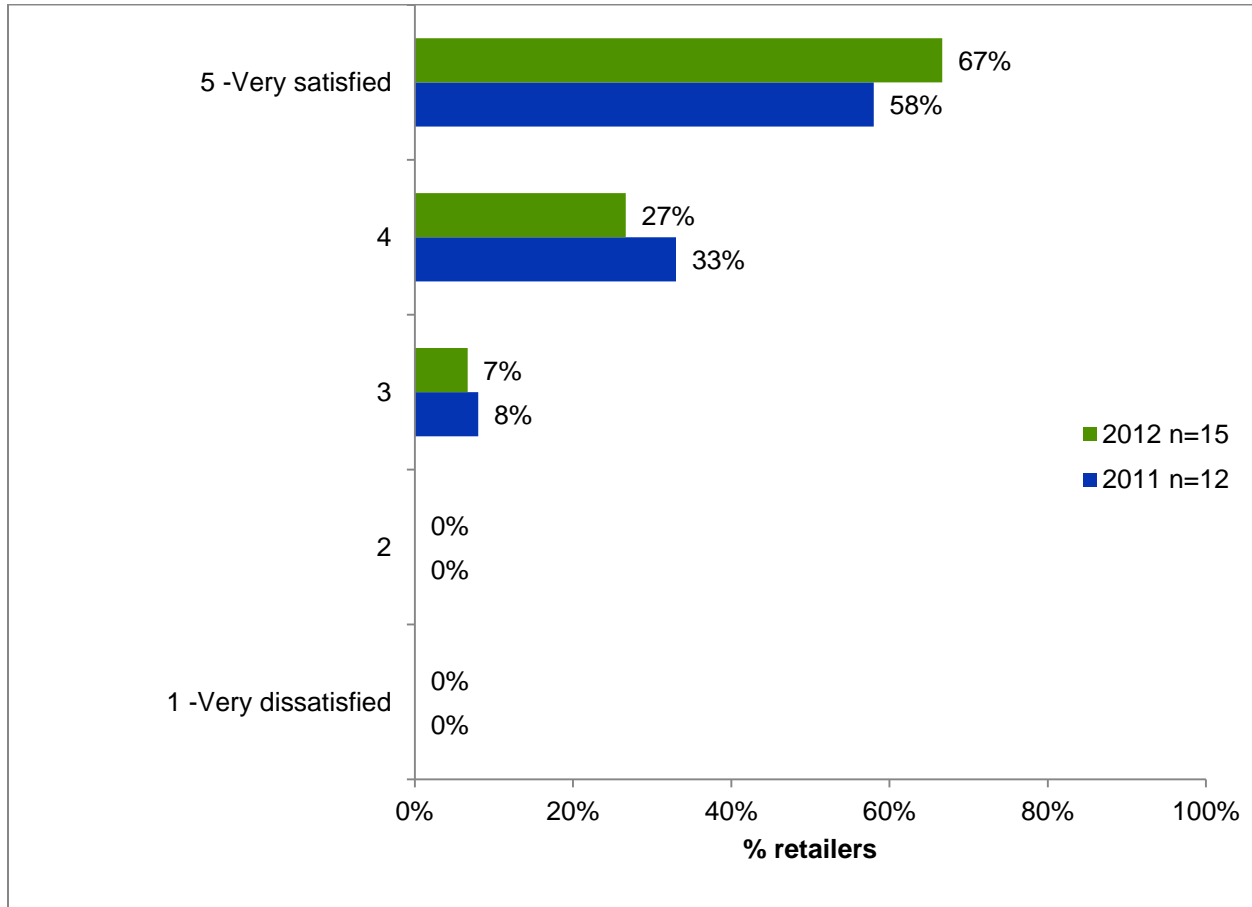
CLEAResult marketed the program to retailers and respondents were all asked their degree of satisfaction with the program marketing, seventeen responded. Of those who gave a rating, slightly over one-half were satisfied (59% answered 4 or 5 on the same 5-point scale). Almost one-half were not satisfied with the program’s marketing which is a slight improvement from last year (42% in 2012 and 47% in 2011) (Figure 2-33). All of the respondents who were less than satisfied with marketing responded that there was “not enough marketing presence. I didn’t see any ads or billboards.” Respondents also stated that marketing efforts did not reach their customers, “it doesn’t seem like the EU is actually educating the general public at all about CFLs. They are not proactive enough in their marketing efforts.” This indicates that there is still a lot of room for improvement in this area.

Figure 2-33. Participating Retailer Satisfaction with Program Marketing



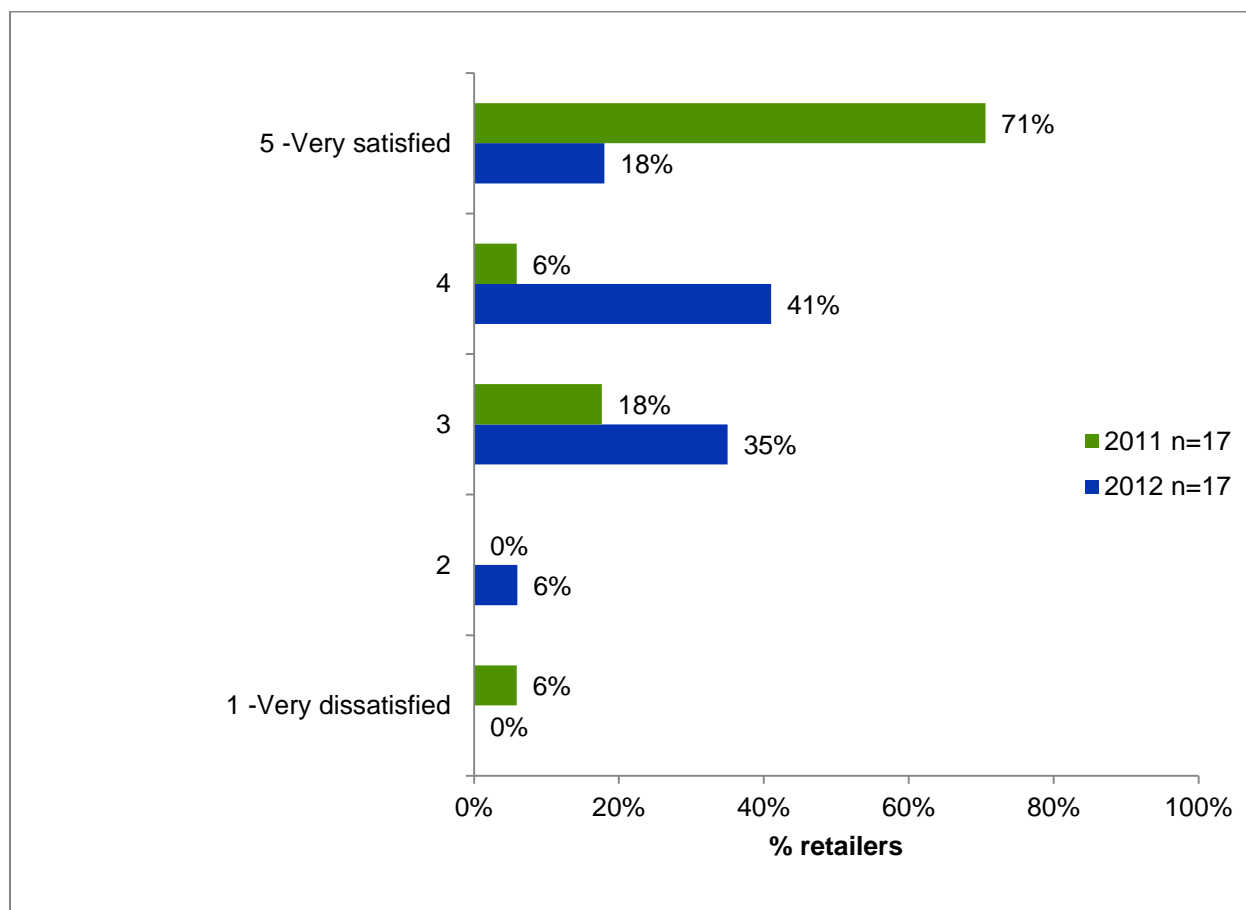
DNV KEMA also asked about retailers’ degree of satisfaction with their interactions with EU/EO staff. Seventy-five percent of respondents said that they had had contact with CLEAResult personnel. Of these, a high percentage (94%) indicated that they were happy with them (answered 4 or 5 on the same 5-point scale) (Figure 2-34).

Figure 2-34. Participating Retailer Satisfaction with CLEAResult Staff



Finally, DNV KEMA asked retailers to rate their overall satisfaction with the ESP program. Seventy-seven percent of respondents rated their satisfaction with the program as a whole as either a four or five on the five-point scale, with the remainder giving ratings of three or lower (Figure 2-35). This is an increase from last year when slightly over half (59%) rated the program a four or five on the five-point scale. Critical comments, again, had to do with lack of marketing and program information, as well as a feeling that the program administrators should have done more to promote the program to the public.

Figure 2-35. Participating Retailer Satisfaction with the Overall EPS Program



2.3.7 Suggestions for improvement

Respondents were asked if they had any suggestions for how the design or delivery of this ESP program could be improved. Nine had some suggestions for improvement. The majority of the suggestions related to increased marketing and program information, including: provide more advertisements, more program and measure information, offer training for retail staff, and resources for cooperative marketing. Other suggestions included: enable bar code reading for Point of Sale (POS) tracking, include LEDs in the program, offer sample bulbs to customers, and increase the charge for energy to make efficiency more worthwhile.

2.4 Community Action Agencies

This section summarizes findings from our in-depth interviews with the managers and staff of Community Action Agencies (CAAs) which help deliver EU’s Residential Low Income (RLI) program.



2.5 Findings from the CAA Interviews

This section of the report presents results of a process evaluation for the Residential Low Income (RLI) program, otherwise known as the Income Qualified Energy Optimization (IEO) program. The evaluation relies on information collected while conducting in-depth interviews with Community Action Agency (CAA) Program Managers. During the four quarter of 2012, DNV KEMA interviewed 11 of the 12 CAA managers. This is the third straight year that we have conducted these interviews. As we did in 2011, we asked the CAA managers approximately 30 questions focusing on what has changed and what remains the same since we last interviewed them. This is in contrast to the first year of interviews where we asked CAA managers over 60 questions that covered a broader range of program topics.

2.5.1 Program Description and Evaluation Background

The RLI Program is designed to assist income-qualified EU customers lower their energy bills by providing no cost energy-efficient home improvements. The CAA network is overseen by MCAAA and the program contractor is CLEAResult. CAAs were initially selected to deliver this program based on their previous experience and the infrastructure available to deliver similar programs through federal and state grants. During our 2010 and 2011 interviews, CAAs were still managing large grants from the 2009 American Recovery Reinvestment Act (ARRA). Over the last three years those federal and state grants have changed considerably. The ARRA funds enabled CAAs to expand their service offerings to significantly more income-qualified clients and these “stimulus” funding efforts enhanced the overall awareness of these services resulting in a long waiting list of applicants. Additionally, for some agencies the increase in funds and awareness from ARRA resulted in an increased number of measures installed and savings achieved. Other agencies were focused on spending the time-dependent ARRA dollars and therefore RLI program funding was a lower priority.

For each income-qualified customer that a CAA serves, there are multiple funding sources that contribute to the cost of the energy-efficiency measures, the inspections that occur at each home, and the installation of the selected measures. The utility-sponsored RLI incentive dollars have historically been a minimal source that contributes towards the cost of a measure and some support fees, while state and federal grants pay for the bulk of the measures and provide payment for administrative support, the FAXPro computer system, databases, and technical support, etc. The EU’s RLI program, in its current framework, is heavily dependent upon the availability of these other grants. Therefore the CAAs could not deliver the RLI program in its current capacity without the state and federal grants. Given this unique arrangement, we asked CAA to comment on their grants sources and the energy-efficiency measures that are tied to other sources. Our interviews with CAA Program Managers included the following topics:

- Overview of Current and Future Grant Sources
- Current and Future Program Applicants and CAA Ability to Provide RLI Services
- Impacts of Funding Sources and CAA Ability to Provide RLI Services



- Incentive Levels for RLI Weatherization and Non-Weatherization Measures
- Communication and Satisfaction with MCAAA and CLEAResult

2.5.2 Overview of Current and Future Grant Sources

Respondents were asked: “What grant sources did you use in 2012 and what sources are you expecting to use in 2013?” In our interviews last year respondents described a bleak outlook on their ability to deliver this program due to the anticipated phasing out of ARRA funds, the permanent discontinuation of Michigan Public Service Commission (MPSC) funds (due to a law suit that prohibited them from funneling the MPSC dollars through the CAAs), and the reduction in Department of Health and Human Services (DHHS) LIHEAP (Low-Income Home Energy Assistance Program) grants. While this was true to some degree, the magnitude was not as severe as anticipated because unused carryover ARRA funding was redistributed to CAAs. Even with carryover ARRA funding, some CAAs reported as much as a 50 percent reduction in staffing and third party contractor services since 2011 and some CAAs reported having done only 20 percent of the work they had done in previous years and overall fewer jobs prior to the arrival of the ARRA funding.

The following is a summary of the current and anticipated funding sources as reported by the CAA representatives:

- *Current Funding Sources for 2012:*
 - ARRA (unspent amounts were redistributed);
 - Department of Energy (DOE) weatherization funds;
 - Efficiency UNITED through the MCAAA utility providers and managed by MCAAA and CLEAResult; and
 - Energy Optimization through the MECA utility providers and managed by WECC.
- *Anticipated Funding Sources for 2013:*
 - Department of Energy (DOE) weatherization funds;
 - Efficiency UNITED through the MCAAA utility providers and managed by MCAAA and CLEAResult; and
 - Energy Optimization through the MECA utility providers and managed by WECC.
- *Sources Status Unknown for 2013:* Department of Health and Human Services - LIHEAP

2.5.3 Impacts of Alternate Funding Sources and CAA Limited Ability to Provide Services

The topic of grant funding sources continues to be an area of great uncertainty. The expected overall number of clients served was reduced significantly from 2011 through 2012 and interviewees have indicated the pattern will continue into 2013. We asked the CAA managers: “How did the reduction in funding impact your agency? Did you experience fewer jobs, reduced staffing, reduced contractor services, and reduced measure usage?” In response to these questions, 100 percent of respondents said all of the above. They also indicated that the impacts of the cuts would be to reduce the number of customers served rather than reduce the number of measures each customer receives.

Due to these funding cuts, RLI program measures are now on a first-come first-served basis as opposed to a designated allocation per CAA, as they were in years prior. This new arrangement should help the RLI program get its dollars spent and savings achieved as some CAAs have a higher volume of clients than others. However, in 2013 there may be fewer CAAs delivering the RLI program if the interviewee projection of reduced funding are realized, with a greater risk in the rural service territories due to their smaller population densities. This is because regular DOE funds -- the statewide DOE allocation that provides administrative support and technical support for low income programs – are being reduced statewide from \$20 million down to \$2 million. This will mean that some CAAs will not be able to deliver their low income programs. Some verbatim responses from the CAA program managers on this topic included:

- “We were actually closed twice in 2012 waiting for the money to come through.”
- “We anticipate a sharp reduction and we may eliminate this program”...and... “In essence it’s a complete wipe-out for regions with insufficient populations.”
- “If we don’t get it [LIHEAP] and only the DOE funds through Congress, it’s going to be difficult to maintain our program.”

2.5.4 Satisfaction with Energy Efficiency Measure & Rebates

With the anticipation of reduced funding for the traditional Income Qualified Weatherization program, CLEAResult and MCAAA have developed alternative methods to get energy-saving measures installed in client homes. Described below are the traditional or “Whole Weatherization” measures for 2012 as well as new measures described as “Pre-Weatherization Measures /Energy Efficiency for Non-weatherization Measures” or Pre/Non Weatherization Measures.

- *Whole Weatherization Program Measures:*
 - Electric measures: CFLs, ENERGY STAR refrigerators and furnace blower fan ECM motors.



- Natural gas measures: Air Sealing, insulation (attic, wall, ceiling, band joist, and mobile home belly), programmable thermostats, 92% or better AFUE furnace and boilers, and natural gas furnace O&M tune-ups.
- *Pre/Non Weatherization Measures:* CFLs, faucet aerators (bathroom and kitchen), high-efficiency showerheads and high-efficiency handheld showerheads, R-3 pipe Insulation, and natural gas furnace O&M tune-ups.¹⁰

The installation of Pre/Non Weatherization Measures is intended to occur in three different ways:

- 1) When CAAs perform a pre-inspection. Pre-inspections occur at all homes that qualify for weatherization.
- 2) When clients who come to the CAAs seeking services from one of their 90 or more programs, for these clients the measures are described as “Energy-Efficiency for Non-Weatherization.”
- 3) Some CAAs are reaching out to their clients who are on their waiting list for weatherization improvements but who will not be visited during the year due to limited funding. CAAs are going back to those clients and offering to install pre-weatherization measures.

Yet the CAA interviews provided some evidence that Pre/Non Weatherization Measures are underutilized and changes will need to be made in order to make better use of them. Some interviewees expressed hesitation to use Pre/Non Weatherization Measures and many said they prefer the consistency of the “traditional” Whole Weatherization measures over the Pre/Non Weatherization Measures. Barriers to greater use of the Pre/Non Weatherization Measures, particularly for single-family homes, include:

- The need to buy these measures in bulk;
- The upfront cost to purchase;
- Lack of storage space;
- Uncertainty of use or saturation in the market;
- Minimal support fees; and
- Possible negative customer experiences with the Pre/Non Weatherization Measures and the resulting need to revisit homes when problems surface.

“The pricing is too low for our agency to participate,” said one CAA interviewee. “We would be in the hole by about \$150 on every job.”

¹⁰ Pre/Non Weatherization Measures are to be installed in homes not currently participating in weatherization with electric or gas water heaters.



Another measure-related issue that the CAA interviewees expressed concern with was the issue of “Direct Install” (DI) measures. DI measures vary from agency to agency, are often short-term, are usually targeted to specific measures in a specific area, and have unique incentive arrangements. CAAs cited challenges with DI measures (even though we did not ask about them). One CAA manager said she was very satisfied with the CLEAResult RLI program manager on the delivery of the traditional weatherization program, but less than satisfied with CLEAResult’s delivery of the DI programs. The CAA interviewees indicated that these DI programs are challenging because:

- Such programs require CAA staff to take extra time to familiarize themselves with a new set of forms and procedures, which is particularly difficult in light of recent staffing cuts;
- These programs can be costly since they do not cover mileage reimbursements and some measures require licensed mechanical contractors which are expensive to employ; and
- The timing and of the DI programs are often unfavorable.

Some CAA interviewees said they would prefer that future introductions of any DI programs come from MCAAAA as opposed to CLEAResult or other organizations. Some of the feedback of these CAA interviewees concerning the DI programs included:

- “With all the programs running at the same time we only took advantage of the ones that were best for us and easiest for us to use. There needs to be more strategic planning for add on [Direct Install] programs. If they laid out a plan and had the same plan for the entire year and only made some little tweaks that would be ideal but the barrage of information from various individuals seems schizophrenic. I’d prefer MCAAAA introduce any new programs. We have done some projects but it ends up in a lot of confusion.”
- “[There needs to be] more careful planning and delivery of temporary programs, such as Direct Install. They need to be more carefully considered with regards to timing. The various programs offered are inconsistent and change routinely. This can be hard to manage.”
- “Our biggest problem right now is getting base funding to operate. Direct install programs are costly. Other agencies have tried to distribute funds in say one neighborhood but you need to have staff to do that.”

As we have done in years prior (2011 and 2010), we asked the CAA managers about their satisfaction with the RLI weatherization measure rebate amounts. Respondents were asked if the incentives were “adequate, too low, or if there was room for improvement.” Opinions on incentive amounts have made a significant improvement from years prior with majority of respondents indicating they were “adequate.” The CAA interviewees indicated that many challenges to the use of the RLI program measure have less to do with incentive levels and more to do with other issues such as program requirements and limitations of the technology. These issues include:



- *Air Sealing:* More than half of the respondents raised concerns with the rationale regarding the 10% air sealing requirement and would like the measure to be reevaluated. The perception is that reduction levels cannot often be met because the homes are already tight and the 10% cap is a barrier as it is not possible to reduce to that level. When air sealing requirements do not meet reduction levels this also influences their ability to claim some insulation measures.
- *Thermostats:* Some of the respondents reported that a high callback rate is reducing the usage of this measure. They indicated that some CAAs shy away from this measure due to problems with client education. Elderly clients often find them difficult to program and too often resulted in CAAs returning to clients home to assist them.
- *ECM motors:* Only one CAA interviewee indicated use of ECM motors. Other interviewees indicated that motors are not installed for a variety of reasons including perceived higher repair and maintenance costs once installed, and ECMs costing more to install than the rebate covers.
- *CFLs:* Interviewees expressed concern about CFL saturation in the market and that filling out paperwork for CFLs is too time-consuming when it is the only measure claimed.
- *Gas boiler replacement:* For at least one CAA interviewee, high efficiency (> 92% AFUE) furnaces cannot be installed due to excessive shipping costs in rural areas.

In the course of the interviews, some of the CAA managers expressed interest in the following energy-efficient measures for the RLI program:

- Gas water heaters;
- Insulation (foundation, perimeter and crawlspace);
- Refrigerator door gaskets and full incentives for refrigerators (because these will no longer be eligible under DOE programs).
- Increased incentives for high efficiency boilers; and
- Blower door tests.

In our interview with the CLEAResult RLI program manager, we learned that some, but not all, of these measures have been evaluated and determined to be not cost effective.

The cash-strapped CAAs were also interested in obtaining EU financial aid to help pay for ventilation requirements that have been recently required in Michigan. Interviewees reported that ASHRAE Health and Safety Standards add about \$1,500 per job. All respondents expressed an interest in EU contributing to help pay for those costs. Additionally, at least one respondent thought the program was not providing



adequate compensation for installing insulation properly. The interviewee noted that there are often unforeseen expenses in such installations such as paying for time and equipment to “deal with wiring in attics and cover costs incurred with venting.” The respondent would like to see those costs included in the price per square foot.

2.5.5 Processing Program Rebates

We asked the CAA managers some questions on processing RLI program rebates to identify if there were gaps or opportunities for improvements since this has been a subject of concern since 2010. Respondents identified two areas they would like to see the program make adjustments:

- 1) Streamlining the measure documentation submittal process; and
- 2) Streamlining and synchronizing the payment process.

These adjustments are more relevant than before due to staffing shortages for many CAAs in the post-ARRA environment. The following subsections discuss the CAA feedback on each of these suggested process improvements.

2.5.5.1 Streamlining the Measure Documentation Submittal Process

In general, the interviewees viewed the RLI program’s measure documentation requirements as excessive and requested that the RLI program streamline the process by eliminating content duplicated on other forms or for other grant sources. Some claimed that the time required to submit documents as evidence of measures installed is causing considerable hardship due to limited staffing.

To help reduce the measure documentation paperwork burden, they had some suggestions including making use of the database FAXPro, exploring whether paperwork submitted for DOE is sufficient evidence for EU’s documentation needs, and allowing information for prescriptive measures that can be purchased in bulk (e.g., CFLs, refrigerators) to only be reported on an annual basis or when measure efficiency changes. In general, they recommended that EU coordinate with the utilities and CAAs to develop solutions that are acceptable to all parties involved.

The following are some verbatim comments on this issue:

- “There is a lot of redundant information of the IWC form that we have to reiterate on the invoice for [EU] and with that you have to include the cost and scans for all the measures, insulation certificate etc. It doesn't support anything. To me it's one more set of data that doesn't add any value, and given our limited staff it's excessive. It's a huge burden and there is an extremely long wait to get the check.”
- “I'd like to see an increase in agency fees if there is a lot of paperwork. They need to reevaluate the process.”



- “Remittance seems to be a clunky process, having to fill out the invoice and attach all the scans and what's required in the scans. It's already approved at and looked as an eligible measure [by DOE]. I don't know that we need to have that level of review again to prove to [EU] that the measure should be rebated. It seems there could be better coordination there.”

2.5.5.2 Streamlining/Synchronizing the Payment Process

As CAA budgets are reduced to historically low levels, waiting too long to be reimbursed for measures installed can put additional strains on CAA finances. Some interviewees indicated that the current reimbursement system – which typically involves a six-week turnaround -- is neither fast enough nor consistent enough. Many of the CAA managers would have liked to see payment occur within 30 days or less. Additionally, some interviewees expressed interest in electronic transfers and/or receipt of advanced payments for higher-cost measures. Furthermore, the lag in payment is preventing the RLI program from reaching its full potential since CAAs have stopped using it weeks in advance of their year-end closure. “There hasn't been a real rhythm [with the payments],” said one interviewee, “it's sporadic and that's an issue.”

At least one interviewee said that the review process, prior to payment, could be more proactive in making corrections rather than holding up payments when oversights occur. “The agencies are short-staffed,” the interviewee said. “If the program could be more understanding of simple errors such as a date accidentally omitted and proceed with payment.”

Some interviewees also said that they spend too much time tracking small cost expenditures such as payments for CFLs. Some have even reported not submitting the paperwork due to what they view as a cumbersome process. “It passes through too many hands,” said one interviewee. “It's confusing because you're not dealing with the person who is sending it to you.”

2.5.6 Roles, Responsibilities & Program Guidelines

Respondents were asked to comment on various aspects of program management as outlined in the *Income Qualified Energy Optimization Program Guidelines with attachments A-G (“Guidelines”)*. CLEAResult distributed the Guidelines in May 2012. Our previous evaluation recommended the RLI program develop a guidebook to help CAA better understand the roles and responsibilities between MCAAA and CLEAResult. The Guidelines describes the process, responsibilities between MCAAA and CLEAResult, and the forms CAAs need to submit for payment. We asked CAA managers three questions on the subject:

- 1) How useful were the Guidelines?
- 2) Was there anything in the Guidelines you didn't know before?
- 3) Is there anything you would like to see included for future editions?



The large majority of interviewees (9 of the 11) found the Guidelines to be extremely useful. “We considered it useful, useful because it clearly defines the program,” said one CAA manager. However, the vast majority of respondents (10 of the 11) said that they were generally familiar with the content of the Guidelines and therefore there were no surprises.

The interviewees also had a number of recommendations on items which could be added to future editions of the Guidelines. These recommendations included:

- Develop a section on protocols for performing onsite inspections;
- Describe how clients will be contacted; and
- Describe inspection procedures and how CAAs will be informed of inspections.

In addition to these suggested additions to the Guidelines, the CAA managers also suggested changes in the RLI program’s standard operating procedures for site inspections including:

- Ensure onsite inspectors have a photo ID badge or some kind of credentials during the site visit;
- Provide CAAs the random sample of clients selected for inspections and therefore allow them to contact clients ahead of time in case they might be cautious or guarded about allowing the inspections; and
- Develop a client notification letter for each CAA that clearly states the purpose and provides a CAA point of contact that will enable the clients to follow up if they wish to verify the authenticity of the inspection request, and
- Provide CAAs the option to do an inspection ride-along.

2.5.7 Overall Satisfaction with Program Delivery

Respondents were asked to rate their satisfaction with the program roles and responsibilities, as outlined in the Guidelines, using a five-point scale where five equals “very satisfied” and one for “unsatisfied.” Results of those responses are presented in Table 2-6. The program achieved the highest satisfaction rating of 91 percent for the following program elements:

- Timely communication by phone and email;
- Face time or ability to meet in person with MCAAA or CLEAResult; and
- Overall satisfaction with MCAAA.

When we asked respondents “what’s going well,” we found they were most appreciative of the level of cooperation and assistance, and the flexibility and creativity that both MCAAA and CLEAResult



exhibited. They appreciated MCAA and CLEAResult giving them “permission for unique circumstances,” “being able to do as many measures as we [CAA] can,” and “being creative and finding different ways to spend [RLI funds] and committed to using CAA as a venue to do that.” Additionally, respondents were satisfied with the ease of reaching representatives, and their timely communication by email, and measures for which the program pays full cost. “I think it’s an excellent program in concept,” said one interviewee, “we are enjoying the rebates and it’s helping us extend our services to clients.”

Conversely, respondents were least satisfied (36% overall satisfaction rating) for:

- Claim payment process; and
- The quality assurance & quality control process.

Respondents were asked an additional open-ended question on aspects of the program that could be improved. Some of their suggestions included:

- The need to expeditiously process reimbursement checks was the most frequently-cited need for improvement;
- Improving planning and communication with DI programs;
- Simplifying or streamlining the number of DI programs;
- Increasing support fees for handling paperwork;
- Providing financial incentives to cover CAA additional costs for inspections, health and safety; and
- The possible addition of some new energy efficient measures (discussed above).



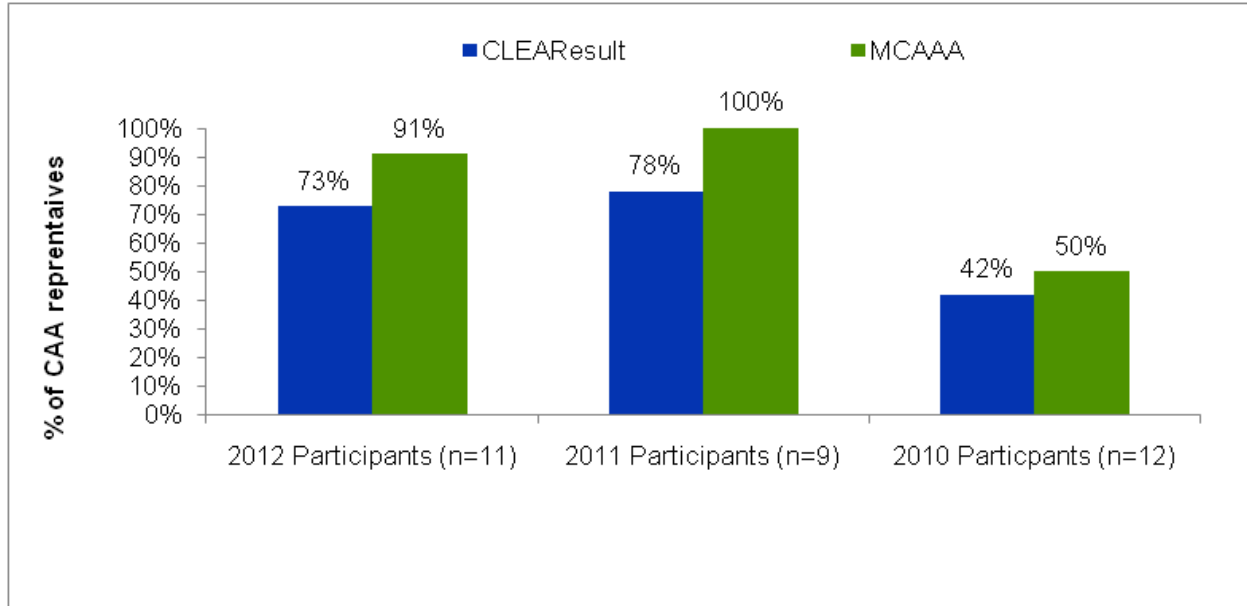
Table 2-6. CAA Satisfaction with RLI Program Elements

	1- Unsatisfied	2	Neutral	4	5 -Very Satisfied	Don't Know
Data flow and training	-	-	27%	64%	9%	-
Claim payment process	-	36%	27%	27%	9%	-
Program management including utility interface, measure allocation & monitoring program savings	-	9%	36%	45%	9%	-
Quality assurance & quality control process which are applied to 5% of all projects	18%	-	36%	27%	9%	9%
General responsiveness to emails sent to eallocations@cleareresults	-	-	18%	36%	18%	27%
Timely communication by phone and email	-	-	9%	55%	36%	-
Face time or ability to meet in person with MCAAA or CLEARResults	-	-	9%	64%	27%	-
Overall satisfaction with MCAAA	-	-	9%	55%	36%	-
Overall satisfaction with CLEARResults	-	-	27%	64%	9%	-

Figure 2-36 compares respondent overall satisfaction with MCAAA and CLEARResult from 2010 through 2012. Satisfaction levels reported for both organizations decreased from 2011. Reimbursement complaints and the amount of program paperwork and the efficiency in processing likely contributed to the overall decrease. This pattern suggests a persistent problem with program paperwork that the program has been unable to successfully address. These issues are now more apparent to the CAAs with the reduction in staffing. On the positive side, none of the respondents gave unsatisfied ratings. Those who were not somewhat or very satisfied provided a neutral satisfaction rating.



Figure 2-36. CAA Satisfaction with MCAAA and CLEARResult





3. Findings from Participant Surveys

3.1 ENERGY STAR Products Program

3.1.1 Program Description

The Residential and Small Business ENERGY STAR Products (ESP) Program was launched in November 2009 in all utility service territories. Incentives are provided to the customer through mail-in or retail point-of purchase rebates for ENERGY STAR products, such as CFLs, ceiling fans, clothes washers, dryers, dishwashers, faucet aerators, low-flow showerheads, and hot water pipe insulation. Not all measures are offered in all utility service territories. Table 3-1 shows the measure combinations offered by the utilities served by program. The ESP program also offers instant savings at participating retailers.



Table 3-1. Measures Offered by the ENERGY STAR Products Program

	CFL	Ceiling Fan	Clothes Washer	Clothes Dryer	Dishwasher	Faucet Aerator	Shower Head	LED Nightlight	Pipe Wrap
Alpena	x	x	x	x	x	x	x	x	
Baraga	x					x	x	x	
Bayfield	x					x			
Crystal Falls	x					x	x	x	
Daggett	x					x	x		
Dowagiac	x	x	x	x	x	x	x	x	
Indiana Michigan	x	x	x	x	x	x	x	x	
Gladstone	x	x	x	x	x	x	x		
Harbor Springs	x	x	x	x	x	x	x	x	
Hillsdale	x	x	x	x	x	x	x	x	
L'Anse	x					x	x		
MI Gas Utilities			x	x		x	x		x
Negaunee	x					x	x	x	
Norway	x		x	x	x	x	x	x	
SEMCO			x	x	x	x	x		
South Haven	x	x	x	x	x	x	x	x	
UPPCO	x	x	x	x	x	x	x	x	
WE	x	x	x	x	x	x	x	x	
WPS	x	x	x	x	x		x	x	
XCEL	x		x	x	x		x	x	



Major changes for 2012 included changes in retail store product availability, elimination of sales at utility offices, and segregation of how products are made available. At present, nearly all major hardware store retailers (e.g., Home Depot, Lowes, Ace, True Value) carry program-rebated CFLs according to program staff interviews. Kits are no longer sold through utility offices although they continue to be sold through community events. Table 3-2 lists the different combinations of measures sold in kits.

Table 3-2. Energy Saving Kit Contents

Measure Description	Equipment Included						
	CFL	LED NL	LED HL	Smart Strip	Faucet Aerator	Shower-head	Pipe Wrap
Kit 1	12	2			2	2	6
Kit 2	12	2					
Kit 3	12	4	1	1	2	2	6
Kit 4	12	4		1	2	2	6
Kit 5	12	4		1			
Kit 6			4				
Kit 7					2	1	6
Kit 8					2	1	6
Kit 9					2	1	6
Kit 10					2	2	6
Kit 11						2	

3.1.2 Methodology

For the 2012 evaluation we used the same survey instrument that we had used in 2011 with only minor changes since there were few changes in the energy-efficient measures offered by the program. For the 2010 evaluation of the ESP program, DNV KEMA had used one survey for CFL purchasers and a separate survey for all other measures rebated through the ESP program. With the addition of the energy saving kits in 2011 there were too many participants with both CFLs and other measures to make two different surveys worthwhile so we switched to a single survey for all participants and we continued this practice in 2012.

For the 2010 evaluation of the ESP program, we reported the results of each survey (CFLs and “Appliances”) separately. The “Appliances” report included true appliances such as washing machines and water heaters, as well as non-appliance, non-lighting measures such as low flow showerheads, faucet aerators, and pipe insulation (these measures were also the ones included in the kits, so they are referred to as “kit” measures for the remainder of this report).

In 2011, the single survey instrument included three different batteries of questions: one for CFLs, one for true appliances, and one for the kit measures. This allowed us to report results at a more granular level.



However, it also made the year-to-year comparisons more uncertain because the 2010 “Appliance” survey results included both true appliances and kit measures, which were reported separately in 2011 (Table 3-3). This report provides year-to-year comparisons wherever possible. However, the non-CFL comparisons which include 2010 data should be viewed with some caution because they are not “apples to apples” comparisons. The 2012 vs. 2011 comparisons, however, are more reliable because a very similar survey instrument was used in both evaluation periods.

Table 3-3. Measures Included in Results, 2010 - 2012

Measures	2012		2011			2010		
	Individual Rebate	Appliances	Kits	CFLs	Appliances	Kits	CFLs	Appliances
CFLs	x		x	x			x	
Ceiling fan		x			x			
Clothes dryer		x			x			
Dishwasher		x			x			
Washing machine		x			x			x
Faucet aerator	x		x			x		
LED nightlight	x		x			x		
Showerhead	x		x			x		x
Pipe insulation	x		x			x		x
Smart power strip	x		x			x		x
Holiday lights			x					x
Water heater								x

CLEAResult provided DNV KEMA with a sample population of 674 rebate recipients as of August 31, 2012. DNV KEMA contracted Opinion Search (OS) to conduct computer-aided telephone interview (CATI) surveys of program participants. OS dialed numbers up to eight times across at least two different weeks before they considered the number unreachable (dialed, but not contacted). OS completed interviews with 147 rebate recipients in December 2012. This resulted in a final response rate of 24 percent (Table 3-4).

Table 3-4. ENERGY STAR CATI Survey Dispositions

Sample Description	Number	Percent
Starting Sample	674	
Never Called	0	
Sample Used	674	
Invalid Sample	71	
Sample Used	603	
Complete	147	24%
Contacted-Not Eligible	17	3%
Refused	278	46%
Contacted-Not Completed	15	2%
Dialed-Not Contacted	145	24%

The CATI survey covered the following topics:

- Program awareness;
- Sources of information;
- Reasons for participation;
- Purchase location;
- Memory of in-store promotions and awareness of the rebates;
- The purchase experience;
- Equipment use;
- Satisfaction;
- Suggestions for program improvements; and
- Demographics.

Participants were stratified based on the type of equipment they received a rebate for. Results are weighted based on the number of participants in the population strata divided by the number of completed surveys.

3.1.3 Characterizing the Participants

The survey asked several demographic questions to help characterize the participants. The following are some highlights. Unless otherwise noted, these demographics are similar to 2011.

- *Housing characteristics:*
 - Almost all 2012 respondents (96%) own their homes.



- Almost all homes (93%) were detached, single-family homes, a slight increase from 2011 (90%).
- Almost all (96%) of homes were occupied 12 months per year. Of the handful of homes occupied less than year-round, all were occupied at least half the year, either six months (2%) or nine months (2%).
- The number of residents living in the home varied as follows: one resident (11%), two residents (46%), three residents (.15%), four residents (10%), five or more residents (17%). There were more households with five or more residents in 2012 (14%) than in 2011 (7%) and fewer with two residents in 2012 (46%) than in 2011 (54%).
- *Respondent/Household ages:*
 - The ages for the 2012 respondents varied as follows: under 40 (8%), 40 to 64 (48%), 65 or older (34%), and did not answer (10%). 2011 participants are older than 2010 participants.
 - About one-quarter (27%) of respondents households have at least one resident 65 or older. This is a drop from 2011 (47%).
 - Most (75%) households have no school-aged children (5 to 18). Most (88%) households have no children under 5. This is an increase in the number of households with children from 2011.
- *Respondent education:* The education of the 2012 respondents varied as follows:
 - High school diploma or less (22%, down from 35% in 2011);
 - Some college or technical school (18%, down from 27% in 2011);
 - Four-year college degree (35%, up from 21% in 2011); and
 - Some graduate school and/or advanced degree (16%, up from 12% in 2012).
- *Respondent income:* Respondents reported their 2011 pre-tax household as follows:
 - Less than \$50,000 (39%);
 - \$50,000 or more (42%); and
 - Did not answer (18%). In 2012, respondents were more likely to answer the income question.
- *Other respondent characteristics:*
 - Most 2012 respondents (56%) were male; in 2011 most (57%) were female.



- The surveys also asked about energy efficiency knowledge and attitudes. Most (94%) of respondents said they had heard of ENERGY STAR prior to the survey. This is an increase from 2011 (83%).
- Most respondents were either very concerned (73%) or somewhat concerned (25%) with reducing their home's energy use.
- Almost all respondents who were concerned with reducing their home's energy use were concerned with the cost of energy or reducing their utility bills. About one-third (32%) also cited environmental concerns, an increase from 2011 (25%).

3.1.4 Program Awareness

The survey asked the ESP program participants whether they were aware of the program before taking the survey. Over two thirds (69%) of respondents said that they were aware of the program, an increase from less than two-thirds (63%) in 2011. Both these figures are substantially less than the 92 percent of 2010 participants who said they were aware of the program. In last year's report, it was hypothesized that the reason for this drop off in program awareness since 2010 is probably due to number of respondents who purchased kit measures at events or utility offices. The kit measures were sold at discounted prices rather than being given away. Respondents were asked to provide their contact information, but it may not have been clear that they were participating in a specific program. The relative consistency between the responses to the 2011 and 2012 surveys, both of which were fielded when the program was dominated by the energy kits, seems to support this assumption.

In 2012, there were fewer statistically significant¹¹ differences in program .

- *Education:* Respondents with a high school education or less were more likely (42%) than those with some college (21%) to have *not* previously heard of the ENERGY STAR products program.
 - In 2011, respondents with some college and at least four year degrees were more likely (65% and 71% of respondents respectively) than those with high school diplomas or less (53%) to say they were aware of the program. In 2012, those with some college and at least four year degrees were again more likely (77% and 69% respectively) than those with high school diplomas or less (58%) to have prior ENERGY STAR awareness, but these differences were not statistically significant.
 - Energy Reduction Concern: Those who were concerned with reducing energy consumption were more likely (69%) than those not concerned (21%) to have prior awareness of the ESP program.

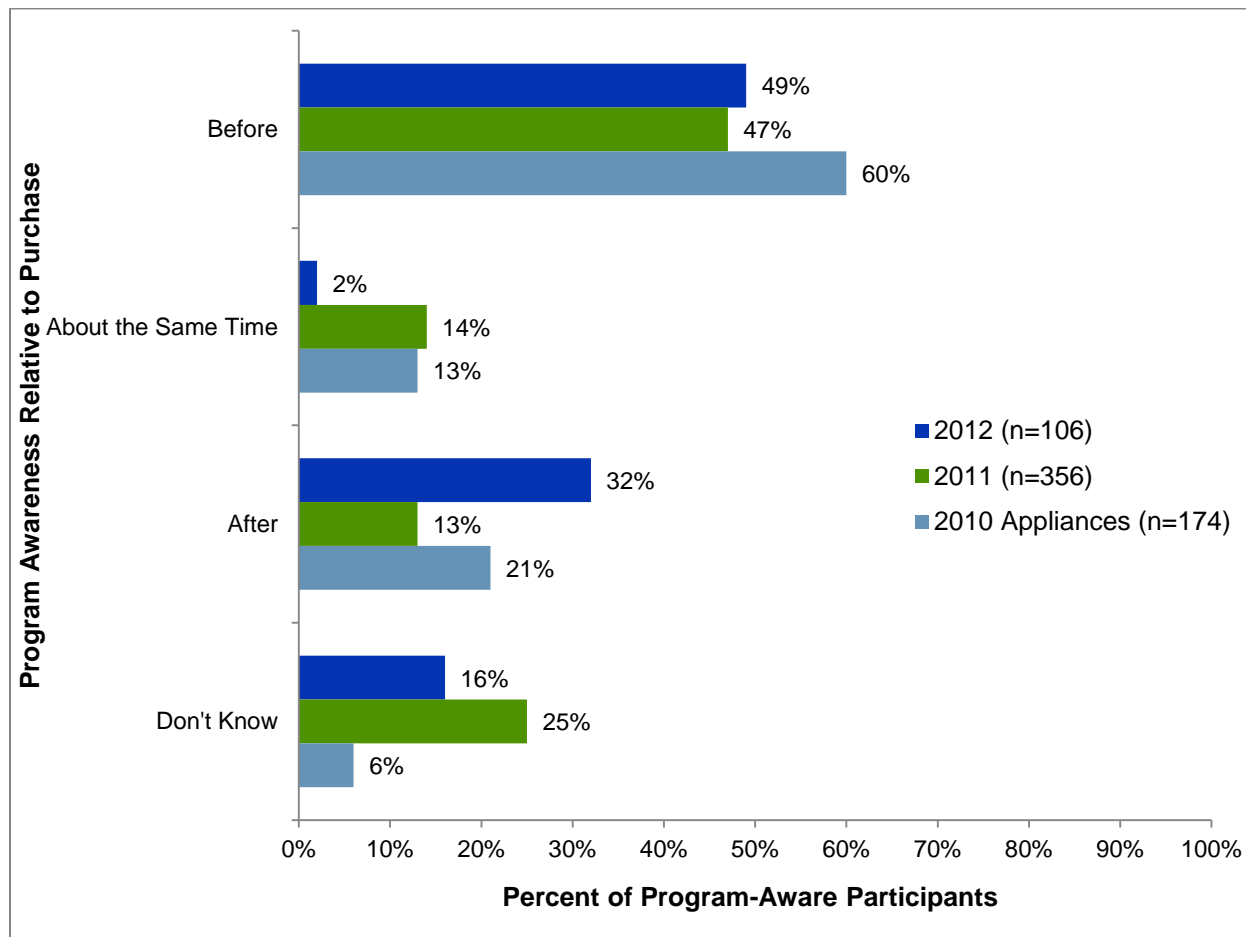
¹¹ All reported differences are statistically significant at a 90% confidence level.



We also asked the ESP program participants whether they became aware of the program before, at the same time, or after they had purchased the rebated equipment. The timing of this awareness is a one indicator of potential free ridership. About half (49%) of the respondents said they heard about the program before making the rebated purchase, similar to 2011 (47%). Only 2% said they heard about it at about the same time as the purchase, down from 14% in 2011 and 14% in 2010. Nearly a full third (32%) said they became aware of the program after they purchased program equipment, up from fifteen percent in 2011. The participants in this last group are most likely to be free riders since the program did not influence their purchase decision in any direct way.¹² About one-sixth (16%) said they did not know or did not remember when they heard about the program relative to their purchase (Figure 3-1)

¹² We say that they are likely free riders because it is possible that the program still influenced their purchases in some way that the customers were unaware of – e.g., encouraged the retailer to stock the items, encouraged the retailer to give the items more prominent placement in the store, etc.

Figure 3-1. Awareness Relative to Equipment Purchase



Relative to 2011, the amount of people with prior awareness stayed relatively constant. The number of people with awareness after their purchase increased while those who became aware at about the same time or did not recall decreased. There were a number of statistically-significant differences including household size, household income, respondent gender, and energy reduction concern,

- *Household Size:* Larger households, those with more than two residents, were more likely (44% of respondents) than smaller households (25%) to learn of the ESP program after making their purchase.
- *Income:* Households with reported annual income of less than \$50,000 were more likely (44%) than those who did not report their income (18%) to learn of the ESP program after making their purchase. Respondents with annual income greater than \$50,000 were more likely (62%) than those with annual income of less than \$50,000 (32%) to hear of the program before making their purchase.



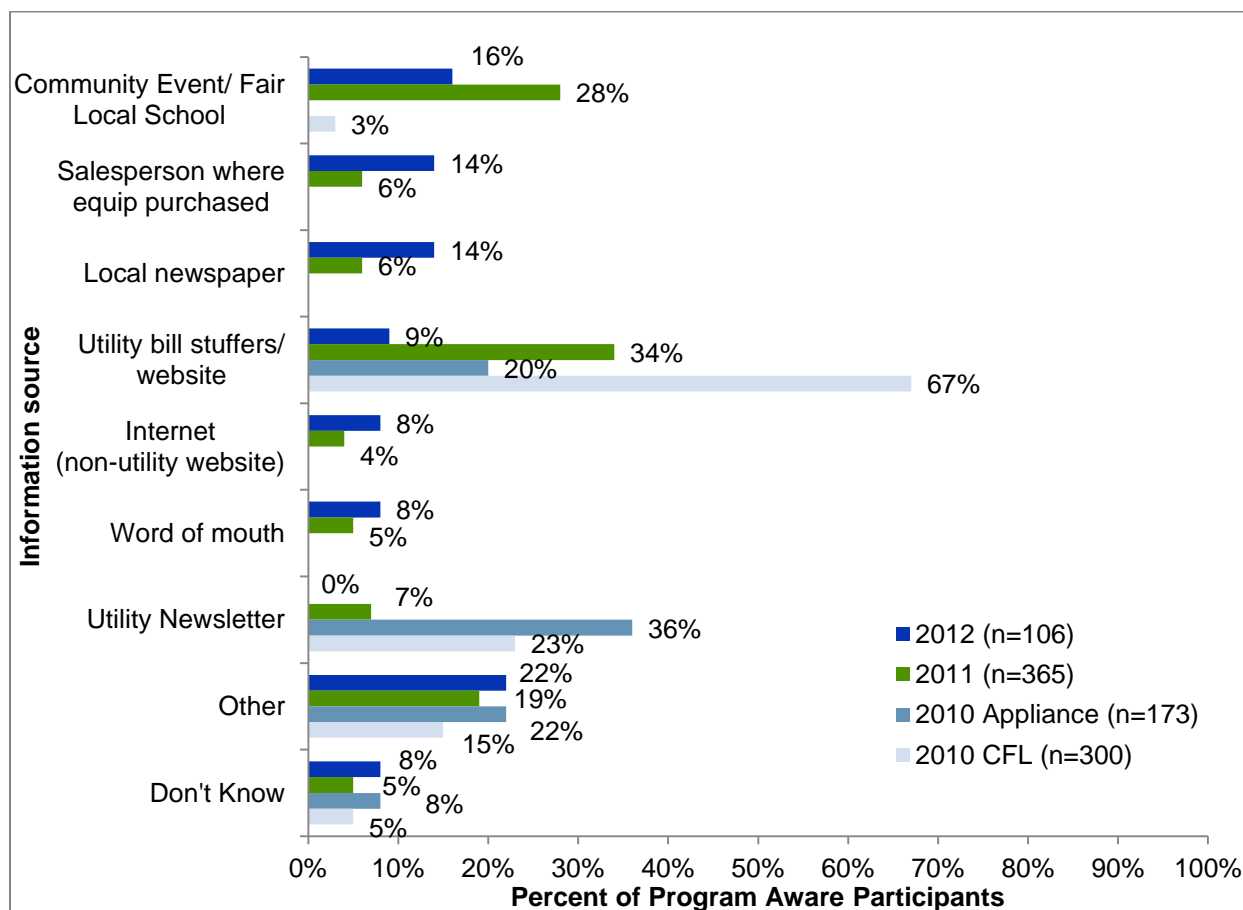
- *Gender*: Female respondents were more likely (43%) than male respondents (24%) to hear about the program after making their purchases.
- *Differences from 2011*: Education and information sources did not indicate statistically significant differences in 2012.

3.1.4.1 Sources of Information

The survey asked program-aware respondents how they heard about the ESP program. Figure 3-2 shows the sources of information that they reported. The figure shows large differences between 2011 and 2012. In 2011, utility bill stuffers (34%) were the most-cited sources of information, followed by community events (28%). In 2012, utility stuffers dropped to the fourth-most-common response with only nine percent of respondents. Additionally, community events at local schools were not cited at all.

Salespeople and local newspapers had a larger reported effect in 2012 than 2011, more than doubling in both categories from 6 percent of respondents to 14 percent.

Figure 3-2. Source of Information about ESP Program



Notes: Other sources of information in 2011 included: non-utility internet, state or national newspaper, TV/radio, other printed advertisements, workplace, utility website, local newspaper, salesperson, and word of mouth. Other sources of information in 2010 Appliances included: local newspaper, TV/radio, community/school events, workplace, utility website, salesperson, and word of mouth. Other sources of information in 2010 CFLs included: state or national newspaper, home improvement show, home inspector, workplace, utility website, local newspaper, salesperson, and word of mouth. Totals exceed 100% because multiple responses were accepted.

There were statistically-significant differences in sources of information depending on respondents' characteristics.

- Community event or fair:** Respondents who did not cite getting rebate as their motivation for purchasing the equipment were more likely (21%) than those who did purchase the equipment for the rebate (4%) to hear about the program from a community event or fair. Those who reported being completely satisfied were more likely (18%) than those less than completely satisfied (3%) to have heard about the program at a community event or fair.
- Salesperson:** Individuals with a high school education or less were more likely (30%) than those with some college (11%) to have heard about the program from the salesperson where the



equipment was purchased. Those who were satisfied were more likely (19%) than those who were completely satisfied (3%) to have heard of the program from the salesperson.

- *Local newspaper:* Respondents who were less than satisfied with their purchased equipment were more likely (58%) than those who were satisfied with their equipment (12%) to have heard about the program from the local newspaper. Respondents with household income below \$50,000 were more likely (22%) than those with annual income greater than \$50,000 to have heard about the program from the local newspaper. Participants who were previously unaware of the ESP program were more likely (100%) than those previously aware (85%) to *not* hear about the program from the local newspaper.
- *Bill stuffers:* There were no statistically significant reasons that respondents were more likely to hear of the program from bill stuffers. This is because while it was the fourth most common response, it only accounted for nine percent of responses.
- Other statistically-significant responses:
 - Respondents who did not purchase equipment to reduce energy consumption or bill were more likely (13%) than those who bought the equipment to reduce energy consumption (1%) to hear about the program from the utility website.
 - Respondents who were going to buy the equipment anyway were more likely (30%) than those who were not going to buy the equipment anyway (5%) to hear about the program from a website other than utility websites.
 - Those not purchasing equipment in order to get the rebate were more likely (21%) than those who did (4%) to hear about the program at community events or local fairs.

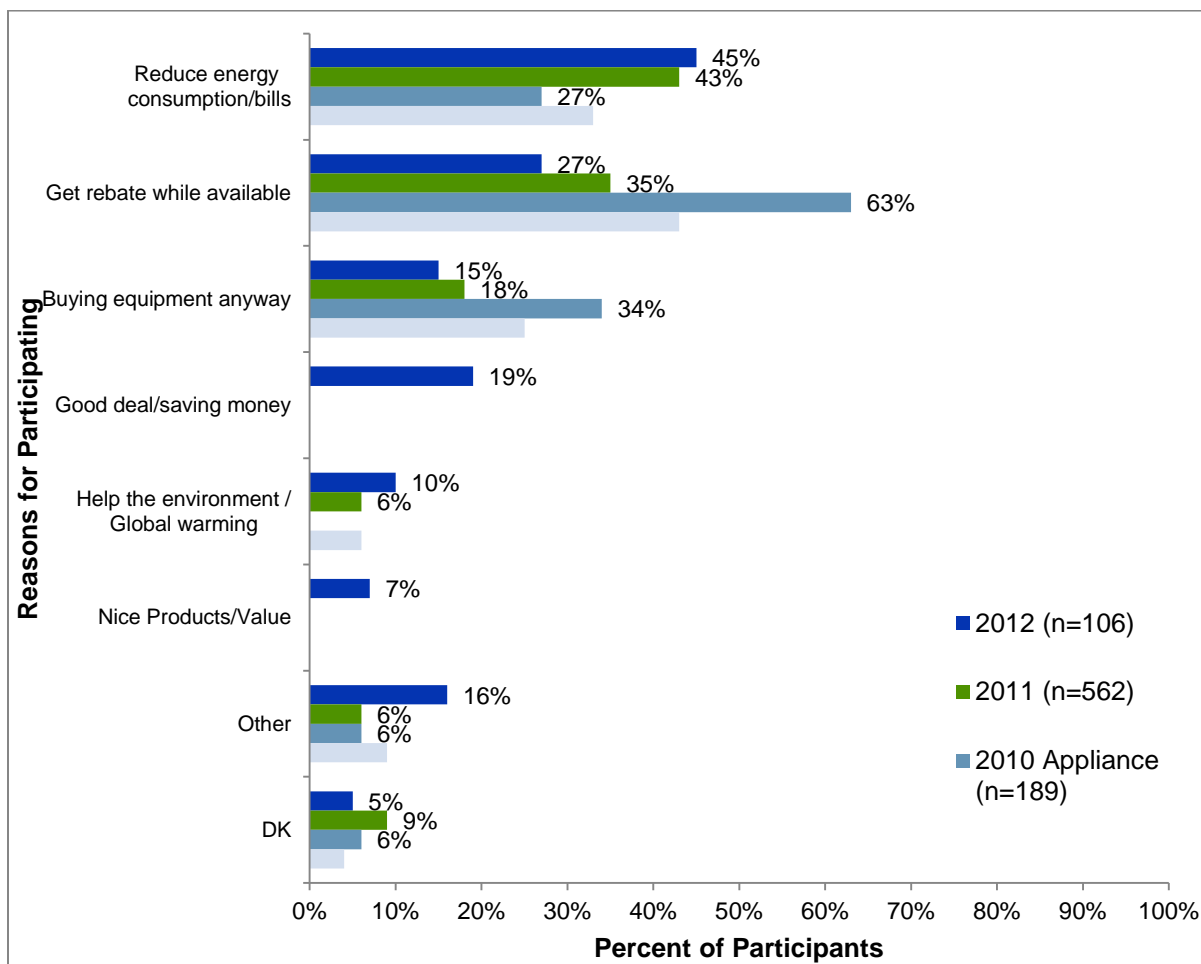
3.1.4.2 Reasons for Participating

The survey asked respondents why they decided to participate in the rebate program. Figure 3-3 shows the reasons respondents gave. About half (45%) of respondents said they wanted to reduce their energy bills or consumption. Another quarter (27%) said they wanted to get the rebate while it was available, a decrease from 2011 and 2010 (35% and 63% respectively). Another 15 percent said they probably would have bought the equipment anyway. A large response category was new in 2012, those looking for a good deal or ways to save money (19%). This response may be simply a new distinction from getting the rebate



while available or buying the equipment anyway, meaning that some of those looking for a good deal may be free riders along with those buying the equipment anyway.¹³

Figure 3-3. Reason for Participating in Rebate Program



Notes: Other reasons in 2012 included: Curiosity or thought a good idea, free program Other reasons in 2011 included: free bulbs, peer pressure, trying out equipment, and getting equipment at a trade show or fair. Other reasons in 2010 Appliances included: trying out the equipment, and making the equipment affordable. Other reasons in 2010 CFLs included: free bulbs, try out CFLs, and it seemed like a good program. The total exceeds 100% because respondents were allowed to give multiple responses.

There were statistically-significant differences in the stated reasons for participating in the program depending on respondent characteristics. However, there were fewer than in the prior year survey and evaluation.

¹³ We say “likely” because even though these customers said they were going to purchase the equipment regardless of the program, this does not mean that the program did not influence their purchase decision in some of the ways mentioned in the previous subsection.



- *Reduce energy bill/consumption:* In 2011, the survey revealed statistically-significant differences in education levels, income levels, ENERGY STAR awareness, first time CFL purchasers, and program information sources. In 2012, none of these presented significant differences. The areas where there were differences included:
 - *Equipment purchase decision.* Unsurprisingly, those who purchased the equipment to reduce energy consumption had a negative correlation with purchasing for other reasons. Individuals who bought equipment to get the rebate were less likely (16% of respondents) than those who did not (41%) to also purchase the equipment to reduce energy consumption and bills. Similarly, those who were going to buy the equipment anyway were less likely (15%) than those who were not planning on buying the equipment anyway (36%) to also purchase the equipment to reduce energy consumption and bills.
 - *Equipment satisfaction:* Respondents who reported being less than satisfied with their equipment were more likely (100%) than those who reported being satisfied (67%) to not have purchased the equipment to reduce energy consumption and bills.
- *Getting the rebates:* In 2011, the survey revealed statistically significant differences in those saying they participated in the program to get the rebates based on participant categories such as ESP program awareness and whether they were first time CFL purchasers. In 2012, there were statistically significant differences among respondents saying they participated in the program to get the rebates in the following participant categories:
 - *Reason bought equipment:* Respondents who purchased the equipment were less likely (12% of respondents) than those who did not (35%) to also purchase the equipment in order to get the rebate while it was available.
 - *Information source:* Respondents who learned of the program at a community event or fair were less likely (7%) than those who did not (31%) to purchase equipment to get the rebate while it was available.
 - *CFL satisfaction:* Respondents who were satisfied with their CFLs were more likely (100%) than those who were less than satisfied with the CFLs (84%) to not purchase the equipment to get the rebate while it was available.
 - *Likely to purchase CFLs:* Respondents who reported being very likely to purchase CFLs in the future at full price were more likely (100%) than those who were less than likely to purchase CFLs at full price (83%) to not purchase the equipment to get the rebate while it was available.
 - *CFL experience:* First time CFL purchasers were more likely (100%) than repeat purchasers (86%) to not purchase the equipment to get the rebate while it was available.



- *Going to buy equipment anyway:* In 2011, the survey revealed statistically-significant differences in those saying they were going to purchase the equipment anyway based on participant categories such as ESP program awareness and those who were first time CFL purchasers. In 2012, there were statistically significant differences in:
 - *ENERGY STAR awareness:* Respondents who were aware of ENERGY STAR were more likely (11%) than those not aware (0%) to say they were going to buy the equipment anyway.
 - *Information Source:* Respondents who became aware of the program through community events or fairs were more likely (100%) than those who learned through other means (88%) to not say they were going to buy the equipment anyway.
- *Good deal/Saving money:* In 2011, this reason for participating in the program was not registered and appears to be a new large category of responses. In the 2012 survey this response did have a number of statistically-significant differences:
 - *Reduce energy consumption:* Respondents who did not purchase equipment to reduce energy consumption and energy bill were more likely (25%) than those who did (8%) to purchase equipment because it was a good deal or to save money.
 - *Equipment satisfaction:* Respondents who were less than satisfied with their equipment were more likely (79%) than those who were satisfied (15%) to have purchased the equipment because it was a good deal or to save money.
 - *Satisfaction:* Respondents who were less than completely satisfied were more likely (34%) than those completely satisfied (12%) to have purchased the equipment because it was a good deal or to save money.
 - *Information source:* Respondents who learned of the program from a local newspaper were more likely (45%) than those who did not (15%) to have purchased the equipment because it was a good deal or to save money. Also, respondents who learned of the program from a contractor or salesperson were more likely (100%) than those who did not (77%) to *not* have purchased the equipment because it was a good deal or to save money.

3.1.4.3 Reasons for Purchasing Kits

The survey asked respondents who purchased kits containing multiple measures why they chose to purchase one.¹⁴ The most common response was for energy efficiency with 40 percent of respondents. This was by far the most popular answer (Figure 3-4). Good price (27%) and saving money (18%) were

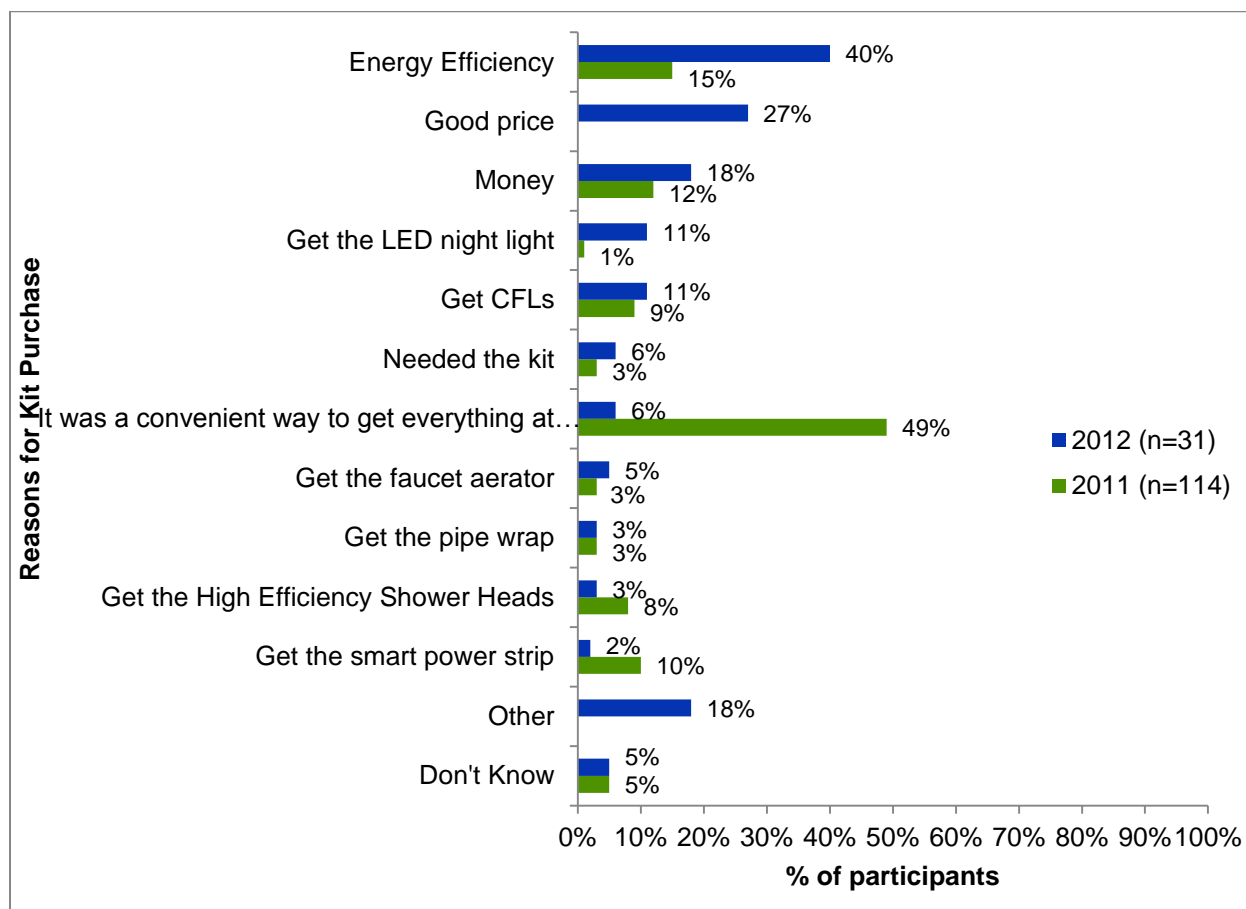
¹⁴ The “kits” that contained only a single measure were not asked about in this question.



the next most popular answers. Of the specific measures contained in the kits, the LEDs (11%) CFLs (11%), and faucet aerators (5%) were the most often cited singular measures that motivated the kit purchases. The results for individual measures should be interpreted with caution, however, because not all measures were included in all kits.

A number of the responses showed significant differences from 2011. The most significant change was the large drop in respondents citing the convenience of purchasing everything at once. This dropped from 49 percent to 6 percent. It is not clear why this response, which was so common in 2011, dropped so drastically in 2012. This drop was offset by increases in other responses: energy efficiency increased to 40 percent from 15 percent in 2011. The kits being a ‘good price’ was a new response in 2012 and accounted for over one-quarter of respondents (27%).

Figure 3-4. Reasons for Purchasing Kit



The total exceeds 100% because respondents were allowed to give multiple responses.

There were statistically-significant differences in the stated reasons for purchasing the kits depending on respondent education, awareness of ENERGY STAR, program information sources, and whether the respondent was concerned with reducing their home energy use:

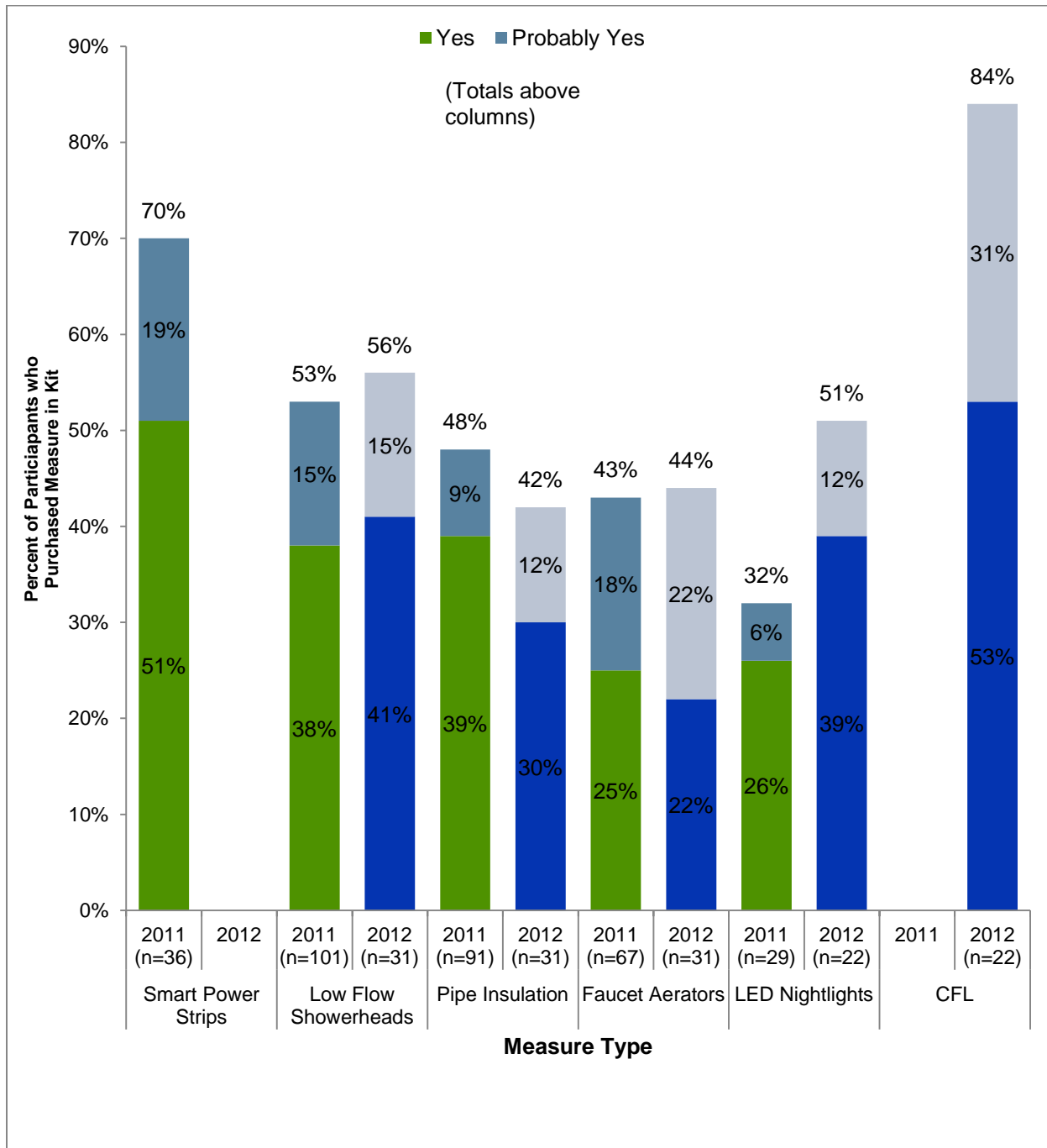


- *Energy efficiency:* Statistically-significant differences for participants who cited energy efficiency as their reason for buying the kits included:
 - *Income:* Respondents who did not know or refused to report their income were more likely (100%) than those earning less than \$50,000 per year (50%) or those making more than \$50,000 per year (65%) *not* to have purchased a kit for energy efficiency.
 - *First time CFL purchase:* Respondents who reported that this was the first time purchasing CFLs were more likely (74%) than those who did not or did not know (27%) to cite energy efficiency.
 - *Equipment satisfaction:* Respondents that were less than satisfied with their equipment were more likely (100%) than those who were satisfied (58%) to not cite energy efficiency.
- *Good price:* Statistically-significant differences for participants who cited a good price as their reason for buying the kits included:
 - *Income:* Respondents with household income less than \$50,000 per year were more likely than those with household income greater than \$50,000 per year (6%) or those who did not report annual income (0%) to purchase the kits because they were a good price.
 - *ENERGY STAR:* Respondents who reported being aware of ENERGY STAR were more likely (29%) than those who were not (0%) to purchase the kits because they were a good price.
 - *Satisfaction:* Respondents who reported being satisfied overall were more likely (45%) than those who were not (0%) to purchase the kits because they were a good price.

3.1.4.3.1 Effect of Kits on Purchase Decision

The survey asked respondents who purchased measures in kits how likely they would have been to purchase the measures if they were sold separately. Most respondents would purchase CFLs (84%), low flow showerheads (56%) or LED nightlights (51%) separately from kits. A minority of respondents said they would purchase pipe insulation (42%), faucet aerators (44%), or LED night lights (32%) separately from the kits. Figure 3-5 compares the responses of the 2012 participants with those from 2011.

Figure 3-5. Likelihood of Purchases without Kits



Smart power strips were included only in certain kits and not offered separately for rebate or discount so they were not included in the survey in 2012. CFLs were also asked about separately for the first time in

2012. Among other measures, the largest difference between 2011 and 2012 is the increase in LED nightlights. However, that difference is not statistically significant.¹⁵

There were statistically significant differences within 2012 response categories:

- *Pipe wrap:*
 - *Gender:* Male respondents were more likely (57%) than female respondents (28%) to say that they would have or likely would have bought pipe wrap without the kit.
 - *CFL purchase:* First time CFL purchasers were more likely (74%) than those who were not (25%) to say that they would have bought pipe wrap without the kit.
- *Faucet aerators:*
 - *CFL purchase:* First time CFL purchasers were more likely (74%) than those who were not (23%) to say that they would have bought faucet aerators without the kit.

3.1.4.4 Purchase Environment - Appliances

The survey asked respondents a series of questions about their purchasing experience. These questions included what type of store they purchased the rebated equipment from, whether they recalled any signs or other marketing materials at the store when they purchased the equipment, and whether they received any sales pitch or product information from salespeople at the time of purchase.

The survey asked about the purchase environment of dishwashers, washing machines, clothes dryers, and ceiling fans individually. The results in this section are dominated by purchasers of washing machines which had 43 respondents – only ten respondents purchased dishwashers, and only five purchased clothes dryers. No respondents who were successfully contacted for interview purchased a ceiling fan. The results in this section show the combined data for all four types of appliances compared to the 2010 Appliance survey.

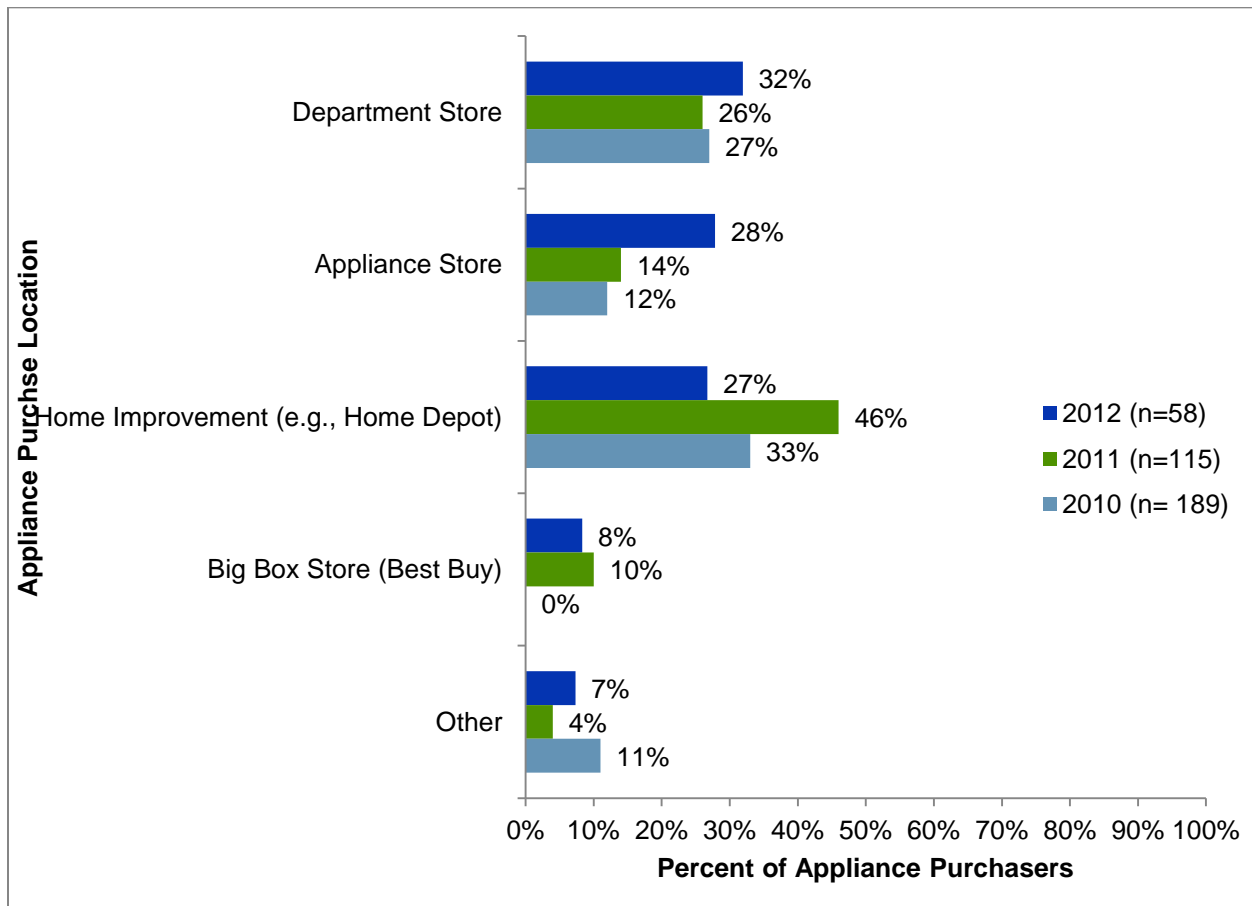
3.1.4.4.1 Purchase Location

Approximately one-third (32%) of respondents purchased their appliance at a department store (Sears, WalMart, etc.) with over one-quarter purchasing at appliance stores (28%) or home improvement stores such as Home Depot or Lowe's (27%). Figure 3-6 shows the full range of responses.

¹⁵ 2011 vs 2012 LED nightlight test of proportions produces a z-score of -1.37, which is below a 90% confidence level.

Appliance purchasers in 2012 were more likely to purchase their appliances from department stores than in 2011 and less likely to purchase from home improvement stores. Part of this is due to there not being any ceiling fan purchasers being interviewed in 2012. However, this only accounts for part of the difference as 2011 home improvement purchase location drops from 46 percent to 43 percent when ceiling fans were removed for that year. By in large, all ESP-rebated appliances were purchased more from home improvement stores in 2011 than 2012.

Figure 3-6. Appliance Purchase Locations



Note: 2012 Other purchase locations included furniture stores, manufacturers and unspecified other locations. 2011 Other purchase locations included: warehouse stores, manufacturers, and unspecified other locations. 2010 Other purchase locations included: supermarkets, drug stores, contractors, the Internet, and from the utility. The totals exceed 100% because respondents were allowed to give multiple responses.

Due to the small number of respondents for dishwashers and clothes dryers, there were not statistically-significant differences in respondent characteristics. There were a couple of statistically-significant differences in purchase locations for washing machines based on respondent characteristics.

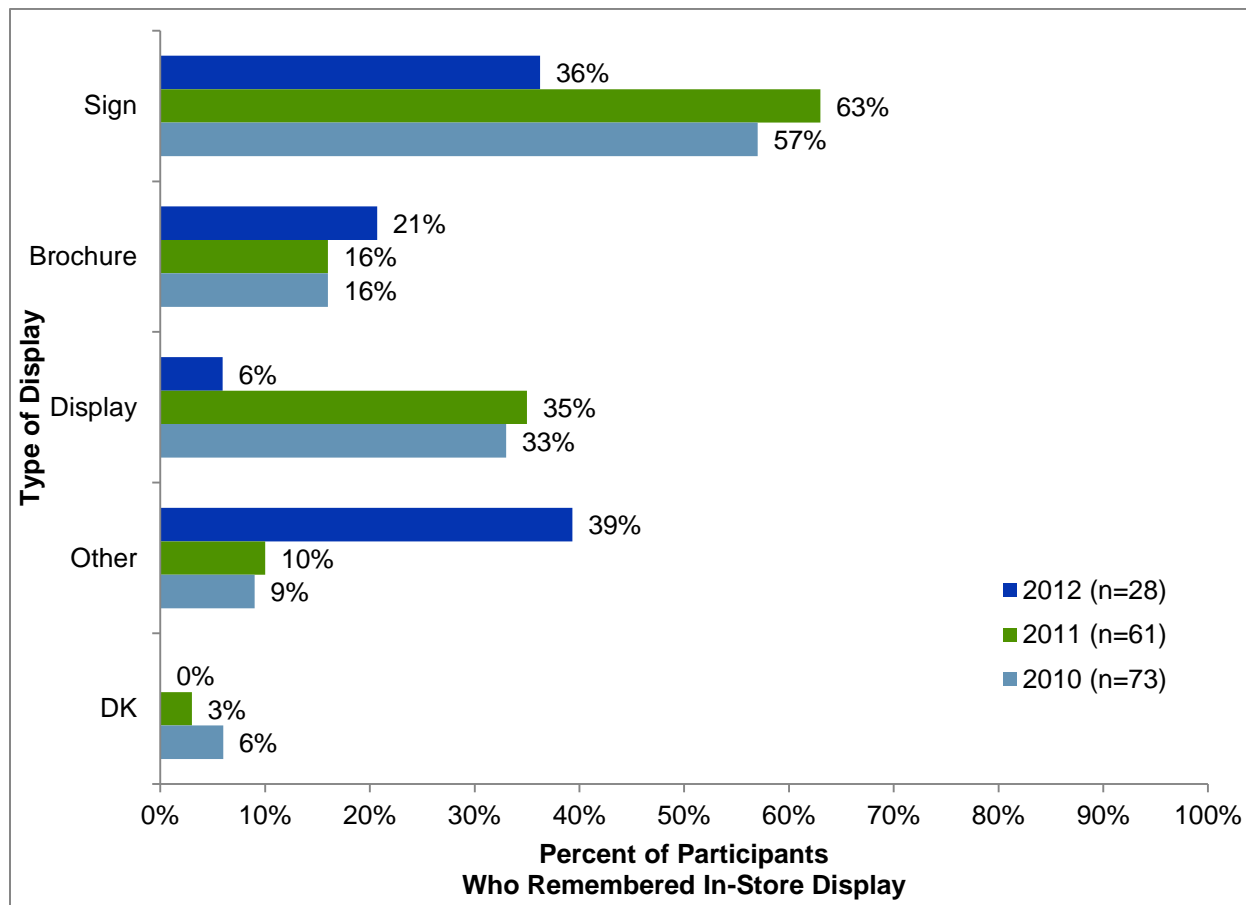


- *Household size:* Respondents with two or fewer household residents were more likely than those with three or more residents to purchase washing machines at a department store (42% vs. 14%). These differences are probably due to age and children demographics.
- *Reason equipment bought:* Respondents who stated that they were going to buy the equipment anyway were more likely (69%) to purchase the washing machine at a local appliance store than those who were not planning on buying the washing machine anyway (23%).

3.1.4.4.2 In-Store Promotions - Appliances

The survey asked whether respondents recalled any signage, prominent placement or other promotional materials at the store when they bought the rebated equipment. Nearly half (48%) of respondents said they did remember some kind of promotional materials, an amount that is not statistically different from 2011. Respondents that remembered seeing in-store promotional materials were asked what kind of materials they remembered seeing (Figure 3-7). Over one-third (36%) who remembered an in-store promotion said they saw a sign, a statistically-significant decrease from 2011. A fifth (21%) said they saw a brochure. Six percent of the 2012 respondents who recalled in-store materials recalled a display, a significant drop from a third in 2011 and 2010. This drop in customers recalling full displays corroborates program staff who claimed that expansion into ever larger retailers is met with more restrictive rules on in-store promotional materials. This may also explain the significant increase in the Other category from previous years. In 2012, 36 of 39 percent in the other category is comprised of stickers, a form of marketing that is generally small and more commonly permitted by large retailers according to program staff. All results are displayed in Figure 3-7.

Figure 3-7. In-Store Information Displays Recalled by Purchasers of Program-Rebated Appliances



Note: Other in-store promotions included: stickers and online information. The total exceeds 100% because respondents were allowed to give multiple responses.

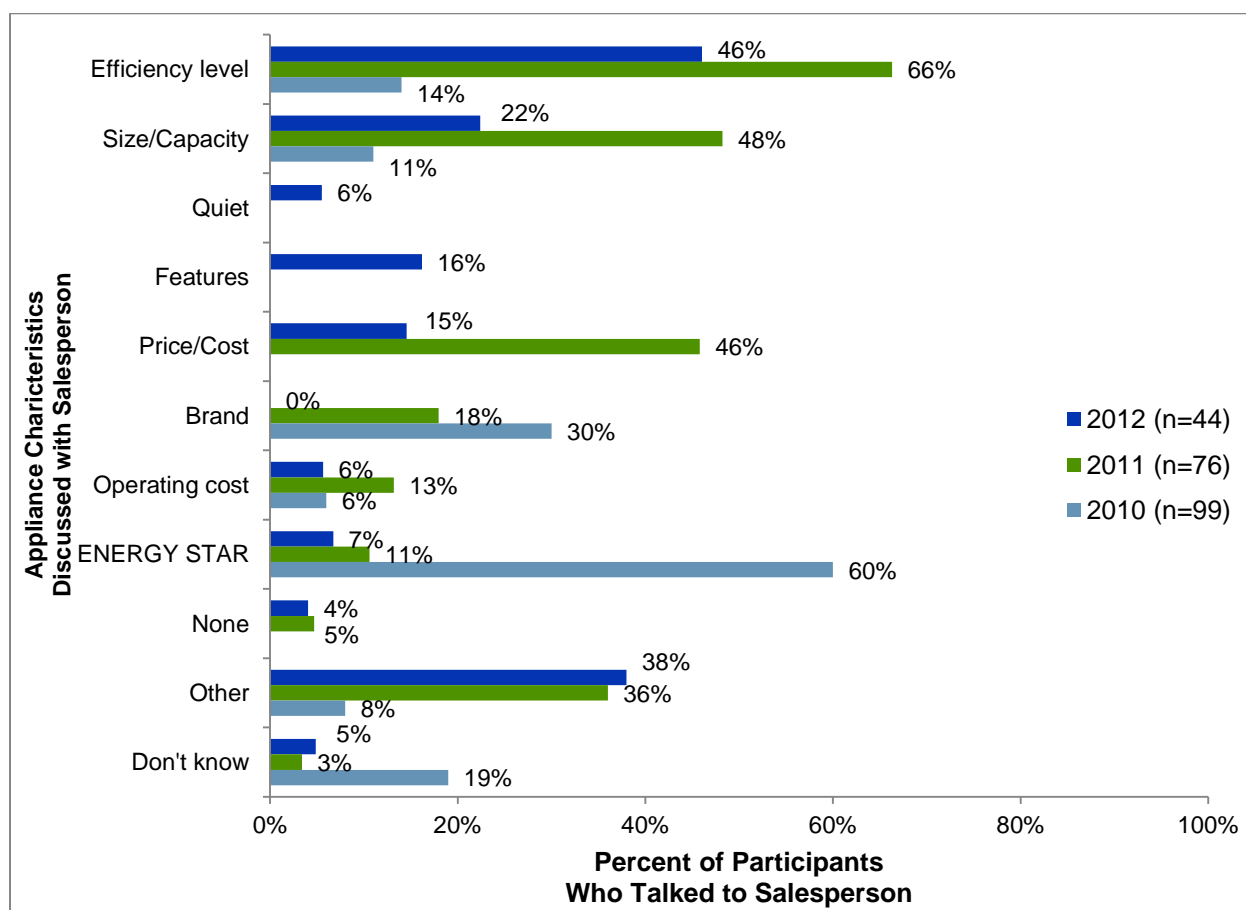
The survey also asked if there were any special rebates or price discounts in the store when the respondent purchased the equipment. Over half (54%) of respondents said yes. These respondents were asked who offered the rebate or price discount. The large majority (84%) of the respondents who remembered a special rebate or price discount said it came from the store where they purchased their equipment, the remainder citing the equipment manufacturer.

3.1.4.4.3 Interaction with Salespersons

The survey asked whether the respondent spoke with any salespersons at the time of purchase. Nearly all (92%) of respondents said they had. This was a significant increase from 2011 when 68 percent of respondents said that and 2010 when only 45 percent of respondents said they spoke to salespeople. This change is most likely due to the year to year differences in equipment covered by the evaluation (true appliances rather than appliances and kit measures).

Respondents who indicated they talked to a salesperson were asked what characteristics of the equipment, if any, the salesperson talked to them about. Less than half (46%) of salespersons discussed equipment efficiency levels with respondents, a significant drop from 66 percent in 2011. Size or capacity was again the second-most-common characteristic, but also at a significant drop from 48 percent in 2011 to 22 percent in 2011. These drops can be attributed to a couple of other features becoming prominent and cited in 2012 – quiet (noise) and features. This may be explained by customers looking for equipment that satisfies more than mere frugality and efficiency considerations after several years of recession. Figure 3-8 shows the full range of responses.

Figure 3-8. Equipment Characteristic Discussed with Salesperson



Note: Other included: Rebates, durability/warranty, color, warranty, quality upgrade, ease of installation and availability, top load vs front load (washing machines) and amount of water used..

3.1.4.4.4 Effect of Rebates on Purchase Decision

Almost all respondents (97%) who purchased rebated appliances said they would have bought the appliance with or without the rebates. Ninety-one percent of the respondents who purchased dishwashers and 86 percent of those who purchased clothes dryers said they would have purchased those appliances



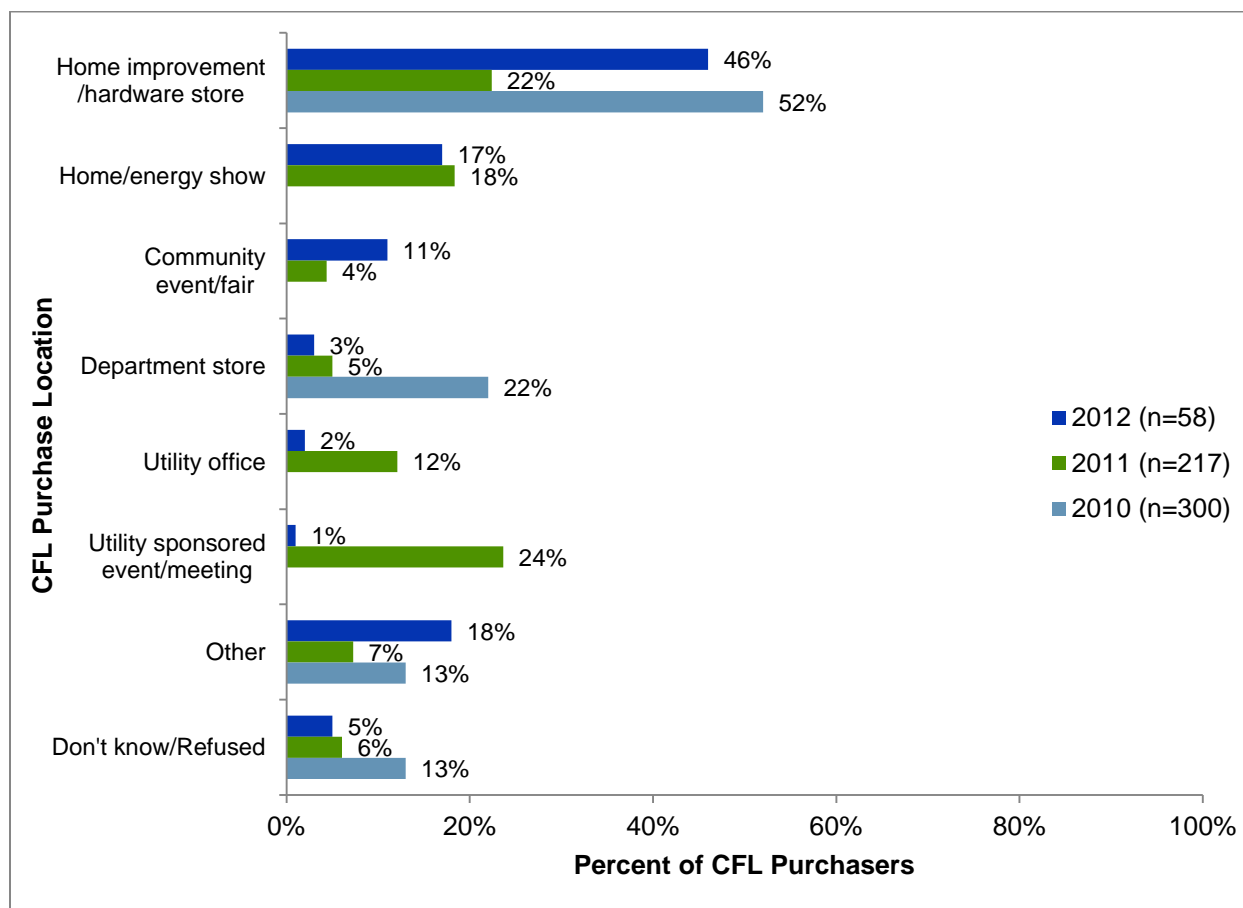
without the rebate. Ninety-nine percent of the respondents who purchased washing machines would have purchased them without the rebates.

3.1.4.5 Purchase Environment – CFLs

3.1.4.5.1 Purchase Location

There were a number of differences from 2011 to 2012 in terms of where participants reported purchasing their CFLs. In 2012, nearly half (46%) of respondents reported their CFL purchase location being a home improvement or hardware stores, similar to 2010, both marking a significant difference from 2011 (22%). This is largely attributable to the program pushing CFL rebates into the majority of hardware and major home improvement stores in the service territories. Home energy shows were again the second most common location in 2012 (17%), remaining statistically unchanged from 2011 (18%). Two significant drops are seen in distribution at utility offices (12% in 2011 to 2% in 2012) and utility events (24% to 1%). This is likely attributable to the cessation of CFL distribution directly through most utilities. Cited CFL purchase locations are noted in Figure 3-9.

Figure 3-9. CFL Purchase Location



Note: Other included: big box stores (Best Buy), warehouse stores, Internet, mail-order catalog, kit, and supermarket

There were several statistically-significant differences in CFL purchase locations based on several respondent characteristics including sources of program information, gender, awareness of ENERGY STAR, and reasons for purchasing CFLs.

- *Home improvement stores:*
 - *Gender:* Men were more likely (61%) than women (26%) to purchase CFLs at a home improvement store.
 - *Program awareness:* Respondents who heard about the program before or at the same time as their purchase were more likely (52%) than those who heard about the program after (22%) to purchase CFLs at the home improvement store.

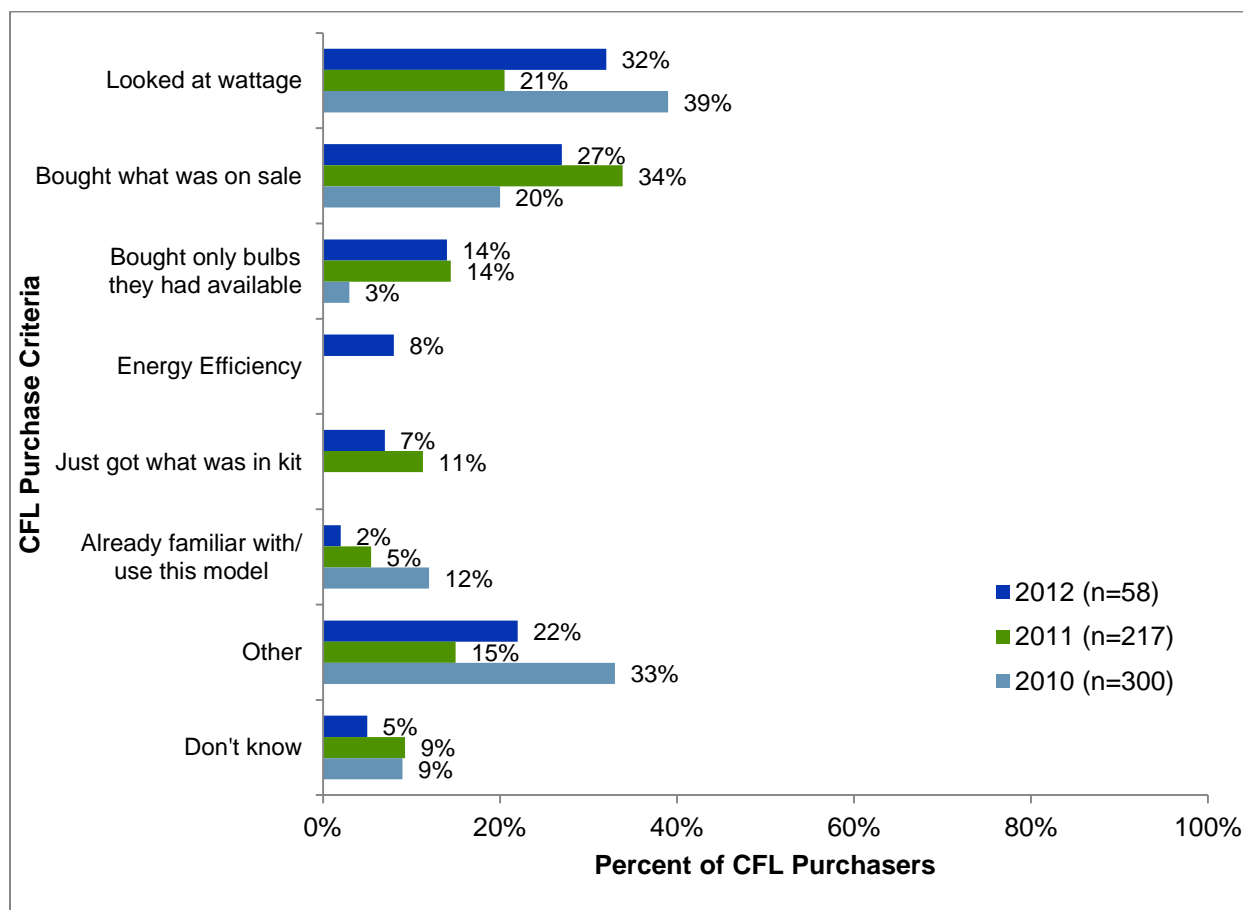


- *Full price:* Respondents who said they were less than very likely to purchase CFLs at full price were more likely (53%) than those who would pay full price (25%) to purchase CFLs at a home improvement store.
- *Information source:* Respondents who learned of the program at community events were less likely (16%) than others (47%) to purchase CFLs at a home improvement store. Likewise, those who learned of the program from the local newspaper were also less likely (11%) than others (47%).
- *Home energy show:*
 - *Education:* Respondents with a four-year degree were more likely (13%) than those with some college (0%) or less (0%) to purchase CFLs at a home energy show.
 - *Program awareness:* Respondents who heard about the program before or at the same time as their purchase were more likely (16%) than those who heard about the program after (0%) to purchase CFLs at the home energy show.
- *Home Recreation Show:*
 - Respondents with some college education were less likely (0%) than those with a four year degree or more (7%) or those with a high school diploma or less (14%) to purchase CFLs at a home/recreation show.

3.1.4.5.2 Purchase Criteria

The survey asked respondents whether several different criteria were a reason for purchasing the CFLs. The most commonly reported criterion was that respondents looked at the wattage (32%), a significant change from 2011 (21%). About one-quarter (27%) said they bought what was on sale. Another 14 percent said they bought the only bulbs available at the purchase location. Just under one-tenth (8%) said they choose specifically on energy efficiency (Figure 3-10).

Figure 3-10. CFL Purchase Criteria



Other included: lumens, store staff recommendation, friend/family recommendation, brand name, need, utility logo/sticker, and unspecified other reasons.

There were a few statistically-significant differences in respondents' reasons for purchasing CFLs:

- *Looked at wattage:*
 - *Education:* Respondents with a four-year degree or more were more likely (38%) to look at the wattage to decide which CFLs to purchase than those with a high school diploma or less (15%).
 - *Gender:* Men were more likely (45%) than women (12%) to look at the wattage.
- *Bought what was on sale:*
 - *Income:* Respondents who did not report income were more likely (61%) than those who earned \$50,000 or less per year (19%) to choose CFLs based on what was on sale.

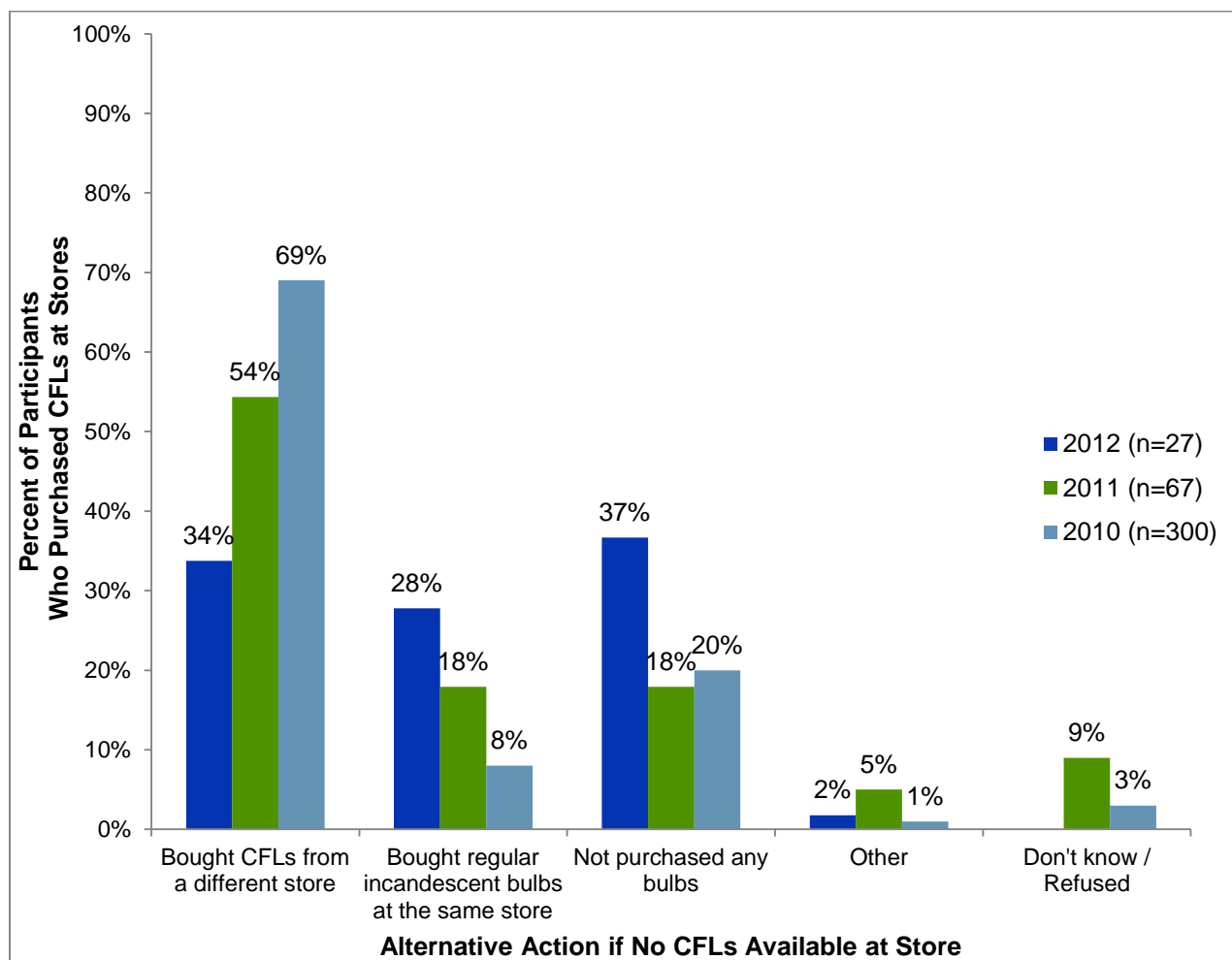


- *Program awareness:* Respondents who became aware of the program after purchasing CFLs were more likely (33%) than those who became aware before or at the same time (6%) to decide on CFLs based on what was on sale.

The survey further asked respondents who purchased CFLs at a store what they would have done if the location where they purchased their CFLs did not have the ones they were looking for. The options we provided them included: buying regular incandescent bulbs at the same store, buying CFLs from a different store, or not purchasing any bulbs at that time. The most common response was to not purchase any bulbs at 37 percent, a significant increase from 2011 (18%). Respondents stating that they would buy incandescent bulbs also increased in 2012, but not a statistically-significant increase. Thirty-four percent of respondents stated they would purchase CFLs from a different store, a significant decrease from 2011 (54%, Figure 3-11).

2012 participants were the most willing in the three years of this survey to purchase incandescent bulbs from the same location and the least willing to go to another store to get CFLs. This finding suggests that 2012 participants were less motivated specifically to purchase CFLs than 2011 or 2010 participants.

Figure 3-11. CFL Purchase Alternatives



There were a handful of differences amongst respondents’ characteristics.

- *First time purchasers:* First time purchasers were more likely (100%) than others (30%) to not have purchased any bulbs at all.
- *Energy reduction concern:* Respondents who were not concerned with reducing energy use were more likely (100%) than those who were concerned with energy use (34%) to not purchase any bulbs at all.
- *Was going to buy anyways:* Those respondents who would have bought the bulbs without the program were more likely (100%) than those who would not have bought anyway (38%) to have bought the CFLs at another store.



These indicate that the shift seen over several years away from the majority of respondents being dedicated to purchasing CFLs is due to more individuals who are not as passionate about energy conservation purchasing CFLs. In other words, CFLs have become mainstream and are not as important to the average purchaser as they once were.

3.1.4.5.3 CFL Packaging

Some of the energy saving kits included CFLs. The survey asked respondents who purchased CFLs as part of the kits whether they would have purchased the CFLs separately. Most (84%) respondents said they would or possibly would do so.

The survey asked respondents whether they purchased CFLs in individual or multi-packs. Seventy percent of respondents said they got them in multi-packs. Another eight percent said they purchased individual bulbs, and another 18 percent said they purchased both individual and multi-packs.

There were a number of statistically significant-differences in the reported size of CFL packs. These included household size, education, purchase reason, and program information source.

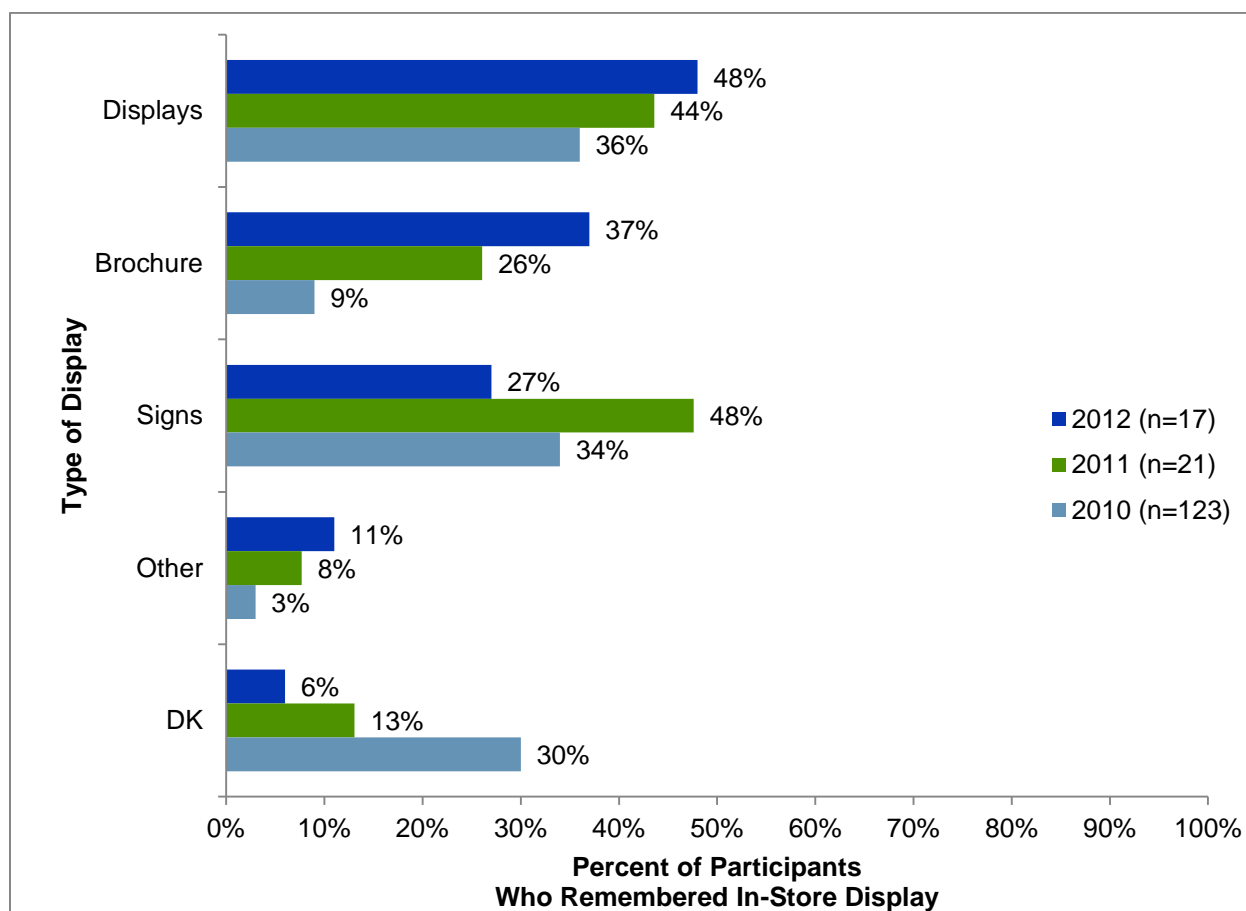
- *Household size:* Respondents with households larger than two people were more likely (100%) than those in smaller households of 1 or 2 people (61%) to purchase CFL multi-packs.
- *Education:* Respondents with a four-year degree or more were more likely (79%) than those with a high school diploma or less (32%) to purchase a multi-pack. Respondents with some college were more likely (100%) than either group. Respondents with a high school diploma or less were more likely (57%) than those with some college (0%) or a 4 year degree or more (5%) to purchase CFLs in *both* single and multi-packs.
- *Purchase reason:* Respondents who purchase CFLs to get the rebate were more likely (100%) than those who did not (68%) to purchase a multi-pack. Similarly, those who reported that they were going to buy the CFLs anyway were more likely (100%) than those who did not (70%) to purchase a multi-pack.
- *Information source:* Respondents who learned of the program from bill stuffers were more likely (100%) than others (72%) to purchase multi-packs. Those who learned of the program at community events or fairs were also more likely (100%) than others (71%).

3.1.4.5.4 In-store Promotions

The survey asked respondents who purchased their CFLs at a store whether they remembered any signage or marketing materials at the store at the time they purchased the bulbs. Two thirds (66%) of respondents said they did remember signage or promotions, a significant increase from 2011 (36%).

The survey followed up by asking any respondent who remembered a special promotion what kind of promotion they remembered. The most common answers were displays (48%), brochures (37%), or signs (27%, Figure 3-12).

Figure 3-12. In-store Information Displays - CFLs



The survey further asked if the respondents remembered any special promotions at the store at the time they purchased the CFLs. Half (49%) of respondents said they did. The majority of respondents who remembered a special promotion attributed it to the store (59%). Respondents attributed the promotions to their utility (14%), Efficiency UNITED (5%) less often. About 11 percent of respondents did not know or remember who offered the special promotion.

3.1.4.6 Purchase Environment – Kit Equipment

The survey included several questions for equipment that could have been bought as part of an energy saving kit or sold at utility sponsored events. All of the equipment included in kits or sold at events is also available at retail stores. For measures that were not parts of kits, including singular measures sold at events, the survey asked where respondents purchased the equipment.



3.1.4.6.1 Purchase Location

The majority of these measures were purchased via some direct interaction between customers and utilities or CLEAResult, rather than at retail stores. Table 3-5 shows where respondents said they purchased the measures. The “Other” category is the only one that includes retail stores. We assumed that any measure that was part of a kit was purchased at a utility sponsored event or office.

**Table 3-5. Purchase Location
Non-CFL Kit Measures**

Purchase Location	Smart Power Strips (n=333)	LED Night Lights (n=74)	Faucet Aerators (n=95)	Low Flow Showerheads (n=104)	Pipe Insulation (n=93)
Kit	11%	39%	70%	99%	99%
Utility sponsored event or meeting	30%	32%	11%	0%	0%
Home energy show	18%	14%	7%	0%	0%
Utility office	13%	3%	0%	0%	0%
Other	22%	4%	9%	1%	1%
Don't know/refused	7%	9%	2%	0%	0%

Other included: Community event/fair, Internet, mail order catalog, home improvement/hardware store, warehouse store, department store, drug store, and big box stores.

3.1.4.6.2 In-store Promotions

The survey asked any respondent who purchased this equipment in stores whether they remembered any special information or promotions at those stores. However, very few of these measures were purchased at stores. Only eight respondents (38%) who purchased kit measures at the stores remembered any special information in the store. Of these respondents, about half (44%) remembered a brochure, 32 percent remembered a sign, 16 percent remembered some other kind of information, and 26 percent did not remember what kind of information they saw.

About half (52%) of the respondents who purchased kit measures at the store remember a special promotion. About one-third (30%) attributed the promotion to the store. Another 28 percent said a utility sponsored the promotion. Only 11 percent said Efficiency UNITED or Energy Optimization was responsible for the promotion. Eleven percent said some other organization provided the promotions. Twenty percent did not remember specifically who sponsored the promotion.

3.1.4.7 Satisfaction

The survey asked how satisfied respondents were with several characteristics of the rebate program including the rebated equipment, the dollar amount of the rebate, the timeliness of the rebate payment, the

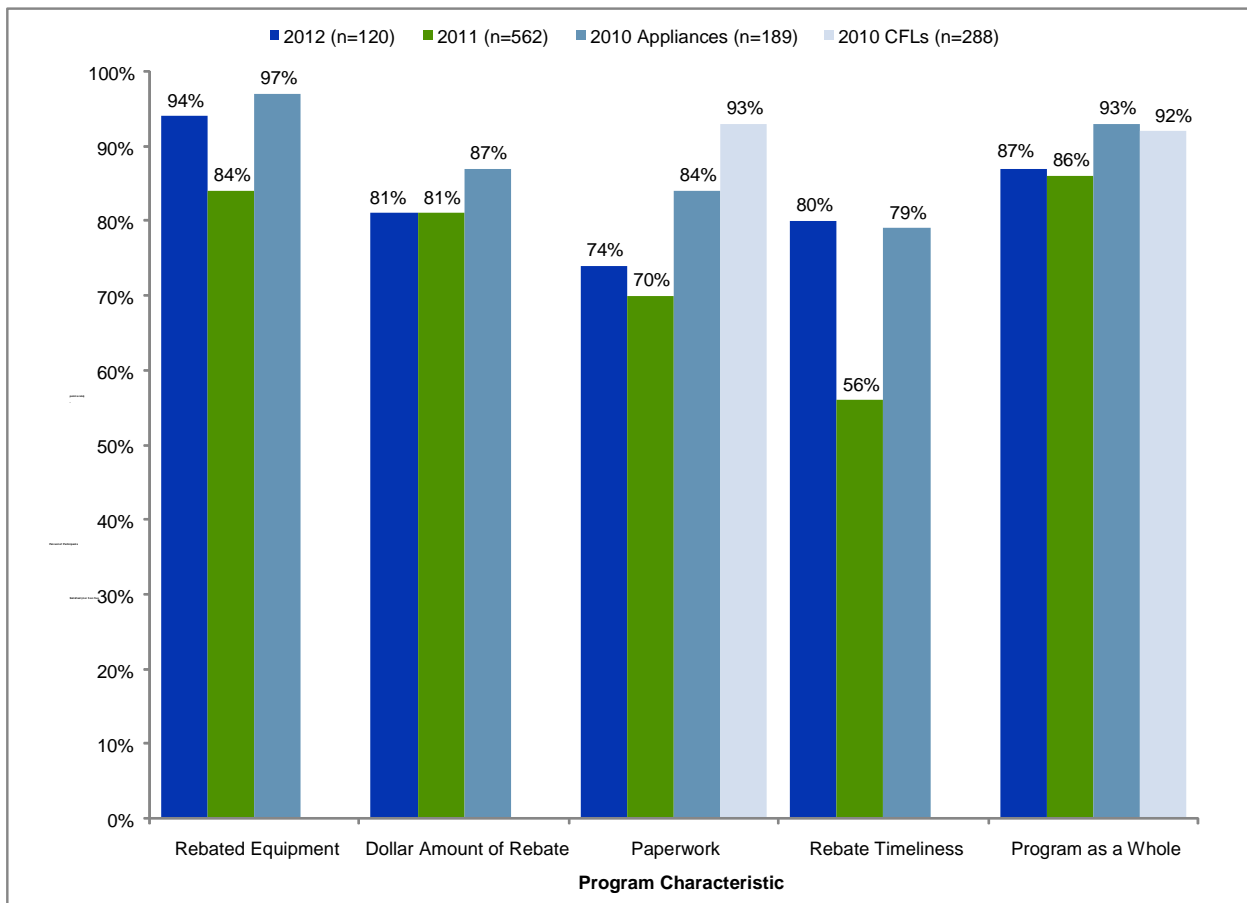


rebate application, and the program as a whole. Respondents indicated their satisfaction using a five-point scale where 5 meant “very satisfied” and 1 meant “not at all satisfied.”

Based on our years of experience evaluating many such rebate programs, we consider satisfaction percentages (the combined % of customers giving ratings of 4 or 5 on a 5-point scale) at 90 percent or above to be very good, those between 80 and 89 percent to be good, and those below 80 percent to indicate a need for program improvement. Figure 3-13 shows that appliance participants gave good ratings for the program as a whole, the rebated equipment, and the dollar amount of the rebate.

Respondents’ satisfaction ratings for the paperwork were at a level that reflects a need for improvement, the amount rebate amount and rebate timeliness are borderline. Generally, all satisfaction ratings increased relative to those given by the 2011 respondents.

Figure 3-13. ESP Program Satisfaction



The survey followed-up with any respondents who provided a satisfaction rating of three or less to ask them why they were less than satisfied. Reasons provided for lack of satisfaction included the following:



- *Rebated equipment:* Reasons for dissatisfaction included the equipment being difficult to use, the equipment producing less energy savings than expected, and the respondent not receiving the rebate.
- *Dollar amount of rebate:* Reasons for dissatisfaction were that the rebate should be higher and they did not receive the rebate.
- *Paperwork:* Reasons provided by respondents for dissatisfaction with the paperwork were that paperwork was too complicated or confusing, paperwork was too demanding, too much paperwork, it took too much time, and paperwork was difficult to read.
- *Rebate timeliness:* Reasons for dissatisfaction with the timeliness of the rebate program were that the respondent never received their rebate or it took too long.
- *Program as a whole:* Reasons provided by respondents for dissatisfaction with the program as a whole included they were neutral about the equipment they got, and that they did not receive their rebate.

Satisfaction with the rebated equipment depended on respondent education and program motivation. Respondents with a high school diploma or less were more likely (97%) than those with at least four year college degrees (86% of the respondents) to be satisfied (4 or 5 on the five-point scale). Respondents who were going to buy equipment anyway were more likely (100%) to be satisfied than those who were not (87%) to be satisfied overall. Satisfaction with the dollar amount of the rebate depended on, income. Respondents with reported annual incomes under \$50,000 were more likely (90%) than those who did not report their income (63%) to say they were satisfied with the dollar amount of the rebate.

- Satisfaction with the paperwork depended on program information source. Respondents were more likely to be satisfied with the paperwork if they learned of the program from contractors or salespeople (95% vs. 74% for others) or from bill stuffers (100% vs. 74% for others).

Satisfaction with the timeliness of the rebate payment was not significantly dependent on any identified characteristics.

Satisfaction with the program as a whole depended on respondent education:

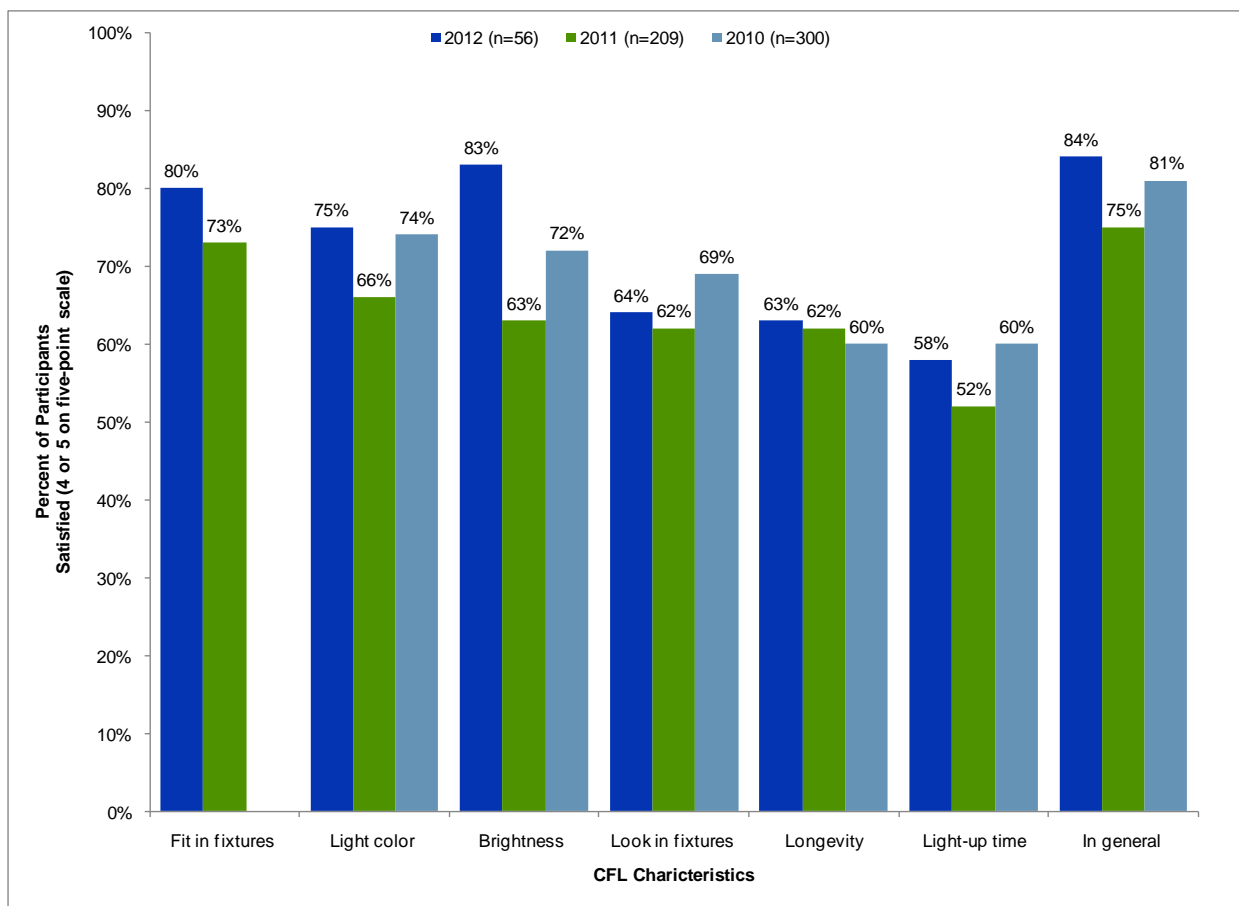
- *Education:* Respondents with a high school diploma or less were more likely (97%) than those with at least four year college degrees (86%) to be satisfied with the program overall.

3.1.4.7.1 Satisfaction with CFLs

The survey asked how satisfied respondents were with several characteristics of CFLs, including in general, the color of the light they provide, the brightness of the light they provide, how long they take to light up, how they fit into fixtures, the way they look in fixtures, and how long they last before burning

out. Respondents indicated their satisfaction using a five-point scale where 5 meant “very satisfied” and 1 meant “not at all satisfied.” Overall, respondents were well-satisfied with most characteristics of CFLs (Figure 3-14). While satisfaction rates decreased slightly in 2011, they have increased in 2012. . While the increase in CFL characteristic satisfaction is a favorable thing, there is not much the program can do about the characteristics of CFLs.

Figure 3-14. CFL Characteristics Satisfaction



Satisfaction with CFLs depended on income and first time purchase,

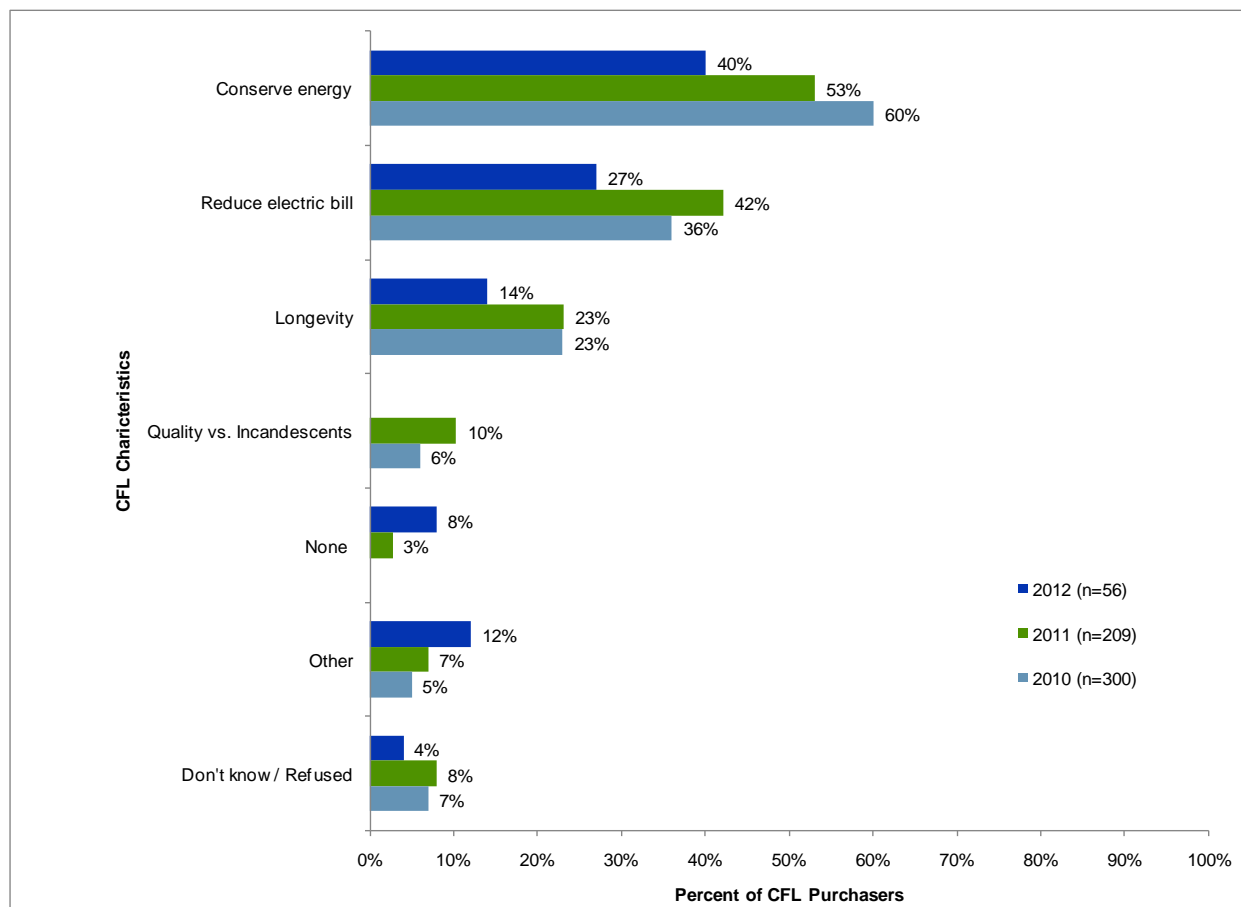
- *Income:* Respondents with annual income greater than \$50,000 were more likely than those who did not report their income (54%) to be satisfied with their CFLs overall.
- *First time purchase:* Respondents who purchased CFLs for the first time were more likely (100%) than those who did not (82%) to be satisfied with CFLs overall.

The survey also asked respondents what are the best features of CFLs. Figure 3-15 shows their responses. The most-frequently-cited (40% of respondents) best feature was that CFLs conserve energy, a significant

drop from 2011. Another 27 percent said that CFLs reduce their electricity bill, which is also a significant change from 42 percent in 2011. Fourteen percent cited CFL longevity, a change from 2011 which is not statistically significant.

When asked about the best reasons for CFLs, the 2012 respondents gave an average of 1.0 reasons, compared to an average of 1.5 reasons in 2011, and an average of 1.4 reasons in 2010. This may be because people are more settled on the benefits of CFLs or CFLs have simply become the norm. As fewer people were first time purchasers of CFLs in 2012 (11%) than in 2011 (18%) this reason may have some validity.

Figure 3-15. Best Features of CFLs



Other includes: less heat, style, easy installation, and brightness. The total exceeds 100% because respondents were allowed to give multiple responses.

In general, there were fewer characteristics with statistically-significant differences in 2012, attributable to the smaller population size available.

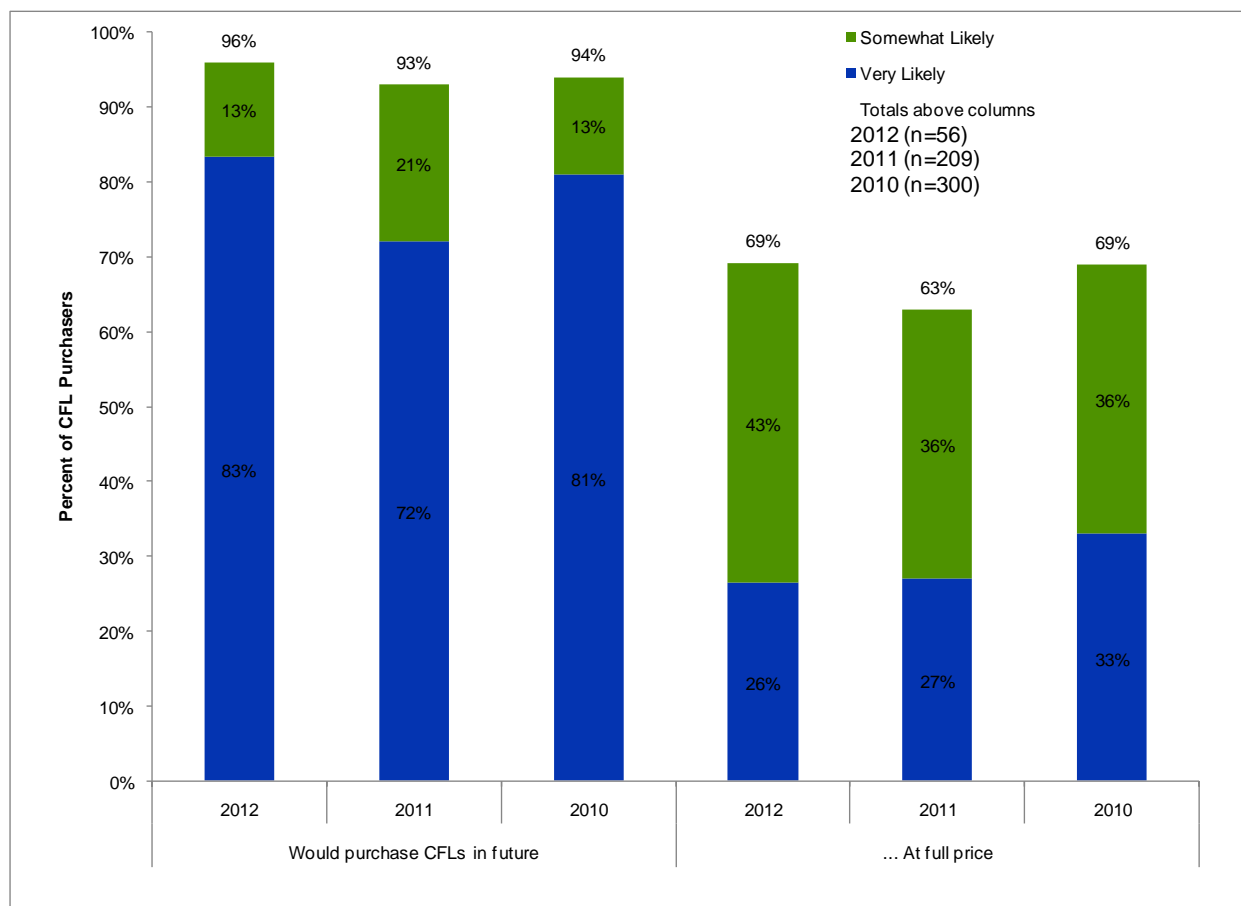
- Education:** Respondents with a four-year degree or more education were more likely (18%) than those with some college (0%) to cite CFL longevity. Respondents with some college were less



likely (0%) than those with less education (46%) or those with a four-year degree or more (25%) to cite reducing their electric bill the best feature of CFLs.

Respondents’ experience with the rebated CFLs has made them very likely to purchase CFLs in the future. Eighty-three percent said they were “very likely,” and another 13 percent said they were “somewhat likely” to purchase CFLs in the future, statistically unchanged from 2011. When asked how likely they were to purchase CFLs in the future at full prices of three or four dollars each, about one-fourth (26%) said they were “very likely,” and another 43 percent said they were “somewhat likely” to purchase them. These findings are similar to 2010 and 2011 participants (Figure 3-16).

Figure 3-16. Likelihood of Purchasing CFLs in Future

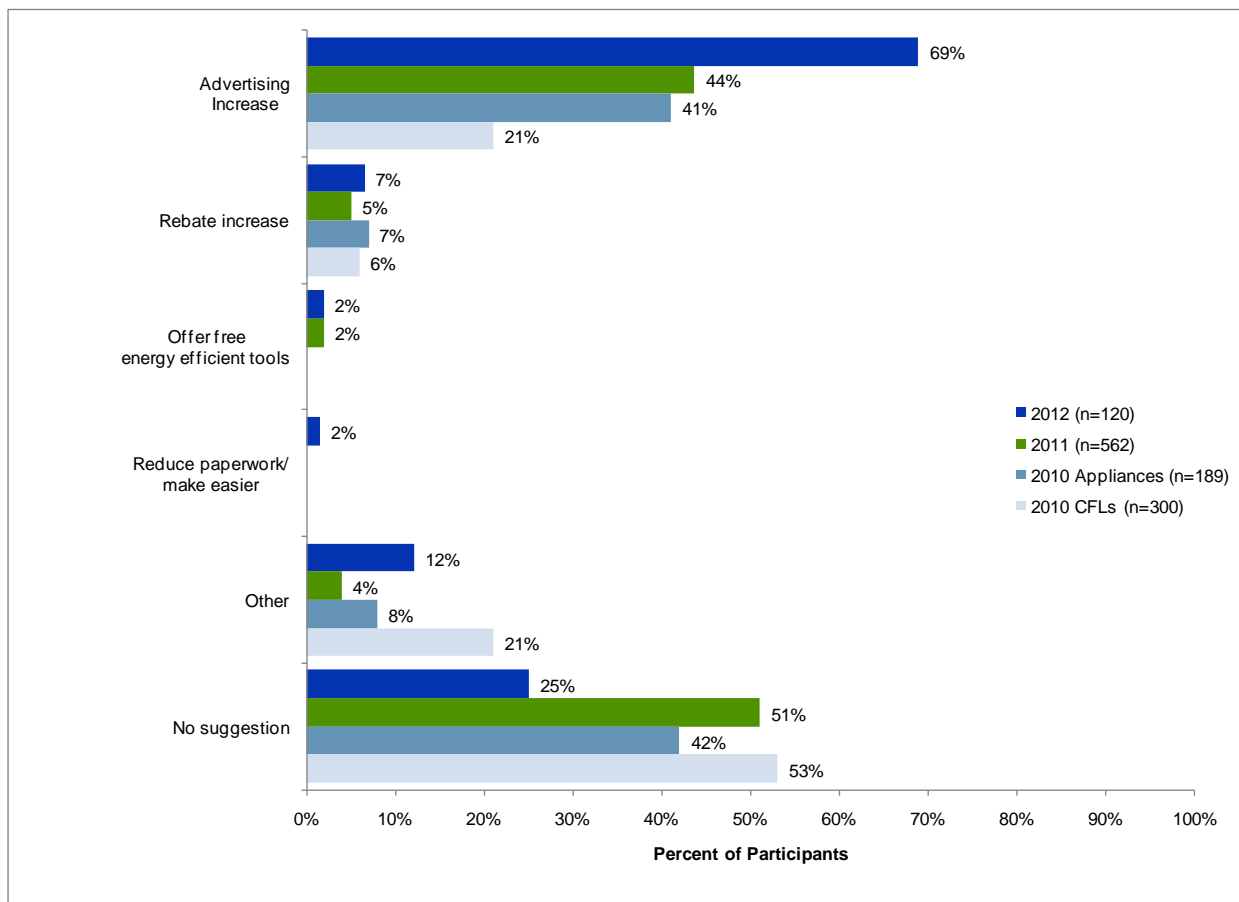


3.1.5 Suggestions for Program Improvement

The survey asked respondents if there was anything their utility could do to get more people to participate in the appliance rebate program. Figure 3-17 summarizes the responses. One quarter (25%) did not

provide a suggestion, a significant drop from 2011. Those that did provide suggestions usually mentioned more advertising (69%).

Figure 3-17. Suggestions for Increasing Program Participation



Notes: In the 2011 survey other suggestions included: unspecified suggestions. In the 2010 Appliance survey other suggestions included: providing more information about rebated equipment, instant rebates, extending the rebates, bill credits, and unspecified other suggestions. In the 2010 CFL survey other suggestions included: more information about CFLs, extend rebates, and unspecified other suggestions. The totals exceed 100% because respondents were allowed to give multiple responses.

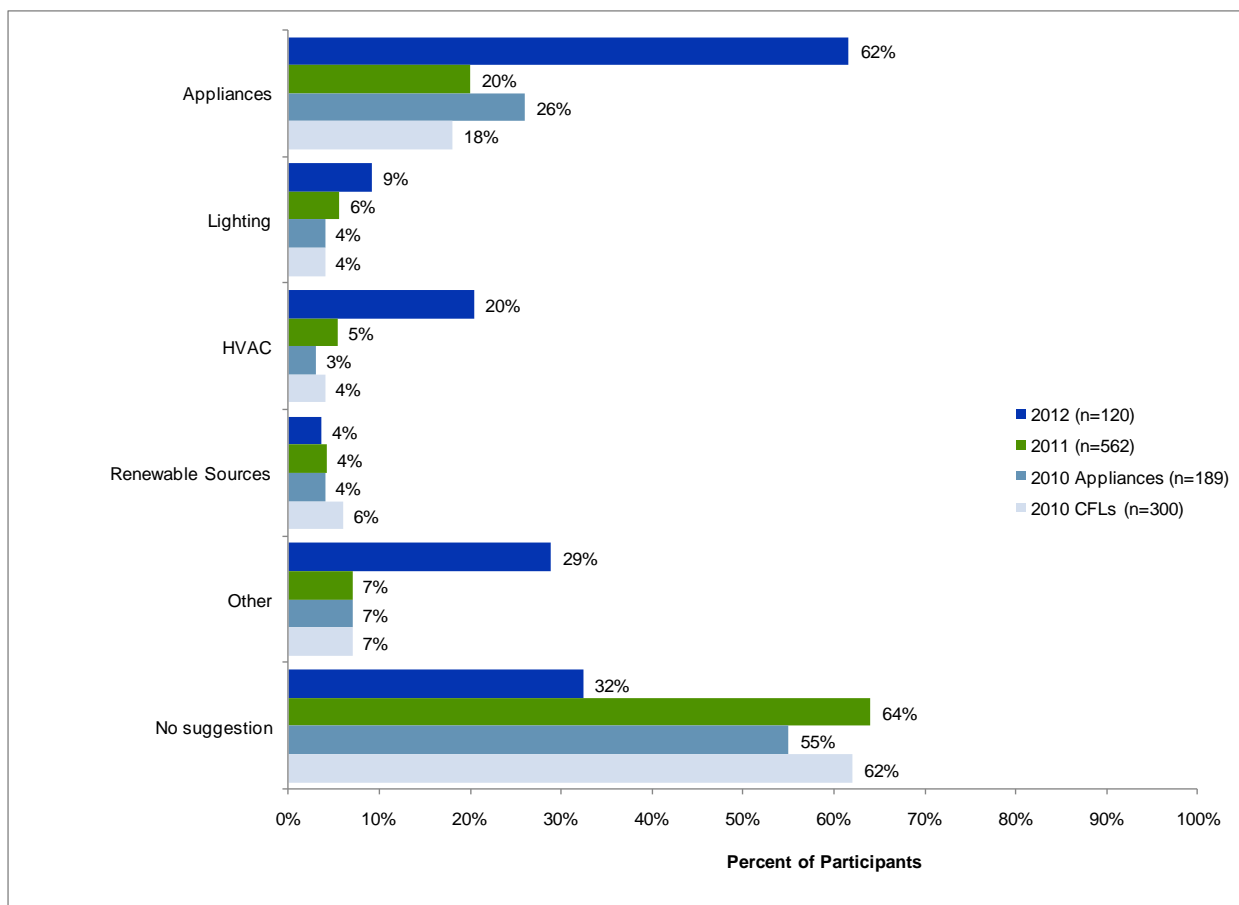
The survey also asked respondents if there were any energy efficiency technologies that they would like their utility to offer rebates for. Figure 3-18 summarizes the responses, which mark significant changes from previous years. The biggest difference is that in 2012 the proportion of people without a suggestion was halved from previous years, a significant decrease. In 2011, most (64%) respondents did not provide a suggestion whereas the same percentage suggested appliances in 2012. Appliance suggestions ranged from refrigerators and freezers to “all energy star appliances. HVAC also increased significantly, with 20 percent of respondents suggesting those technologies (heating and cooling appliances, furnaces, programmable thermostats). Finally, respondents also suggested a wider array of “other” technologies in 2012. In the 2011 survey other suggestions included: consumer electronics, windows/doors, gas, home



audits, and unspecified suggestions. In 2012, this list was expanded to home energy audits, consumer electronics, televisions, window and doors, and insulation.

The next-most-often-suggested rebates were for lighting (6%), HVAC rebates (5%), and renewable energy sources (4%). These suggestions were similar to those provided by 2010 Appliance and CFL participants.

Figure 3-18. Suggestions for Additional Rebates



Notes: In the 2011 survey other suggestions included: consumer electronics, windows/doors, gas, home audits, and unspecified suggestions. In the 2010 Appliance survey other suggestions included: insulation, weather sealing, any energy efficient technology, and unspecified other suggestions. In the 2010 CFL survey other suggestions included: other rebates and unspecified other suggestions. The totals exceed 100% because respondents were allowed to give multiple responses.

3.2 Residential HVAC Program

3.2.1 Summary

The following are some highlights from the survey of 2012 Residential HVAC program participants:



- *Program awareness:* Over one third (36%) of respondents had heard about the Home Performance program before being surveyed. This is a sizable decrease from previous years (75% in 2011 and 88% in 2010). This may be related to the way the question was asked. In the previous two years respondents were asked if they had heard of “the program” whereas this year they were asked if they had heard of Home Performance. As discussed below, the HVAC Program was only recently subsumed into the newly-named Home Performance Program and so it is not too surprising that most participants did not recognize the new program name. One effect of this drop in program recognition is that the program-aware group in 2012 is much smaller than the 2011 and 2010 program-aware groups, and therefore likely different in nature. The good news was that of those who had heard of the program before being surveyed, over two thirds (68%) had heard about the program before and 13 percent had heard of the program at about the same time as purchasing their equipment. This is good because respondents who heard about the program after purchasing the equipment are generally free-riders.
- *Sources of program awareness:* Contractors and salespeople were the most common sources of information about the program, as had been the case in the 2010 and 2011 surveys. There were some changes in the frequency of program information sources in 2012, including evidence of a broader diversity of program information sources such as direct mail, word-of-mouth, etc. However, these changes are difficult to interpret because the change in program name and the resulting lack of program name recognition among the 2012 survey respondents meant that the program-aware group in 2012 was much smaller and probably very different than the 2011 and 2010 program-aware groups.
- *Drivers of participation:* A contractor/ installer recommendation was the most common reason provided for participation in the rebate program. This is a change relative to the two previous years when receiving the rebate was the most common reason provided. This is a positive finding since it shows the contractors are starting to recommend the program more than they have in the past. Also another good sign is the number of respondents who said they would have purchased the equipment with or without the program has been steadily decreasing over the three years (11% in 2012, 30% in 2011 and 50% in 2010). This is a positive change for the program because respondents who would have bought equipment without the program are likely to be free-riders. Respondents were also more likely in 2012 to say they bought the equipment based on contractor recommendations (41%) than in 2011 (21%).
- *Program satisfaction:* Satisfaction with the program rose in 2012 from 2011 (97% satisfied with the program overall compared to 91% in 2011 and 93% in 2010) with a majority of respondents saying they were satisfied with most components of the program. The satisfaction ratings with the application form, on the other hand, have been on a downward trend the last three years. Fifty-eight percent of 2012 participants gave the application form a rating of 4 or 5.



- *Suggestions for program improvements:* When asked for suggestions for program improvement, one half of the respondents (52%) stated that increasing advertising would be an improvement.
- *Requests for rebates on ENERGY STAR equipment were common (32%) in 2012.*

3.2.2 Program Description

For the 2012 period the Residential HVAC (HVAC) Program was subsumed into the larger Home Performance Program (HPP) which includes not only the HVAC Program but also the Residential On Site Weatherization Program and the Online Audit. The HPP is the largest residential program in the MCAAA portfolio. For the HVAC program, the incentives are provided to customers through mail-in rebates for installing high efficiency heating, cooling, and water heating equipment in residential buildings.

Table 3-6 shows the measure combinations offered by the given utilities.



Table 3-6. Measures Offered through HVAC Program by Utility Territory

Group of Measures	Utilities Offering Measure Group
ECM Drives	The City of Gladstone Department of Power and Light Negaunee Electric Utility
ECM Drives Central Air Conditioner	Alpena Power Company City of Hillsdale Board of Public Utilities
ECM Drives Ground Source Heat Pump	Upper Peninsula Power Company
ECM Drives Electric Water Heater	City of Norway Department of Power and Light
ECM Drives Central Air Conditioner Air Source Heat Pump	We Energies
ECM Drives Heat Pump Water Heater Ground Source Heat Pump Electric Water Heater	City of South Haven
Programmable Thermostat Furnace Boiler Instant Gas Water Heater O&M Tune-Up (Furnace)	Michigan Gas Utilities
Programmable Thermostat Furnace Boiler Instant Gas Water Heater Water Heater	SEMCO ENERGY Gas Company
ECM Drives Central Air Conditioner Heat Pump Water Heater Air Source Heat Pump Ground Source Heat Pump Electric Water Heater	Indiana Michigan Power
ECM Drives Central Air Conditioner Programmable Thermostat Furnace Boiler Instant Gas Water Heater	Wisconsin Public Service Corporation



Water Heater O&M Tune-Up (Furnace)	
ECM Drives Central Air Conditioner Electric Water Heater Programmable Thermostat Furnace Boiler Instant Gas Water Heater Water Heater O&M Tune-Up (Furnace)	Xcel Energy

3.2.3 Methodology

CLEAResult provided DNV KEMA with a sample population of 787 program participants as of August 31, 2011. DNV KEMA contracted Braun Research (Braun) to conduct computer-aided telephone interviews (CATI) of program participants. Braun completed interviews with 200 in November 2012. This was a final response rate of 32 percent (Table 3-7). Phone numbers were called at least eight times over at least two weeks before being considered unreachable. The 32 percent response rate was similar to the response rate achieved in the 2010 and 2011 evaluations.

Table 3-7. HVAC CATI Dispositions

Sample Description	Number	Percent
Starting Sample	787	
Never Called	83	
Sample Used	704	
Invalid sample	78	
Sample Used	626	
Complete	200	32%
Contacted - Not Eligible	1	0%
Refused	78	12%
Contacted, not completed	61	10%
Dialed/Not contacted	286	46%

The CATI survey covered the following topics:

- Sources of information about program;
- Reasons for participation;
- Verification of equipment installation;
- Thermostat replacement;



- Thermostat use information;
- Net-to-gross information;
- Appliance recycling;
- Satisfaction with several aspects of the program;
- Energy attitudes; and
- Demographic information.

Participants were stratified based on the type of equipment they received a rebate for. Results are weighted based on the number of participants in the population strata divided by the number of completed surveys.

3.2.4 Characterizing the Participants

The survey asked a series of demographic questions to help characterize the 2012 program participants. Highlights are summarized below:

- *Home ownership:* Most (98%) of participants said they own their homes.
- *House types:* Most homes (93%) were characterized as single family detached. There were some single family attached (6%) and mobile homes (1%).
- *Housing occupancy:* Most (97%) of homes were not seasonal homes. Of those who stated their home was seasonal, most (53%) of homes were occupied five months or more a year.
- *Household size:* Number of residents per home varied as follows: one resident (16%); two residents (52%); three residents (12%); four residents (10%); five or more residents (7%).
- *Respondent age:* Respondent age varied as follows: less than 40 years old (9%); 40 to 64 years old (55%); 65 or older (32%); no answer (5%).
- *Respondent education:* Respondent education levels varied as follows: high school diploma or less (21%); some college or trade school (27%); four-year college degree (27%); some graduate school or advanced degree (20%); no answer (5%).
- *Respondent income:* Respondent pre-tax 2011 income varied as follows: less than \$20,000 (3%); \$20,000 to \$49,999 (25%); \$50,000 to \$74,999 (16%); \$75,000 or more (31%); no answer (24%).
- *Respondent gender:* Slightly over one half of respondents were men (59%).
- For the 2012 evaluation, like the 2011 survey, DNV KEMA asked several questions to assess respondents' knowledge and attitudes about energy efficiency.



- *ENERGY STAR awareness:* Most (76%) of respondents were aware of ENERGY STAR, essentially the same as in 2011 (78%). Younger respondents were more aware of ENERGY STAR than older respondents. Respondents under 54 (95% under 40 and 91% between 40 and 53) were more aware than respondents age 55 to 64 (71%) and respondents 65 or older (60%). The differences were statistically significant.
- *Concern about energy use:* Similar to 2011 results, most respondents were “very concerned” (57% in 2012 and 59% in 2011) or “somewhat concerned” (34% in 2012 and 2011) with reducing their home’s energy use. Almost all (97%) of respondents that were very concerned or somewhat concerned with reducing their home energy use wanted to do so because of the cost of energy or financial reasons. Environmental concerns (24%) were also prevalent.

3.2.5 Program Awareness

The survey began by asking respondents if they had heard of the program prior to the survey. Approximately one-third (36%) had heard of the Home Performance program before the survey. This is a large decrease from the two previous years (75% in 2011 and 88% in 2010) and may be related to the way the question was asked. In the previous two years respondents were if they had heard of “the program” whereas this year they were asked if they had heard of Home Performance. As noted above, the HVAC Program was only recently subsumed into the newly-named Home Performance Program and so it is not too surprising that most participants did not recognize the new program name. One effect of this drop in program recognition is that the program-aware group in 2012 is much smaller than the 2011 and 2010 program-aware groups, and therefore likely different in nature.

There were a few statistically-significant differences in program awareness based on respondent education, awareness of ENERGY STAR, participation intent and contractor recommendation.¹⁶ Awareness of the program depended on a number of factors including:

- *Gender:* Females were more likely (10%) than males (2%) to not know if they had heard of Home Performance program.
- *Education:* Respondents with at least a four year college degree were more likely (44% of respondents) than those with some college (25%) to have heard of the Home Performance program prior to the survey. But there was no statistically-significant difference between those with four years or more of college and those with a high school degree or less, so there was no clear correlation between the level of education and the level of program awareness.
- *ENERGY STAR awareness:* Respondents with an awareness of ENERGY STAR were more likely (41%) than those not aware (20%) to have heard of the program prior to the survey.

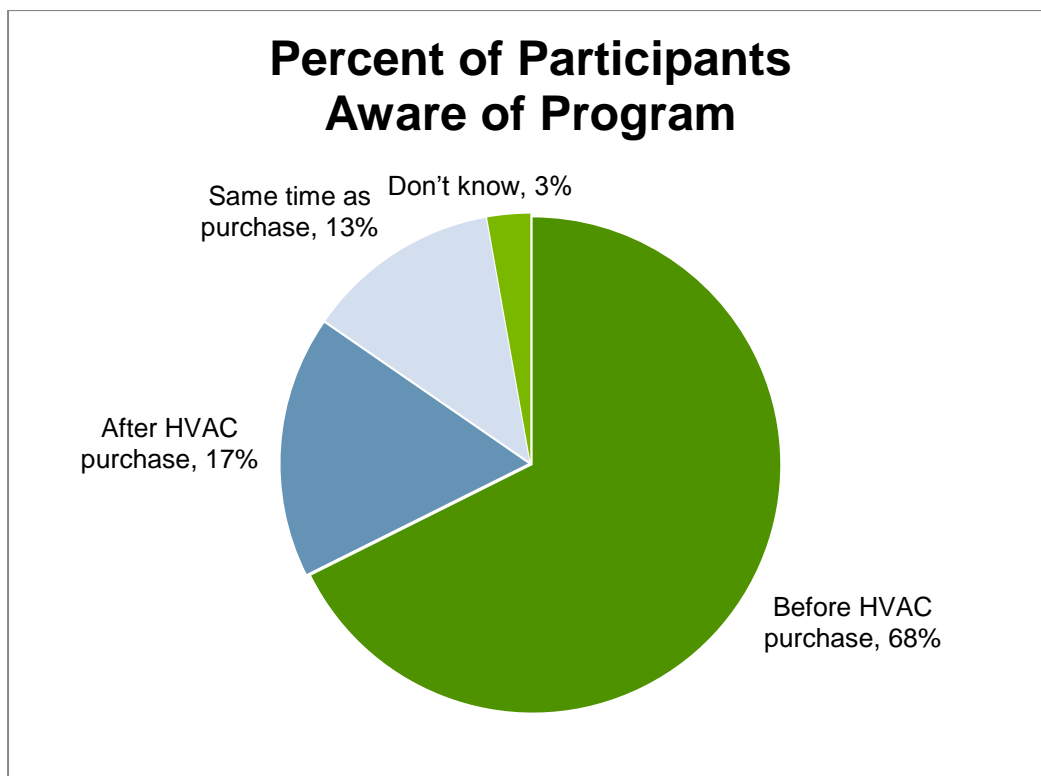
¹⁶ All reported differences are statistically significant at the 90% confidence level.



- *Participation intent:* Respondents who bought equipment to get the rebate were more likely (51%) than those who did not (27%) to have heard of the program prior to the survey. Conversely, those who did not buy the equipment for the rebate were more likely (68%) than those who did (44%) to have not heard about the program.
- *Contractor recommendation:* Respondents who had bought the equipment without a contractor recommendation were more likely (47%) to have heard about the program than those who bought the equipment at the recommendation of a contractor (20%). Conversely, those who did buy the equipment at the recommendation of the contractor (78%) were more likely not to have heard for the program than those who did not receive a recommendation (45%).
- The survey also asked whether respondents had heard about the program before purchasing their equipment. About two thirds (68%) said they had heard about it before purchasing the equipment and 13 percent had heard of the program at about the same time as purchasing their equipment. This is good because respondents who heard about the program after purchasing the equipment are generally free-riders. Seventeen percent heard about it after purchasing the equipment. These values are not significantly different from the previous two years' evaluation.

Figure 3-19 shows the full range of responses.

Figure 3-19. When Respondent Heard about Program





When respondents heard about the program depended on gender, income, awareness of ENERGY STAR, reason for equipment purchase and contractor recommendation.

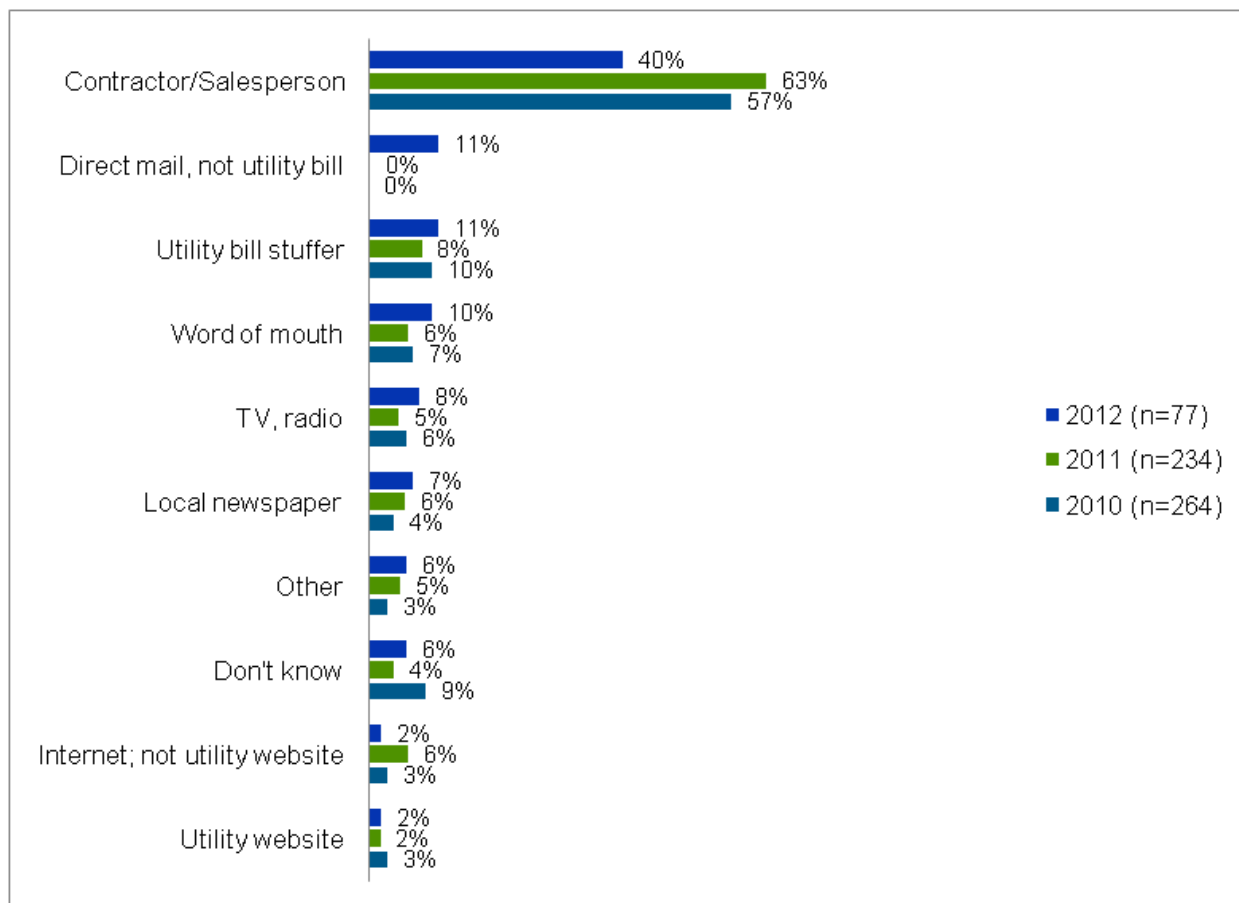
- *Gender:* Women were more likely (29%) than men (9%) to hear about the program after equipment purchase.
- *Income:* Respondents with 2011 pre-tax incomes more than \$100,000 were more likely (100%) than those who earned between \$99,000 and \$50,000 (68%) or less than \$50,000 (53%) or who did not report their incomes (68%) to hear about the program before purchasing the new HVAC system.
- *Reason for purchase:* Respondents who did not buy the equipment for the rebate were more likely (29%) to have heard about the program after purchase than those who bought the equipment for the rebate (6%).
- *Contractor recommendation:* Respondents who bought the equipment at a contractor's recommendation were more likely (46%) than those without a contractor's recommendation (9%) to have heard about the program after purchase. Conversely, respondents who bought the equipment without a contractor's recommendation were more likely (79%) than those who bought because of a recommendation to have heard about the program before purchase.

3.2.6 Sources of Information

The survey asked respondents who were aware of the program before the survey where they heard about the program or the rebates. Figure 3-20 summarizes 2012 respondents' information sources along with those from the previous two years. Forty percent of the 2012 respondents said they heard about the program through their contractor or salesperson. This the most common source of information even though it was a significant drop from previous years (40% in 2012 compared to 63% in 2011 and 57% in 2010). DNV KEMA often finds that contractors or salespeople are primary sources of information for HVAC programs. Yet other sources were listed by respondents at a higher rate than previous years including word-of-mouth (10% vs. 6% in 2011) and direct mail not included in the bill (11% vs. 0% in 2011 and 2010). Other sources were listed by fewer than ten percent of respondents.

We are cautious not to read too much into these changes in program information sources. As mentioned above, this is may be due to the significant drop in program recognition in 2012, the 2012 program-aware group is much smaller than the 2011 and 2010 program-aware groups, and therefore likely different in nature. For example, because the 2012 survey asked them if they had heard of Home Performance, as opposed to a generic "program," it is not surprising that the respondents who were familiar with the Home Performance program name were also more likely to cite direct mail pieces, since these would be a source for program branding.

Figure 3-20. Program Information Sources



Note: “Other” includes: government and heating company. The total exceeds 100% because respondents were allowed to give multiple responses.

3.2.7 Reasons for Participating

The survey asked participants why they chose to participate in the program. Almost half of respondents said because of a recommendation by a contractor or installer (41%). Over one-third (37%) of respondents said to get the rebate while it was available. Less than one-third (15%) said they needed to get an upgrade and some would have bought the equipment anyway (11%). Figure 3-21 summarizes the responses and the differences from the previous year’s survey.

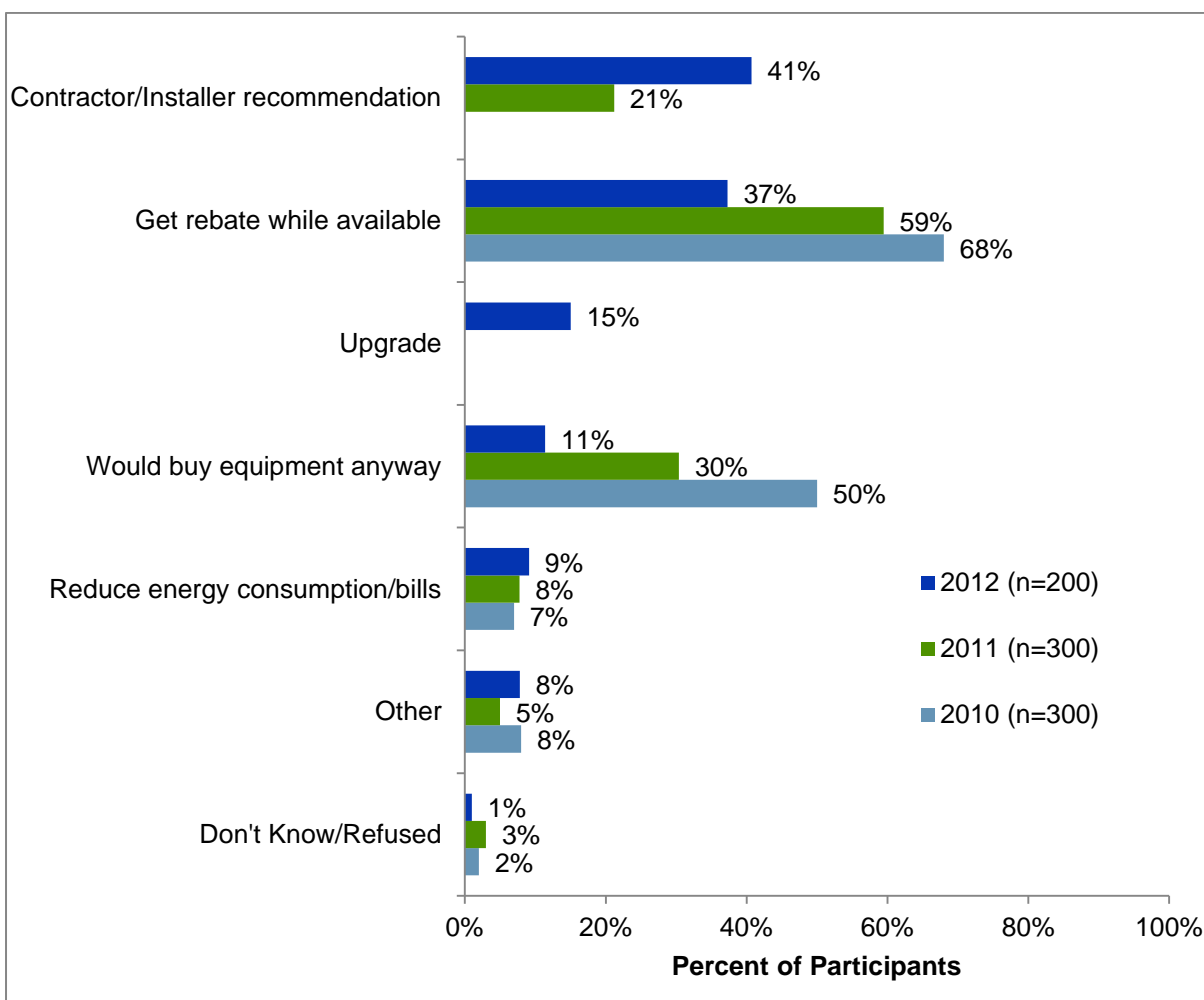
Participants in 2012 were less likely (11%) than 2011 (30%) or 2010 (50%) to say they would have bought the equipment anyway. This is a positive change for the program because respondents who would have bought equipment without the program are likely to be free-riders.

Respondents in 2012 were more likely to say they bought the equipment based on contractor recommendations (41%) than in 2011 (21%). DNV KEMA typically finds that contractor



recommendations are one of the most important factors when it comes to HVAC equipment selection. As noted in the chart, contractor recommendation was not a pre-coded selection in the 2010 survey, but few respondents volunteered it as an “other” response.

Figure 3-21. Reasons for Participation in Program



Note: Other reasons include: convenience, environmental concerns and tax advantage. Contractor recommendation was not a pre-coded selection in the 2010 survey, but few respondents volunteered it as an “other” response. The total exceeds 100% because respondents were allowed to give multiple responses.

There were a few statistically-significant differences in reasons for program participation based on contractor recommendation and buying the equipment to get the rebate.

- Contractor recommendation:** Respondents who said that they bought the equipment at the recommendation of a contractor were more likely (51%) to not be aware of the program prior purchase than those who were aware (23%). As expected, those who acted on a contractor’s



recommendation were also less likely to buy the equipment for a rebate (3% vs. 63%) and less likely to plan to buy equipment anyway (14% vs. 44%).

- *Get rebate while available:* Respondents who stated that they were previously aware of the program (53%) were more likely than those who were not aware (29%) to participate to get the rebate while available.
- *Energy reduction concern:* Those who listed “reduce energy consumption” were more likely to be aware of program (18% aware compared to 4% unaware of the program) and more likely to have four years or more of college (16% had four years of college, while 4% had some college and 2% had high school or less).

3.2.8 Satisfaction

All respondents were asked how satisfied they were with several different aspects of the program including the rebated equipment, the dollar amount of the rebate, the timeliness of the rebate payment, the application form and other program paperwork, and the program overall. Respondents rated their satisfaction on a five-point scale anchored at five for “very satisfied” and 1 for “not at all satisfied.” Levels of satisfaction with the program overall and with the rebated equipment were both good, with over 90 percent of respondents giving a rating of 4 or 5 for the third year in a row. Satisfaction with the rebate amount and the payment timeliness were both around 85 percent of respondents giving a rating of 4 or 5, see Figure 3-22, which is an improvement from 2011 ratings. The satisfaction ratings with the application form, on the other hand, have been on a downward trend the last three years. Fifty-eight percent of 2012 participants gave the application form a rating of 4 or 5.

Respondents who gave satisfaction ratings of three or less were asked why they were less than satisfied. Respondents provided the following reasons for being less than satisfied:

- *Rebate equipment:* Respondents who were less than satisfied with the rebate equipment said that the equipment didn’t work properly.
- *Rebate amount:* Similar to last year, statements that the rebate amount should be higher dominated the responses.
- *Payment timeliness:* Similar to last year, the most common response was that the rebate payment was slow.
- *Application form:* Similar to last year, less than satisfied respondents said the process was too complicated or there was too much paperwork.



- Program overall:* Reasons for lack of satisfaction included (in order of response): the rebates should be higher, it took too long to receive the rebate, the program was wasteful, and the application was difficult.

Figure 3-22. % Satisfied with Program Characteristics (4 or 5 on five-point scale)

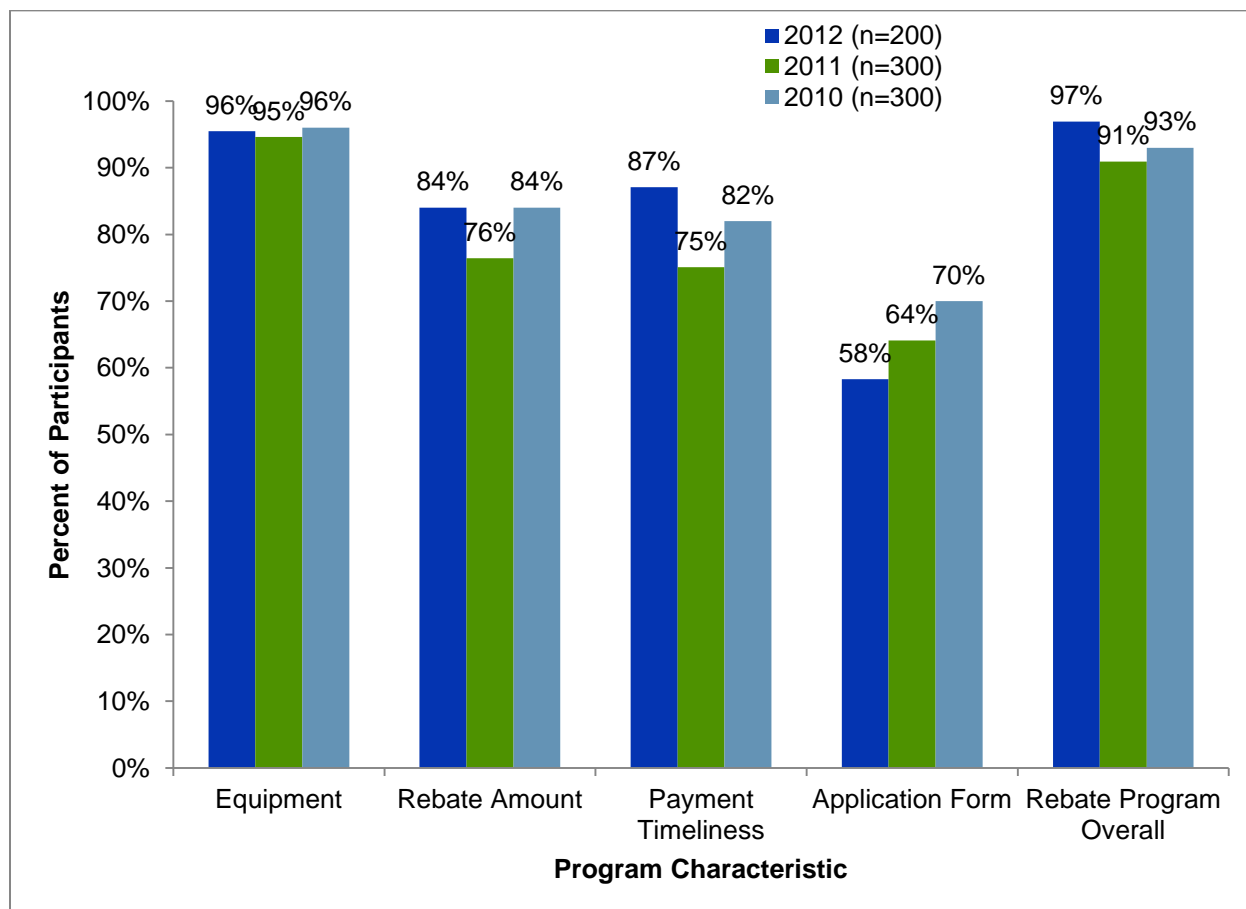


Table 3-8. Satisfaction with Program Characteristics

	Equipment	Rebate Amount	Payment Timeliness	Application Form	Rebate Program Overall
5 - very satisfied	83%	63%	63%	40%	70%
4	13%	21%	25%	19%	27%
3	2%	11%	6%	9%	2%
2	0%	3%	3%	2%	0%
1 - not at all satisfied	1%	2%	3%	2%	0%
Don't know/refused	1%	1%	2%	3%	1%

Note: n=200 for all program characteristics. Application form satisfaction ratings not shown: 26% of respondents did not complete an application form.



Satisfaction with rebated equipment (96%) showed statistically-significant differences according to respondents' education, income, gender, overall program satisfaction, energy reduction concern and buying equipment for the rebate.

- *Education:* Respondents who had some college were more likely (100%) than those with a high school degree or less (88%) and those will four years or more of college (96%) to be satisfied with the rebated equipment.
- *Income:* Respondents had an income of \$100,000 or higher were more likely (100%) than those with incomes between \$50,000-99,000 (95%) and those with income below \$50,000 (91%) to report being satisfied with the rebated equipment.
- *Overall program satisfaction:* Respondents who were satisfied with the program overall (91%) were more likely than those not satisfied (76%) to be very satisfied with the rebated equipment.
- *Number of residents:* Respondents who were satisfied with the program were more likely (99%) to be single resident households than two or more (94%).
- *Energy reduction concern:* Those who rated the rebated equipment a 4 or 5 were more likely to be unconcerned about energy reduction (100%) than those who were somewhat (95%) or very concerned about energy reduction (95%).
- *Buying Equipment for rebate:* Those who rated the rebated equipment a 4 or 5 were more likely to have thought they would buy the equipment anyway (100%) that those who would not have (95%).

Satisfaction with the dollar amount of the rebate (84%) showed statistically significant differences according to satisfaction with the program as a whole:

- *Overall program satisfaction:* Respondents who were satisfied with the rebate amount were more likely (100%) to be satisfied with the program overall than those who were less than satisfied (71%).

Satisfaction with the timeliness of the rebate payment (87%) showed statistically significant differences according to overall program satisfaction.

- *Overall program satisfaction:* Respondents who were satisfied with the timeliness of payment were more likely (100%) to be satisfied with the program overall than those who were less than satisfied (76%).

Satisfaction with the rebate application forms and other paperwork (58%) showed statistically significant differences according to age and overall program satisfaction. Since satisfaction has decreased steadily over the three years of evaluation, data analysis from low satisfaction and non-participation with forms or



paperwork ratings are included below as well. Low satisfaction (13%) showed statistically significant differences according to ENERGY STAR awareness. Respondents who did not complete any forms or paperwork (26%) showed statistically significant differences according to education.

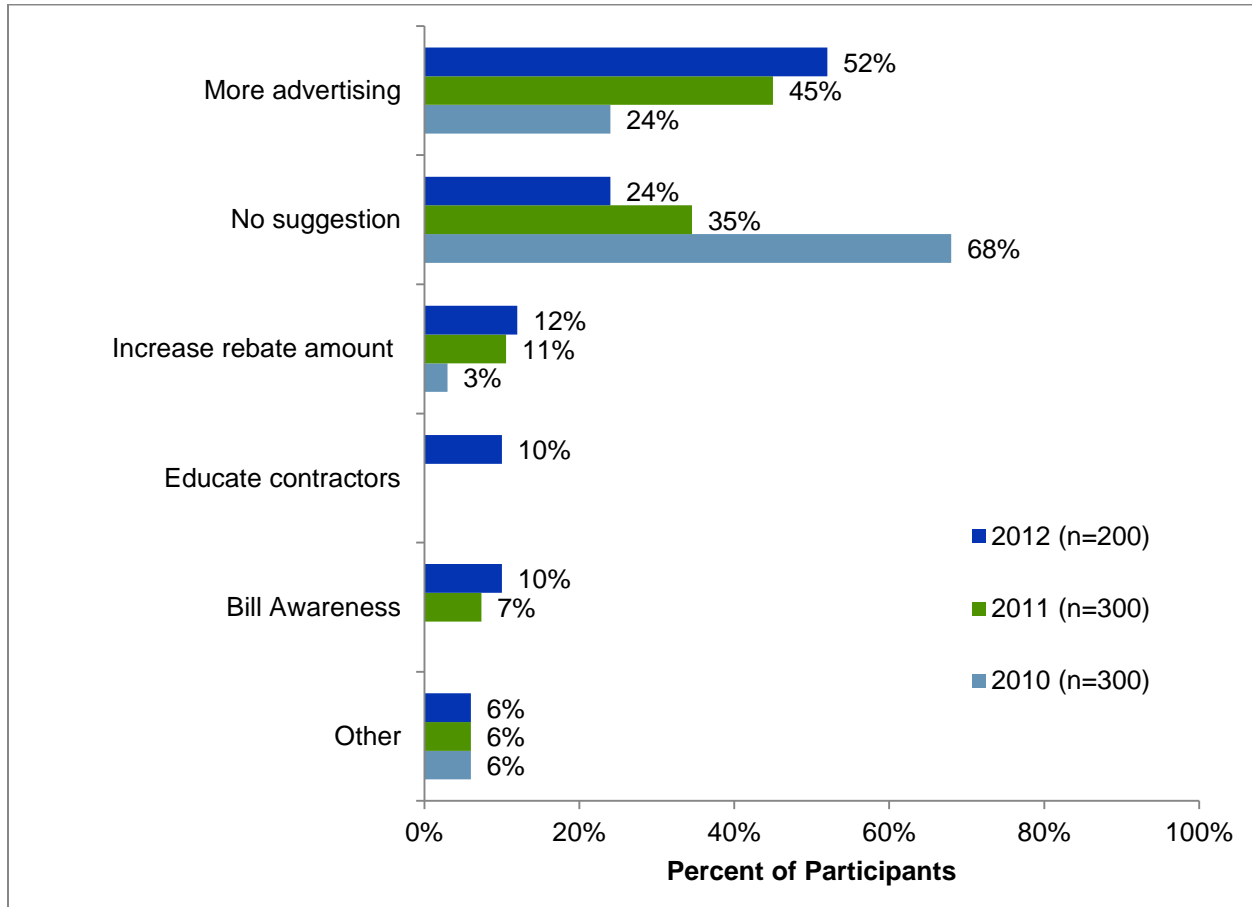
- *Age:* Respondents who were satisfied with the rebate application forms and other paperwork were more likely (73%) to be between 40-54 years of age than under 40 years (32%) or over 65 years of age (50%).
- *Overall program satisfaction:* Respondents who were satisfied with the rebate application forms and other paperwork were more likely (100%) to be satisfied with the program overall than those who were not satisfied with the program as a whole (23%).
- *Energy Star awareness:* Respondents who were *less than* satisfied with the rebate application forms and other paperwork were more likely to be aware of Energy Star programs (16%) than not aware of ENERGY STAR(3%).
- *Education:* Respondents who did not fill out any forms or paperwork (non-participation in this program component) were more likely to have a high school degree or less (44%) than some college (22%) or four years of college or more (21%).

3.2.9 Suggestions for Program Improvement

The survey asked respondents if there was anything their utility could do to improve the program. Figure 3-23 summarizes the responses. About one third respondents did not have a suggestion for improvement, a decrease from the previous years (35% in 2011 and 68% in the 2010). Conversely, recommendations for more advertising have steadily increased over the three years (52% in 2012 vs. 45% in 2011 and 24% in 2010).



Figure 3-23. Suggestions for Program Improvements

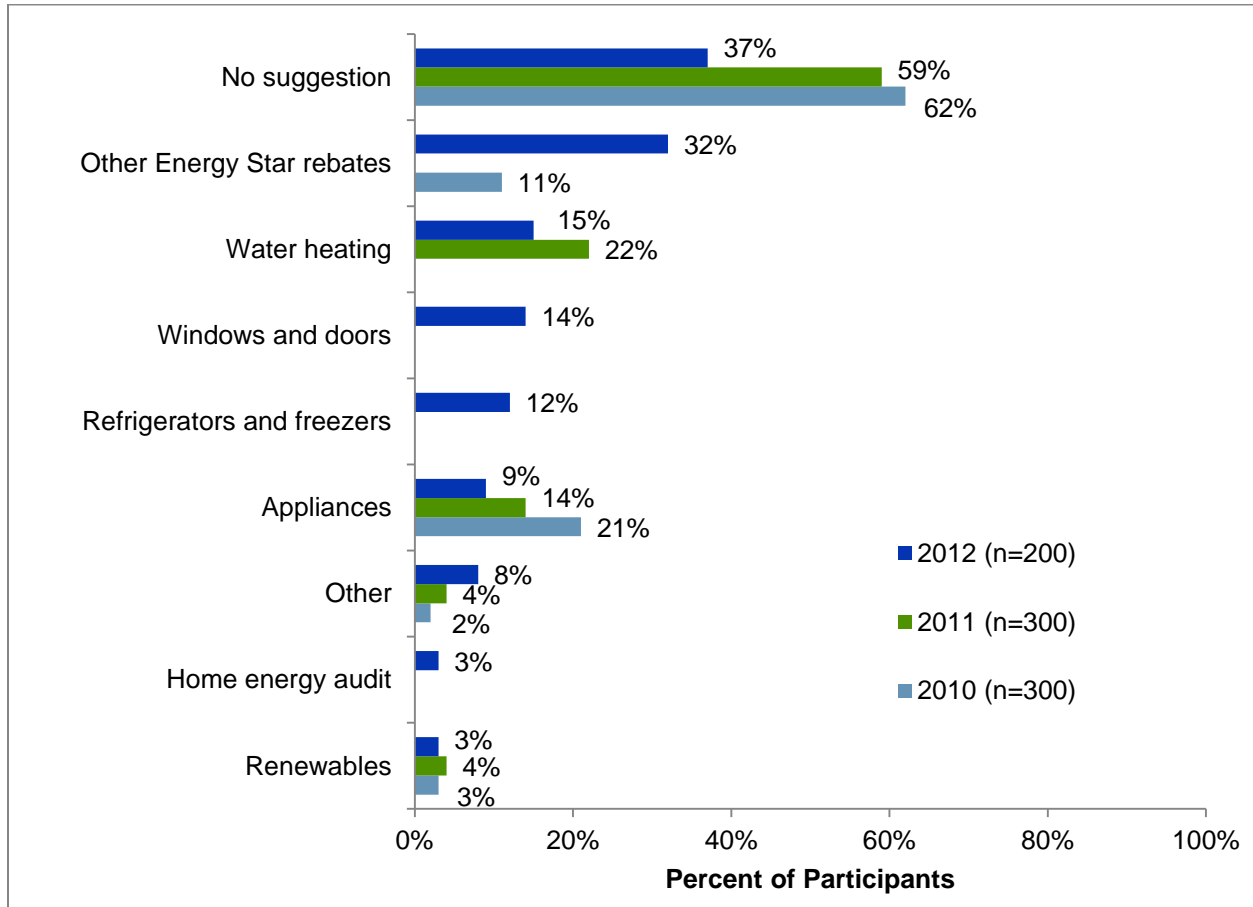


Note: The total exceeds 100% because respondents were allowed to give multiple responses. Other responses included “don’t know” and “community events.”

The survey also asked respondents if there were any energy efficiency technologies that they would like their utility to offer additional rebates for. Figure 3-24 summarizes the responses. Over one third (37%) of respondents did not provide a suggestion. This is lower than the two previous years (59% in 2011 and 62% in 2010). One third recommended rebates for major ENERGY STAR appliances (32%).



Figure 3-24. Suggestions for Additional Rebates



Note: The total exceeds 100% because respondents were allowed to give multiple responses.

3.3 Residential Appliance Recycling (RAR) Program

3.3.1 Program Description

The Residential Appliance Recycling (RAR) program was launched in March 2010. The program is implemented in all electric utilities except Bayfield, Baraga, and Daggett. The RAR program is the third-largest residential program in the MCAA portfolio and the third largest overall. Incentives are provided to the customer for removing and recycling secondary appliances in working condition and within a given size range.

3.3.2 Methodology

CLEAResult provided DNV KEMA with a sample population of 648 customers who received rebates for recycling appliances from the RAR program. DNV KEMA contracted Discovery Research Group (DRG) to conduct computer-aided telephone interviews (CATI) of program participants. DRG called participants from December 1, 2011 to January 31, 2012. They completed 286 interviews for a final response rate of 51 percent (Table 3-9). The 51 percent response rate is comparable to the 57 percent response rate achieved in the 2011 evaluation.

Table 3-9. Appliance Recycling CATI Dispositions

Sample Description	Number	Percent
Starting Sample	648	
Never Called	0	
Sample Used	648	
Invalid Sample	82	
Sample Used	566	
Complete	286	51%
Contacted-Not Eligible	55	10%
Refused	106	19%
Contacted-Not Completed	3	1%
Dialed-Not Contacted	116	20%

The CATI survey covered the following topics:

- Sources of information,
- Reasons for recycling appliances,
- Recall of who offered program,
- Net-to-gross questions,
- Program satisfaction, and
- Demographics.

3.3.3 Characterizing the Participants

The survey asked several attitude and demographic questions to help characterize the participants. The following are some highlights.

- *Home ownership:* Almost all (95%) of respondents said they own their home.
- *House types:* Almost all (91%) of respondents said they live in a single-family detached home. Other types of home included mobile homes (1%) and single-family attached homes (1%).
- *Occupancy patterns:* About three-fourths (89%) of respondents said the home where the recycled appliance came from was not a seasonal home and (88%) of respondents said the home where the recycled appliance came from was occupied twelve months per year.
- *Household characteristics:* Forty-one percent of the households have a resident aged 64 or older.
- *Respondent education:* Respondent education levels varied as follows: high school diploma or less (29%), some college or trade school (23%), four-year college degree (21%), some graduate school or advanced degree (18%), did not answer question (10%).
- *Respondent incomes:* Respondent 2011 pre-tax income levels varied as follows: less than \$50,000 (30%), \$50,000 or more (30%), did not answer question (40%).
- *Respondent gender:* The respondents were fifty-seven percent men and forty-two percent women.

3.3.4 Program Awareness

Almost three quarters (71%) of respondents said they heard about the RAR program before taking the survey. There were a few statistically-significant differences in program awareness based on customer characteristics.¹⁷

- *Education and income:* The more education a respondent had, the more likely they were to say they had heard of the program prior to the survey. Only sixty-five percent of respondents with a high school diploma or less said they heard of the program compared to 78 percent of those with a four-year degree, and 100 percent of those with graduate school education. Since education is highly correlated with income, it was not surprising that those with annual household incomes of \$50,000 or greater had a higher level of awareness (85% of respondents) of the program than those with annual household incomes of less than \$50,000 (65%) or those who refused to report their income (66%).

¹⁷ All reported differences are statistically significant at the 90% confidence level.

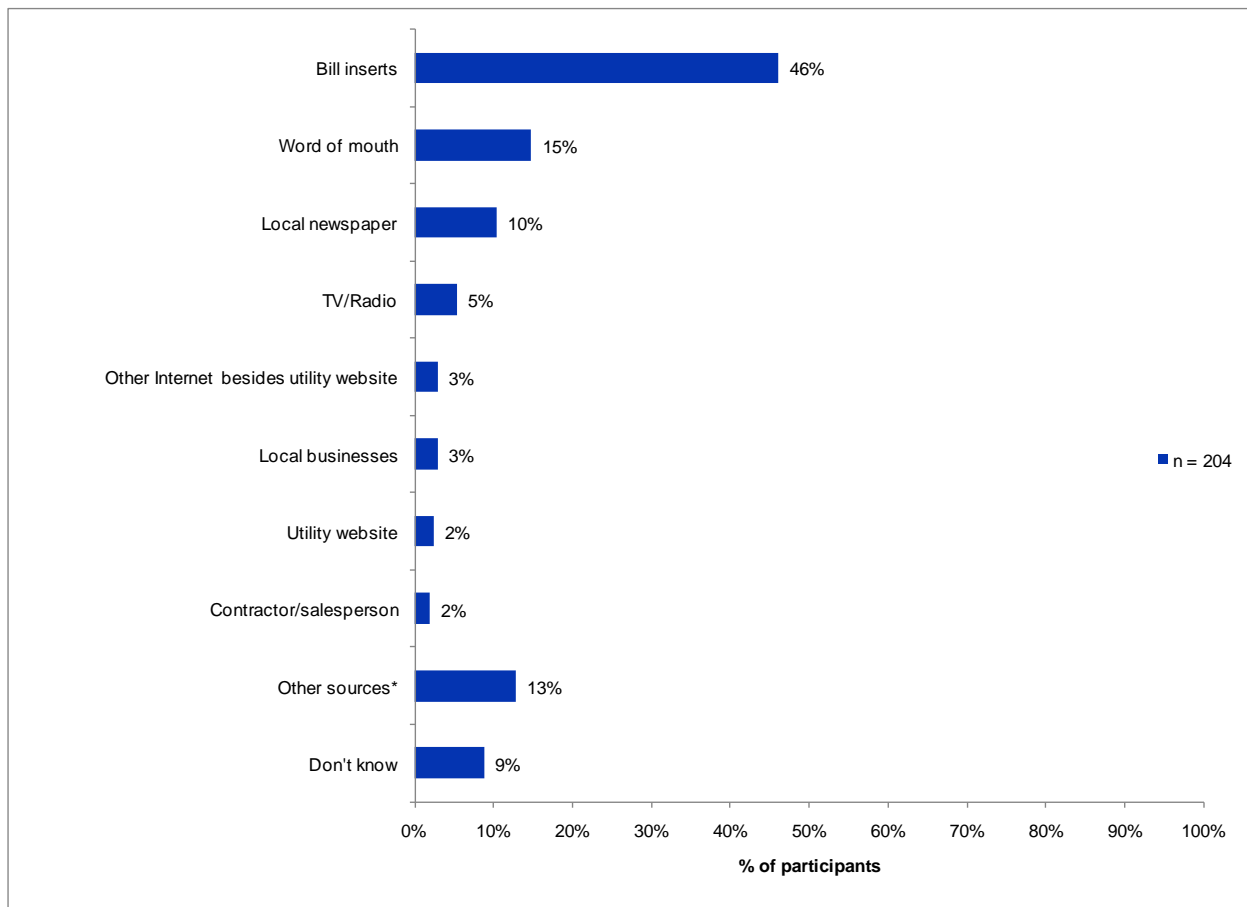


- Program dissatisfaction:* Participants who were less than satisfied with at least one aspect of the program were more likely (80% of respondents) to have been previously aware of the program than those who were totally satisfied with the program (70%). One possible explanation for this is that people who were previously aware of the program also likely had expectations as to what the program would be like and therefore were more likely to be disappointed than people who had no expectations about the program to begin with.

3.3.5 Sources of Information

The survey asked respondents who said they were aware of the program how they first heard of it. About half (46%) said they first heard of it through utility bill inserts. The next most-cited sources of program information included word-of-mouth (15%) and local newspapers. There were many other sources of program information, although none of these were cited by more than five percent of survey respondents. Figure 3-25 shows the full range of responses.

Figure 3-25. Sources of RAR Program Information



Note: Other sources of information included community events, work/employer, postcards/direct mail, and state/ national newspapers.



There were several statistically-significant differences in the frequency with which different classes of 2012 participants cited their first sources of program information.

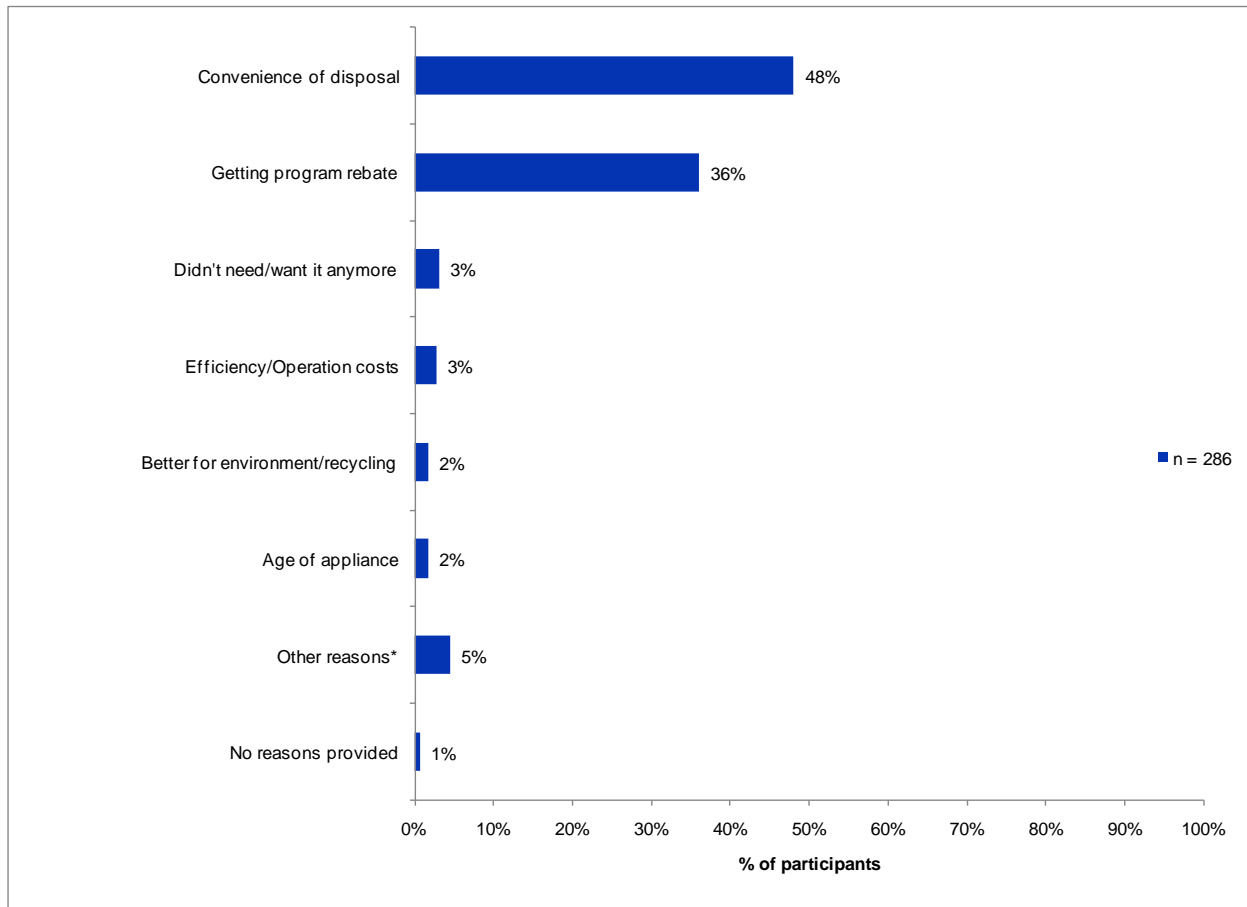
- *Bill inserts:* Respondents in households with two residents or fewer were more likely (50% of respondents) to cite the bill insert as their primary source of information than those with larger households (37%).
- *Word of mouth:* The better-educated participants were much more likely to have first heard about the program via word of mouth. Participants with four-year degrees were more likely (22%) to have heard about the program from their friends, relatives, or neighbors than those with a high school degree or less (9%).
- *Local newspapers:* Participants who said that their primary reason for participating in the program was to get the rebate were more than twice as likely (15% of respondents) to say they first heard about the program from a local newspaper as those who had other primary motivations for joining the program (7%). One possible explanation for this is that the newspaper articles did a better job than other program information sources of highlighting the rebates.
- *Television/radio:* The participants with a high school degree or less were much more likely (11%) to have heard about the program from television or radio than those with a four-year degree (2%). We have had similar findings – e.g. that television/radio is better at reaching the less-educated customers – in other evaluations we have conducted.

3.3.6 Reasons for Participation

The survey asked respondents what was the main reason they chose the program to dispose of their appliance. The most common response was that the participants wanted to take advantage of the convenience of disposal (48%). The next most common reason was to get the rebate (36%). Figure 3-26 shows all the responses. Interviews we have conducted with JACO representatives in the past have revealed that for most appliance recycling programs nationwide these are the top two reasons for program participation.



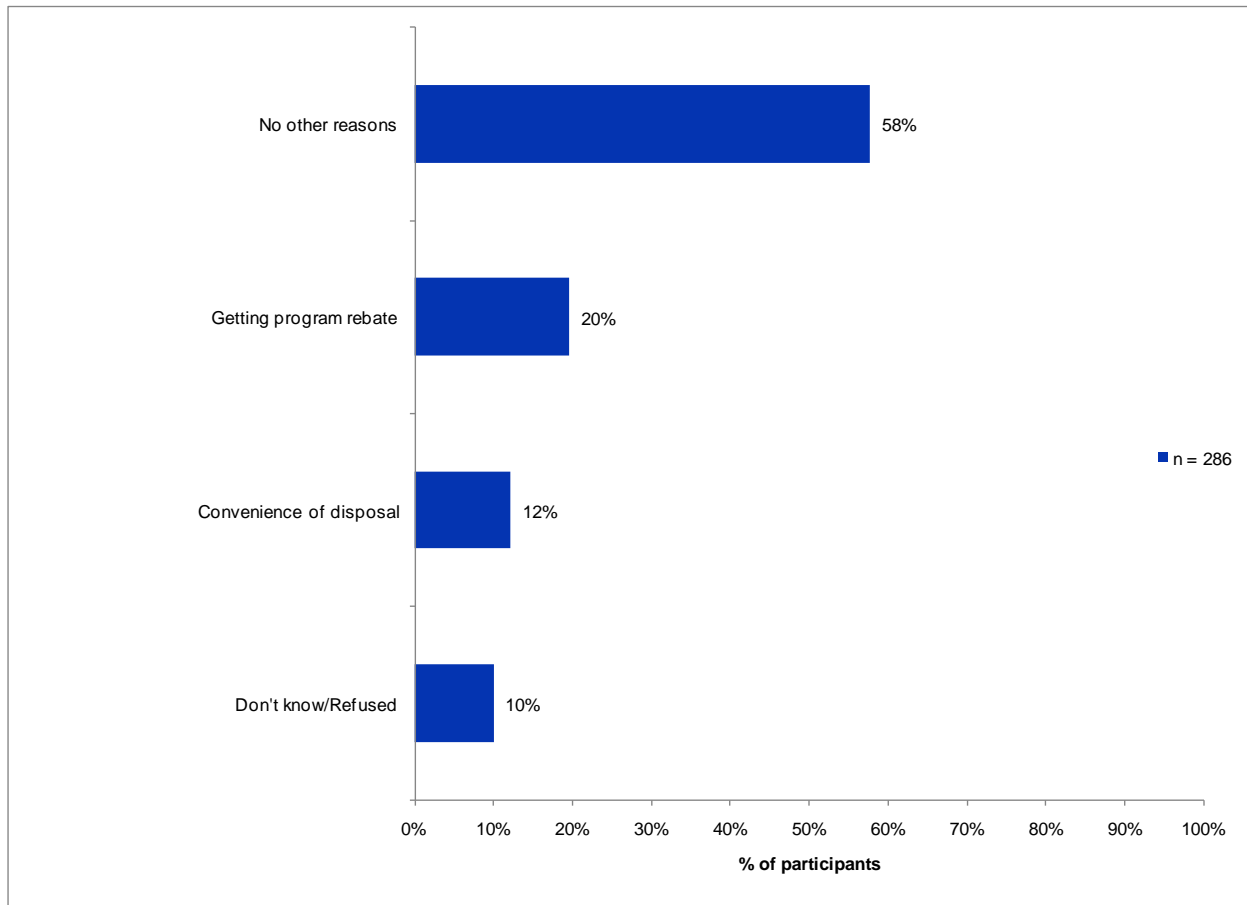
Figure 3-26. Primary Reason for Participating in Program



Note: Other reasons included: replaced with new appliance, appliance was failing, and they received a recommendation from somebody.

We also asked the participants whether they had any other reasons for choosing this service to dispose of their appliance. Figure 3-27 shows that most (57%) of the respondents did not have any other reasons for participating in the program. Getting the rebate and the convenience of the pickup were the most-cited secondary reasons.

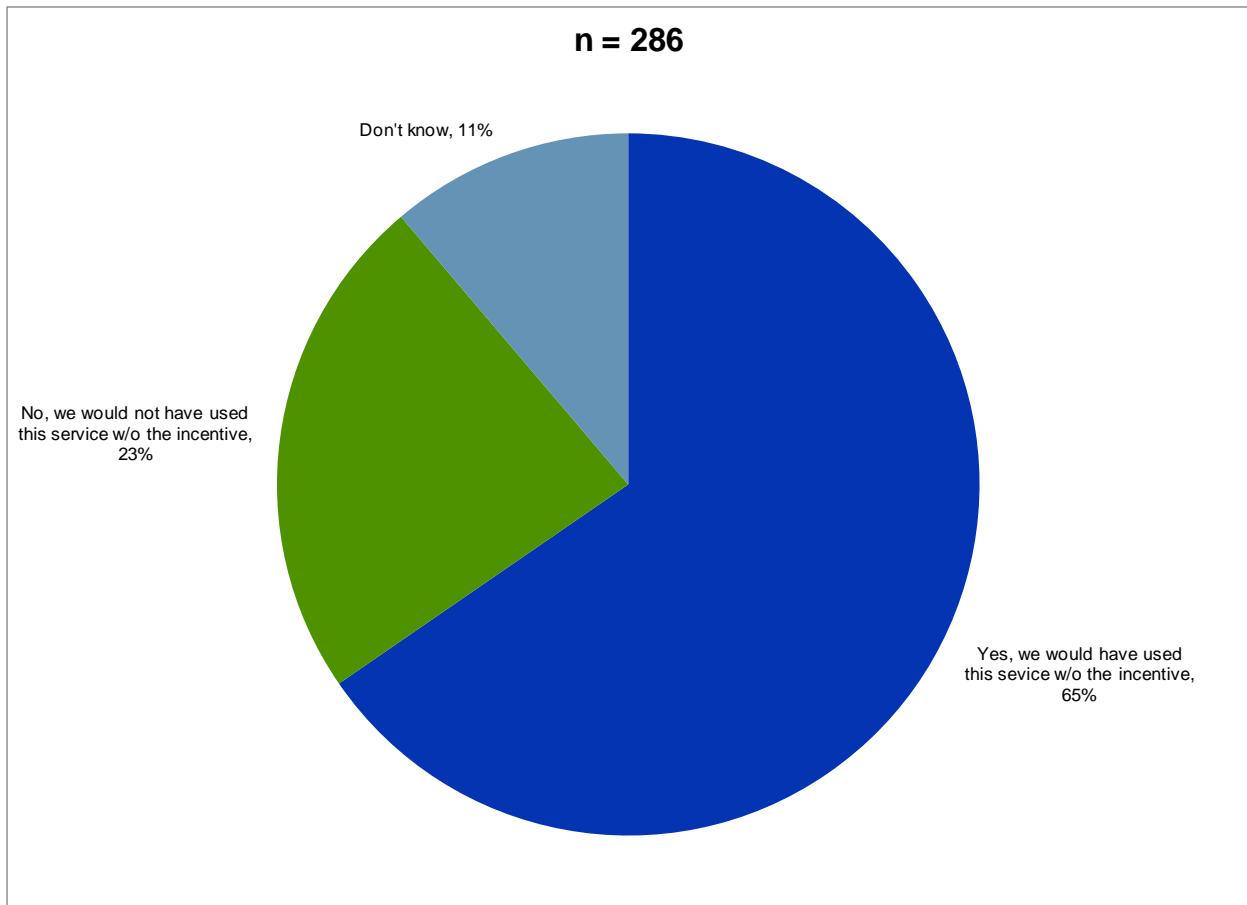
Figure 3-27. Secondary Reasons for Participating in Program



The survey asked the participants whether they were aware of the program incentive before they scheduled the pickup of their appliance. The large majority (88% of respondents) said that they were. Not surprisingly those who said that receiving the rebate was their primary reason for participating in the program were more likely (94%) to claim prior awareness of the incentive than those who had other primary motivations for joining the program (85%).

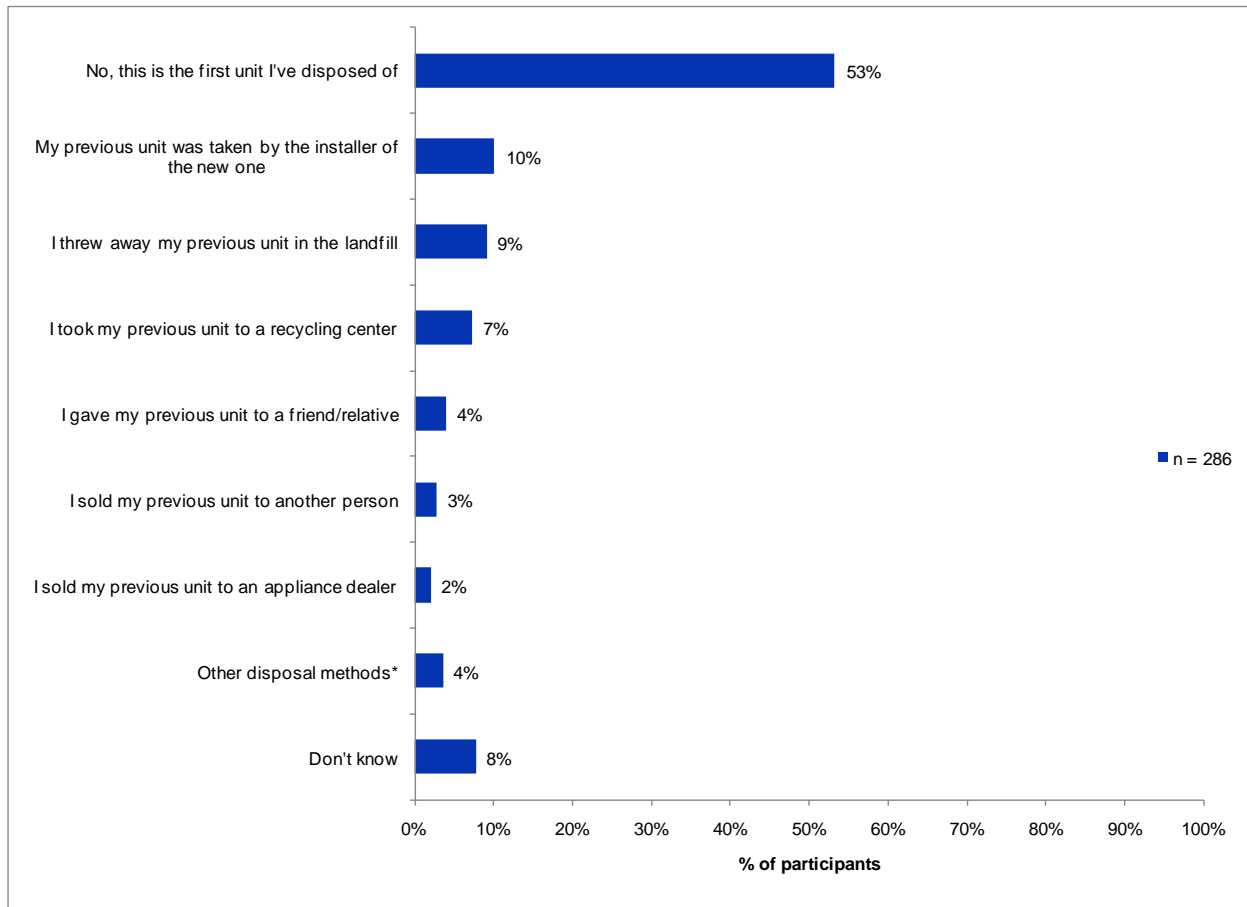
The survey also asked whether respondents would still use the disposal service if there were no incentive offered. About two-thirds (65%) of respondents said they would (Figure 3-28). Not surprisingly, participants who said that receiving the rebate was their primary reason for participating in the program were more likely (31% of respondents) to say that they would not use the program without the incentives than respondents who had other primary reasons for program participation (19%). Participants who

Figure 3-28. Whether Participants Would Have Used the Program without the Incentives



The survey asked the participants whether they had disposed of refrigerators or freezers in the past and, if so, how they had gotten rid of the units. Over half (53%) of respondents said this was the first time they had disposed of one. Those participants who had previously disposed of a refrigerator or freezer had taken a wide variety of disposal actions which are summarized in Figure 3-29.

Figure 3-29. Previous Means of Disposing of Appliances



Note: Other disposal methods included setting the refrigerator/freezer out on the curb for someone to take, selling the unit to an appliance disposal company, and donating it to charity.

These disposal behaviors differed to a statistically-significant degree depending on the demographics and other characteristics of the program participants.

- Education:** Participants with some graduate school education were the least likely (20% of respondents) to say that this was the first refrigerator/freezer they disposed of. In comparison, participants with lesser levels of education were much more likely (51-59% depending on education level) to say that this was the first unit they disposed of. Participants with some graduate school education were also much more likely (60%) to say the installer of the new equipment took away their old equipment than those with lesser levels of education (7-14% depending on education level).
- Gender:** Male respondents were more likely (12%) than female respondents (6%) to say that they took their previous refrigerators/freezers to the landfill. They were also much more likely (10%) than female respondents (4%) to say they took their refrigerators/freezers to a recycling center.



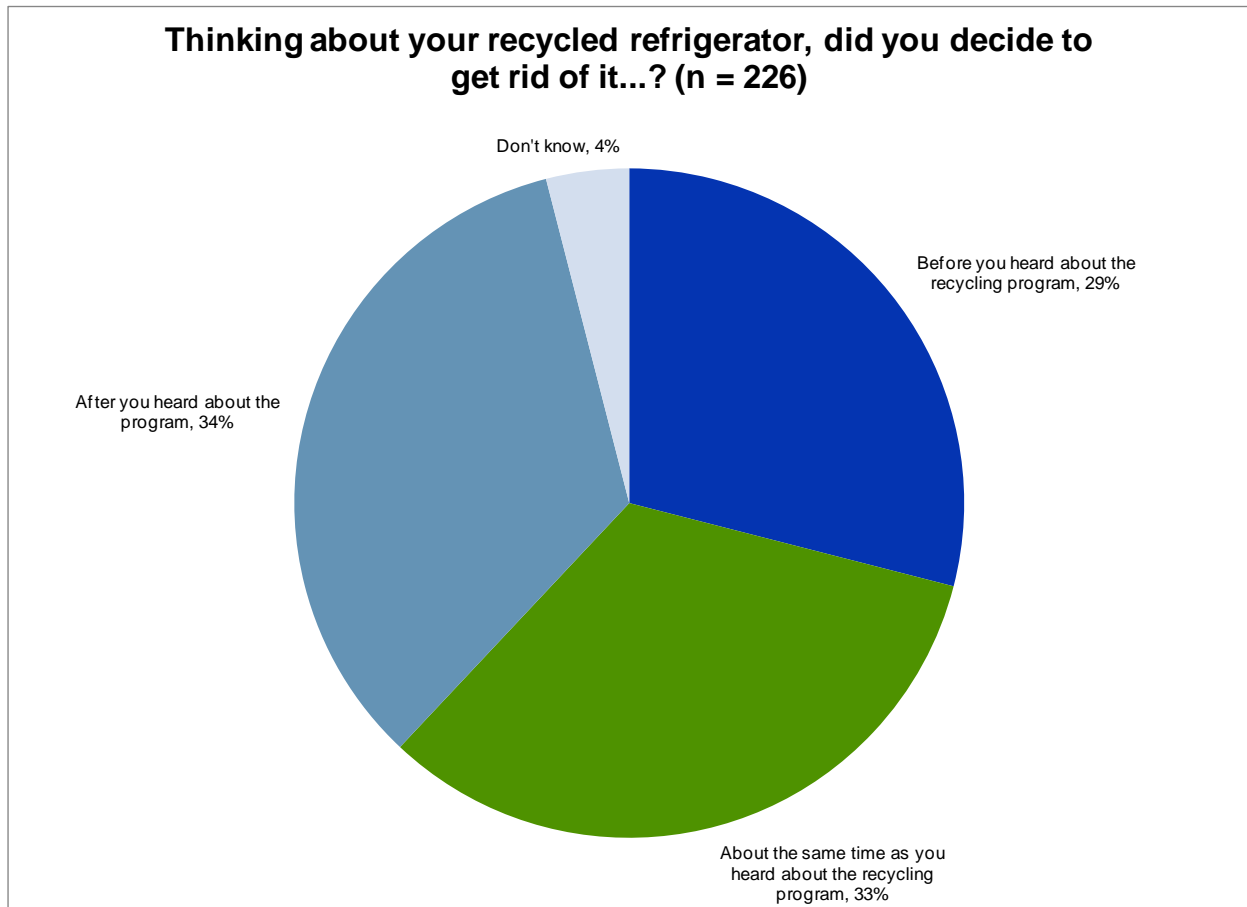
3.3.7 Program Attribution

The survey asked when participants decided to dispose of their refrigerator relative to when they heard about the program. Figure 3-30 shows that responses were roughly evenly distributed between making the decision before hearing about the program (29%), making the decision at about the same time as hearing about the program (33%), and making the decision after hearing about the program (34%).

There were some interesting differences in responses based on the demographic characteristics of the respondents.

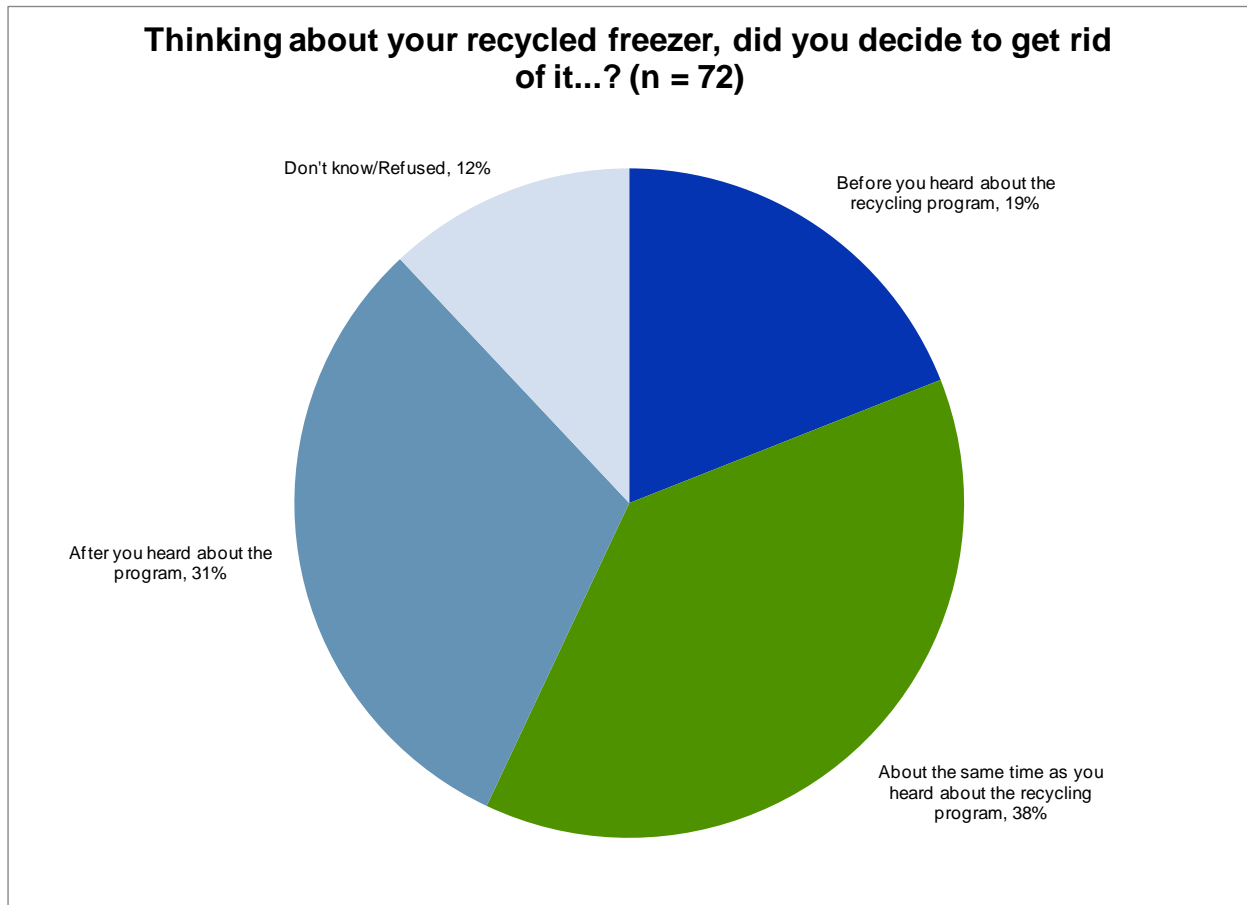
- *Education:* The more education a participant had, the more likely they were to report that they had decided to get rid of their refrigerator before hearing about the program. Seventy-percent of participants with graduate school education and 41 percent of those with a four-year college degree reported this. In contrast, only 23 percent of those with a high school degree or less and 21 percent of those with some college reported this. This makes sense when this information is paired with information from the previous subsection which indicated that those with some graduate school education were much more likely to be replacing their refrigerators on a regular basis. A likely scenario is that many of these highly-educated customers had once again decided to replace their refrigerators and the Appliance Recycling program conveniently became available when they were looking to get rid of their old refrigerators.
- *Household size:* Respondents in households with more than two occupants were more likely (39%) to say that they had decided to get rid of their refrigerator before hearing about the program than those in smaller households (22%).

Figure 3-30. Refrigerator Disposal Decision Timing



The survey also asked respondents who recycled a freezer when they decided to dispose of the unit relative to hearing about the program. Compared to the refrigerators participants, the freezer participants were less likely to report that they decided to get rid of their freezers before hearing about the program (Figure 3-31). Participants in households with two or fewer residents were much more likely (33%) than those in larger households (12%) to say that they decided to get rid of their freezers after they heard about the program.

Figure 3-31. Freezer Disposal Decision Timing

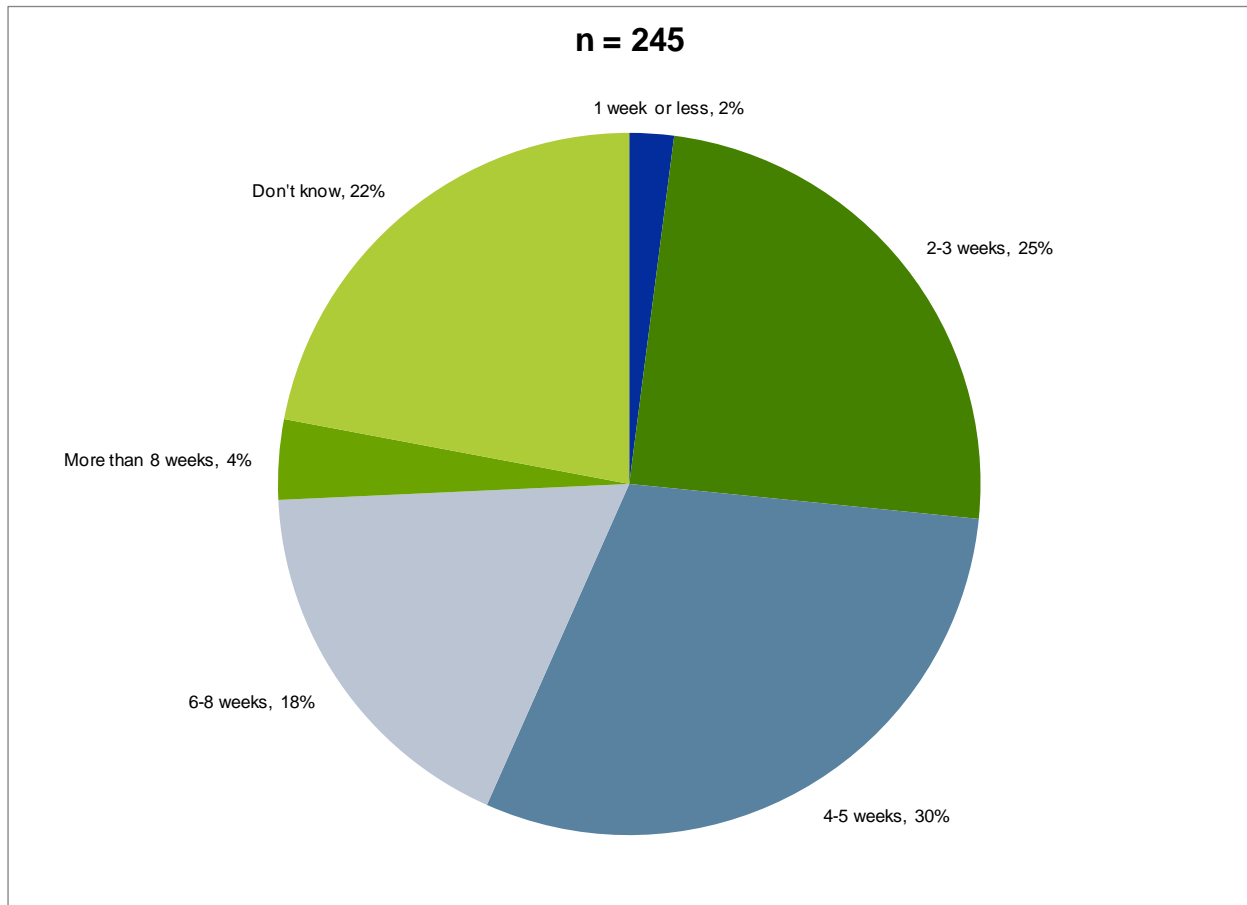


We also asked participants if the program had not picked up the appliances when it did, whether they would have kept these appliances or gotten rid of them. Among the refrigerator participants, 70 percent said they would have kept them and 29 percent said they would have gotten rid of them. Among the freezer participants, 65 percent said they would have kept them and 29 percent said they would have gotten rid of them.

3.3.8 Satisfaction

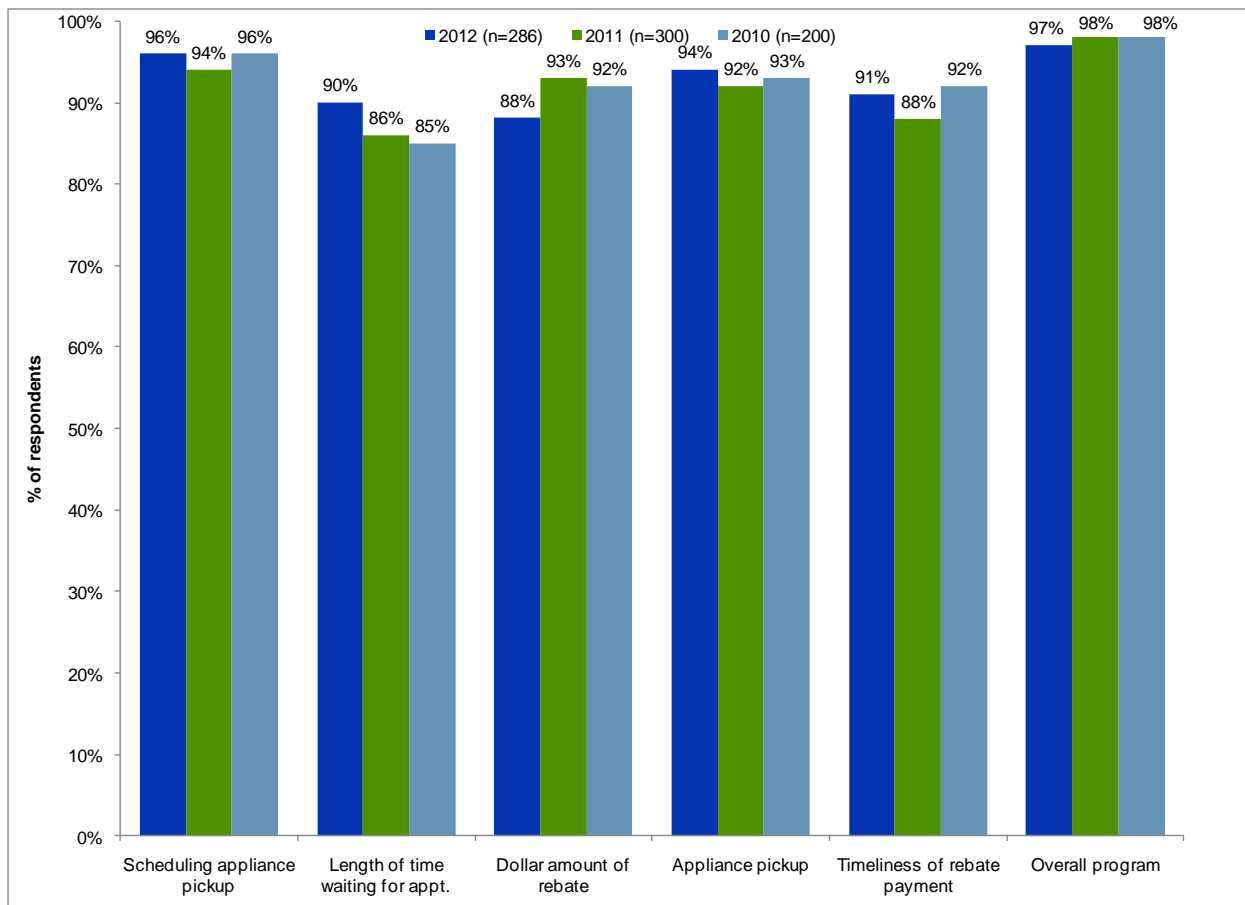
This section summarizes the responses of participants to various questions relevant to participant satisfaction with the program. We asked the program participants how long they had to wait after the appliance pickup for their incentive check to arrive. Figure 3-32 shows that the most common response was 4-5 weeks.

Figure 3-32. How Long Participants Had to Wait For Their Incentive Check to Arrive



The survey asked a series of questions about respondents’ satisfaction levels with several characteristics of the program. Respondents answered on a five-point scale where 5 meant “very satisfied” and 1 meant “not at all satisfied.” Satisfaction with the program was high for all questions asked (Figure 3-33) continuing a trend of high satisfaction ratings for this program over the last three years. Almost all of the 2012 respondents were satisfied (4 or 5 on the five-point scale) with the scheduling process (96%), the length of time waiting for an appointment (90%), the payment amount (88%), the pickup itself (94%), the timeliness of the rebate payment (91%), and the program overall (97%). Compared to previous years the 2012 participants appear to be more satisfied with the length of time waiting for an appointment, but less satisfied with the dollar amount of the rebate payment.

**Figure 3-33. % Satisfied with Program Characteristics
(4 or 5 on five-point scale)**



There were a few statistically-significant differences in the satisfaction of the 2012 respondents depending on participant characteristics:

- *Gender:* Female respondents were much more likely (5% of female respondents) to say that they were less than satisfied with the pick-up of the appliance than male respondents (1%).
- *Household income:*
 - Respondents who refused to report their annual household income were more likely (7% of respondents) than those who did report their income (1-4%) to say they were less than satisfied with the process for scheduling the appliance pickup.
 - Respondents reporting annual household incomes of \$50,000 or greater were more likely (84%) than those who did not report their income (72%) to say they were very satisfied with the rebate amount.



- Respondents reporting annual household incomes of \$50,000 or greater were more likely (100%) than those reporting less than \$50,000 (95%) or those who did not report their income (97%) to say they were very satisfied with the program as a whole.
- *Respondent education:*
 - Respondents with graduate education were more likely (100% of respondents) than those with lesser levels of education (87-92% depending on education level) to say they were very satisfied with the pickup of their appliances.
 - Respondents with graduate education were more likely (100%) than those with lesser levels of education (90-92% depending on education level) to say they were very satisfied with the timeliness of the rebate payment.
- *Type of appliance recycled:*
 - Participants who only recycled a refrigerator were more likely (11% of respondents) than those who only recycled a freezer (5%) to say that they were less than satisfied with the rebate amount.
 - Participants who recycled both a refrigerator and a freezer were more likely (100%) to be satisfied with the timeliness of the rebate payment than those who only recycled a refrigerator (91%) or those who only recycled a freezer (88%).
 - Participants who recycled both a refrigerator and a freezer were more likely (100%) to be satisfied with the whole program than those who only recycled a refrigerator (100%) or those who only recycled a freezer (100%).

Respondents who provided a satisfaction rating of three or less (on a five point scale) for any program aspect were asked why they were less than satisfied. It should be noted that very few respondents fell into this category. Reasons for lack of satisfaction included:

- *Program enrollment and scheduling:* The most-cited source of dissatisfaction was not being able to schedule a convenient time of pickup (50% of less-than-satisfied respondents) followed by the respondents indicating that the program could not tell them a definite time when they would pick the appliance up (25%).
- *Length of time waiting for appliance pickup:* Not surprisingly the most-cited source of dissatisfaction (75% of less-than-satisfied respondents) was that the program could not schedule the pickup as quickly as respondents wanted/needed. The second-most-cited source of dissatisfaction (11%) was that the people picking up the appliances seemed “disorganized.”



- *The appliance pickup:* The most-cited source of dissatisfaction (57% of less-than-satisfied respondents) was that the program did not come on the scheduled date/time followed by reports of damage to the house while removing the appliance (29%) and the program staff not appearing courteous or professional (14%).
- *The rebate amount:* The most-cited source of dissatisfaction (89% of less-than-satisfied respondents) was that the rebate amount was not large enough followed by those claiming they never received the rebate (4%).
- *The timeliness of the rebate payment:* Not surprisingly the most common reason for dissatisfaction (85% of less-than-satisfied respondents) was that the rebate payment took too long to arrive followed by respondents claiming they never received the rebate payment (10%).

3.4 Online Audit Component of the Home Performance Program

3.4.1 Program Description

The Residential Audit and Weatherization (RAW) Program was launched in March 2010. In 2012 this program was merged with the former Residential HVAC Program to form the Home Performance Program (HPP). The HPP is the largest residential program in the MCAAA portfolio. One component of the HPP provides a free online self-auditing tool for residential buildings of four units or less. Participants that complete the full audit receive one of three kinds of energy kits. The type of kit that the customer receives is dependent on the type of energy service delivered by the sponsoring utility (gas or electric) and the fuel used by the customer's water heater. The program is offered in all Efficiency UNITED (EU) utility service territories except Bayfield Electric Cooperative.

3.4.2 Methodology

CLEAResult provided DNV KEMA with a sample population of 1,564 users of the online audit tool as of August 31, 2011. DNV KEMA contracted Research America (RA) to conduct computer-aided telephone interviews (CATI) of program participants. Of the 1564 online audit tool users in the population, RA called 1,330 before the sample quota was satisfied. RA completed interviews with 300 in December, 2010 and January, 2011. This was a final response rate of 23 percent (Table 3-10). Phone numbers were called at least eight times over at least two weeks before being considered unreachable.

Table 3-10. CATI Survey Dispositions

Sample Description	Number	Percent
Starting Sample	1,564	
Never Called	234	
Sample Used	1,330	
Complete	300	23%
Contacted - Not Eligible	145	11%
Refused	386	29%
Contacted, not completed	499	38%

The CATI survey was similar to the one used for the 2010 and 2011 evaluations and covered the following topics:

- How users found out about the online audit tool;
- How easy the tool was to use;
- Whether the tool provided useful information;
- Whether the customers had any unanswered questions after using the tool;
- Whether they had installed the measures provided in the kit (and in the case of the CFLs – where they had installed them);
- Whether they had installed any other energy-efficient measures (or take any other energy-efficient actions) besides those provided in the kit and what these other measures/actions were;
- Energy efficiency knowledge and attitudes; and
- Demographic information.

3.4.3 Characterizing the Participants

The survey asked a series of demographic questions to help characterize the program participants. Highlights are summarized below:

- *Home ownership:* The majority (87%) of respondents own their home. This is a significant decrease from 2011 (99%).
- *Housing types:* Almost all (85%) of respondent homes were detached single family homes, a significant decrease from 2011 (92%). Other home types included buildings with two or more apartments (7%), mobile homes (4%), and attached single-family homes (duplexes or condos; 3%).
- *Occupancy patterns:* A few (4%) participating homes were seasonal homes.
- *Household characteristics:* Twenty-one percent of participating homes had one resident (14% in 2011), 47 percent had two residents, 14 percent had three residents, 11 percent had four residents, and six percent had five or more residents. More than one quarter (29%) of the homes had at least one resident age 65 or older. In contrast to 2011, the majority of homes had individuals under the



age of 18: 87% reported at least one person between 5 and 18 years of age in the home and 76% reported at least one person under 5 years old.

- *Respondent education levels:* Thirty percent of participants had a high school diploma, equivalent, or less; 24 percent had some college or trade school, 22 percent had a four-year degree, and 20 percent had some graduate school education or a graduate school degree. The only change from 2011 that was significant was the increase in respondents with graduate education – up from 11%.
- *Respondent incomes:* Fourteen percent of participants said they earned less than \$20,000 in 2011 before taxes. 33 percent said they earned between \$20,000 and \$49,999, 18 percent said they earned from \$50,000 to \$74,999, and 13 percent said they earned \$75,000 or more. The remaining 22 percent did not know or refused to answer the question.
- *Respondent gender:* Fifty-nine percent of respondents were female and 41 percent were male.
- Unless otherwise noted these demographic characteristics are similar to those of the 2011 participants.

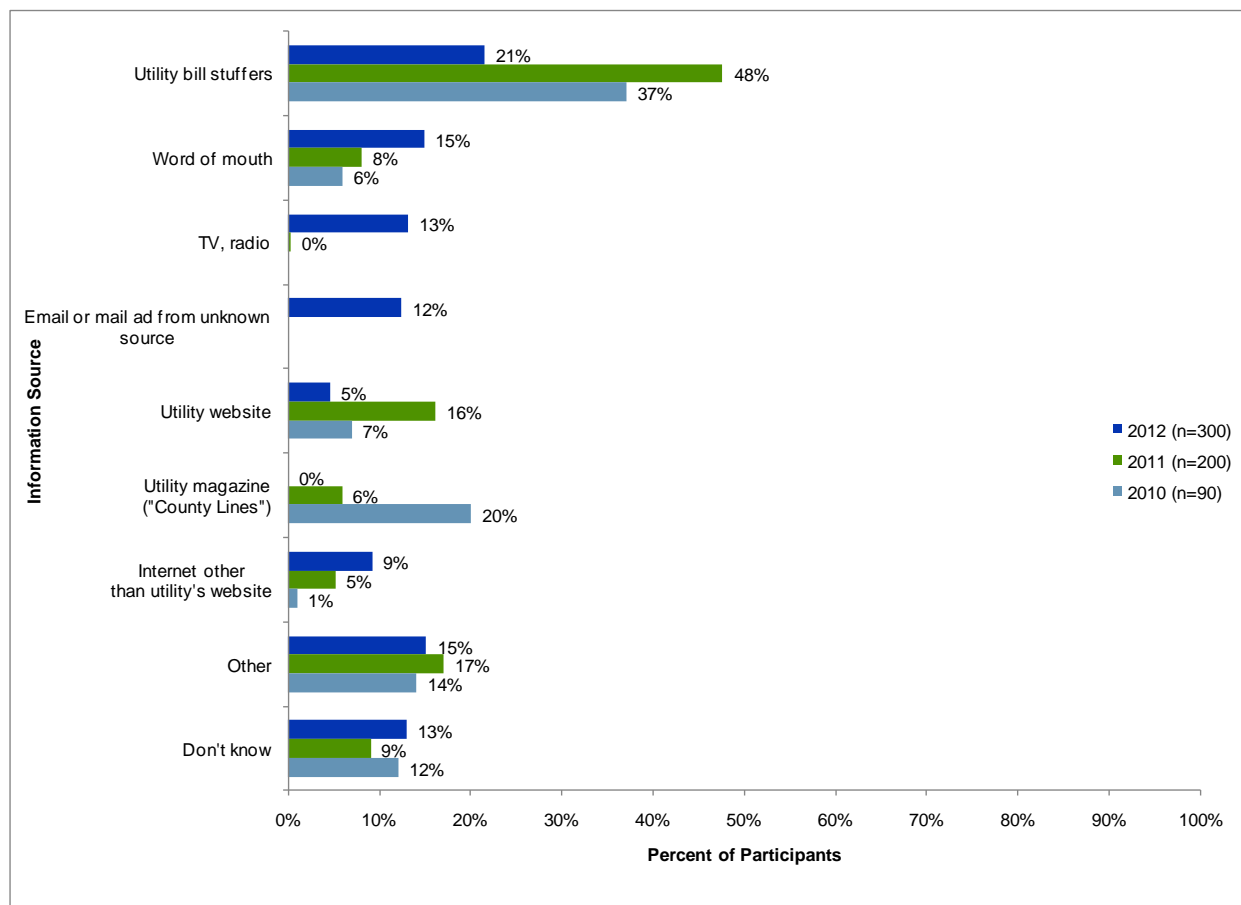
In addition to demographics questions, the survey also asked a few questions to assess participants' knowledge and attitudes about energy efficiency.

- Eighty-five percent of the 2012 participants had heard of ENERGY STAR prior to completing the survey, a decrease from 2011 (92%).
- Almost all were very concerned (53%) or somewhat concerned (42%) with reducing their home's energy use. While the same proportion of people overall reported being concerned at all (95% in both 2011 and 2012), there is a significant shift away from 'very concerned' (61% to 53%) and towards 'somewhat concerned' (34% to 42%).
- Reasons for concern over reducing home energy use included the cost of energy or reducing the utility bill (95%), environmental concerns (20%), concern about power availability or reliability (3%), and reducing dependence on foreign oil (1%).

3.4.4 First Sources of Information about the Online Tool

The survey asked respondents how they first heard about the online audit tool. Figure 3-34 shows the sources of first program information which respondents reported. Utility bill stuffers were the most often cited source (21%), followed by word of mouth (15%), TV and radio (13%) and email or other mailed sources (12%). Respondents cited other sources of information less often.

Figure 3-34. Source of Information about Online Audit Tool



Note: Totals exceed 100% because multiple responses were accepted. Other sources includes: salesperson where equipment was purchased, community events or local schools, utility-sponsored meeting, local newspaper, state/national newspapers, and unspecified others.

These responses were a change from 2011. Utility bill stuffers were cited by one-third (37%) of respondents in 2010 and half (48%) of respondents in 2011. In 2012, just over one-fifth (21%) cited the same source. According to program staff, marketing efforts were broader, encompassing not only “a few bill inserts” but also Google AdWords campaigns. Expanded efforts would explain not only the drop in the primacy of bill inserts, but also the appearance of other sources like TV/radio (13%) and email (12%).

There were a number of statistically significant differences between subgroups.

- *Household size:*
 - *Utility Bill stuffers:* Households with 1-2 residents were more likely (24%) than larger households (13%) to cite bill stuffers.



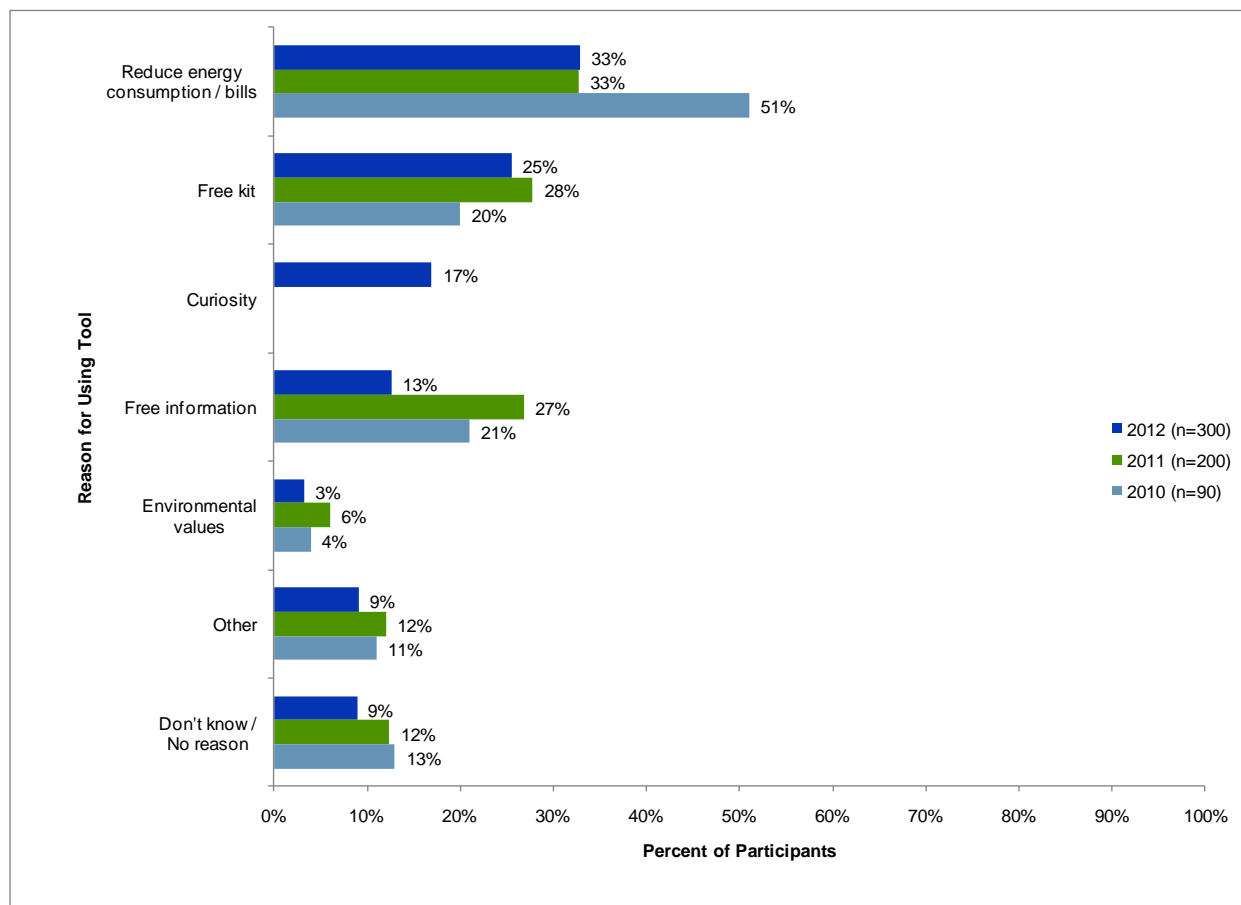
- *Email or mail ad from unknown source*: Households with 1-2 residents were more likely (15%) than larger households to cite email or unknown mail ads as their source of information.
- *Internet*: Larger households were more likely (16%) than smaller households with 1-2 people (6%) to cite the internet other than the utility website.
- *Utility website*: In addition to non-utility websites, larger households were also more likely (9%) to cite utility web sites than smaller households (2%).
- *Education*:
 - *Utility bill stuffers*: Participants with graduate school education were more likely (33%) than those with a high school education or less (17%), or those with some college education (16%) to cite bill stuffers.
 - *TV or radio*: Respondents with a high school education or less were more likely (20%) than those with a college degree or at least some graduate school education (8% each) to cite television or radio as their source of awareness.
 - *Utility website*: Respondents with a college degree were more likely (11%) than those with at least some graduate school education (3%) or those with a high school education or less (2%) to cite utility websites.
- *Energy Efficient Actions after using tool*:
 - *Word of mouth*: Respondents who reported *not* taking energy efficient actions after using the online tool were more likely (27%) than those who did (13%) to hear about the tool from word of mouth.
 - *Email or mail ad from unknown source*: Respondents who did not take energy efficient actions after using the online tool were more likely (23%) than those who did (11%) to report hearing about the tool from email or other unknown mailed ads.
 - *Internet*: Respondents who *did* take energy efficient actions after using the online tool were more likely (10%) than those who did *not* take action (2%) to hear about the tool online from a site other than the utility.

3.4.5 Reasons for Using Online Audit Tool

The survey asked respondents why they decided to use the online audit tool. Figure 3-35 shows the reasons respondents gave for using the tool. One-third (33%) said they used the tool to help them reduce

their energy consumption or reduce their energy bills. Other oft-cited reasons included getting the kit with free measures (27%), curiosity (17%), and getting free information (13%).

Figure 3-35. Reasons for Using Online Audit Tool



Note: The total exceeds 100% because respondents were allowed to give multiple responses.

The chart shows that respondents in 2012 were very similar to 2011, with the exceptions of respondents citing curiosity and fewer citing free information. Those looking to reduce their energy consumption or bills remained unchanged from 2011, as did those looking for a free kit, strengthening the idea posed last year that a higher percentage of early adopters are looking to get savings. One explanation for the change this year is that as word of mouth increases, people are simply going to ‘check out’ what others have talked about.

Among the 2012 respondents there were statistically-significant differences in the stated reasons for using the online audit tool depending on respondents’ household size income, age and whether they took energy efficient actions.

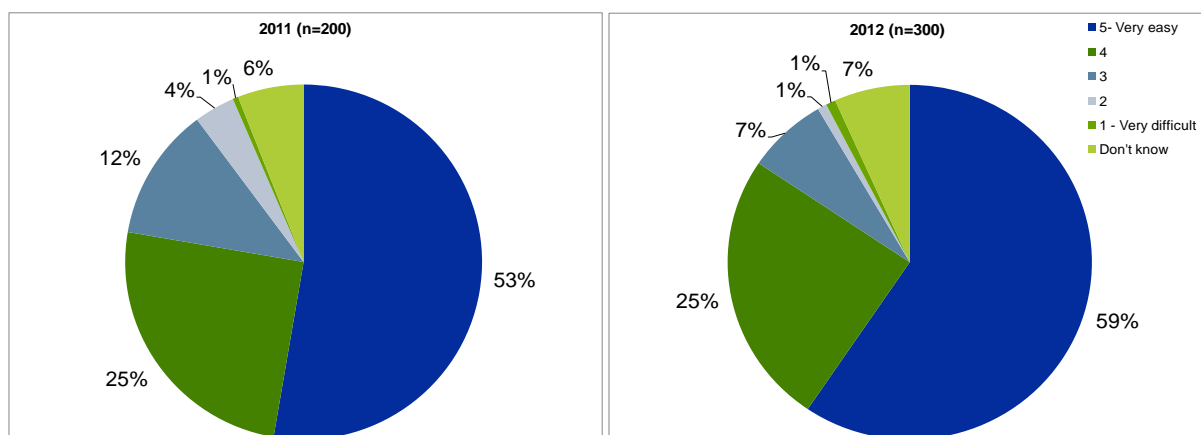


- **Household size:** Respondents in households with more than two people were more likely (40%) than those in smaller households (29%) to have completed the audit in order to reduce energy consumption or bills.
- **Income:** Respondents with annual incomes greater than \$50,000 were *less* likely (16%) than those with annual incomes less than \$50,000 (28%) or those who did not report their income (33%) to say they completed the audit in order to get the free kit. Respondents with annual income greater than \$50,000 were more likely (6%) than those with annual income less than \$50,000 (<1%) to say they completed the audit because they were asked to.
- **Age:** Respondents aged 40-64 were more likely (40%) than those under age 40 (27%) or those over 65 (24%) to cite reducing their energy consumption or bill as the reason for completing the audit.
- **Taking energy efficient actions:** Respondents who reported taking energy efficient actions after using the audit tool were more likely (35%) than those who stated that they did not take any actions (20%) to have completed the audit to reduce their energy consumption or bill. Respondents who did not take any energy efficient actions were more likely (19%) than those who did take actions (7%) to not know why they decided to complete the audit.

3.4.6 Ease of Use

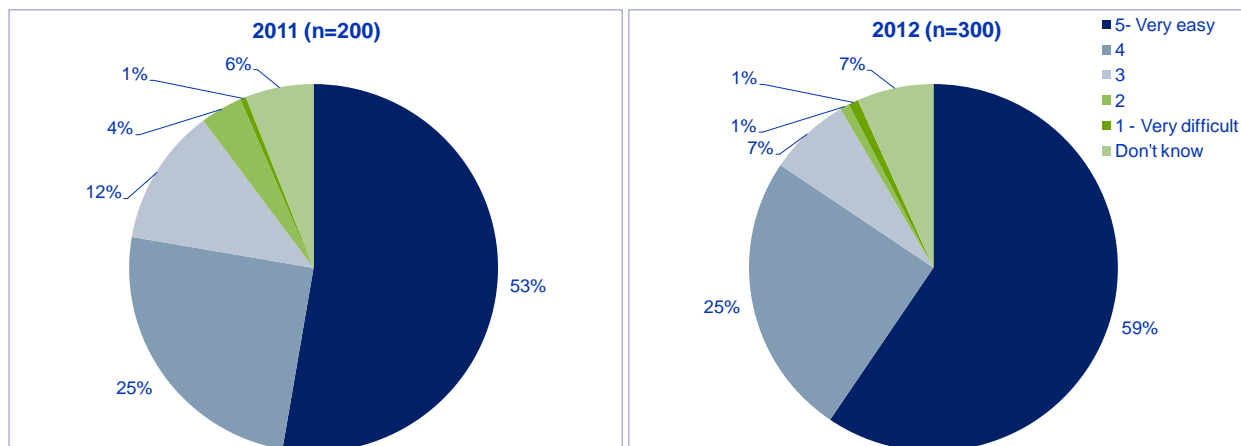
The survey asked respondents to rate how easy or difficult the online audit tool was to use. It had them use a five point scale where 1 meant “very difficult” and 5 meant “very easy.” Figure 3-36 shows the responses of those who responded that the tool was easy. Eighty-four percent of the respondents thought the tool was easy to use, a significant increase from 2011.

Figure 3-36. Ease of Use of Online Audit Tool



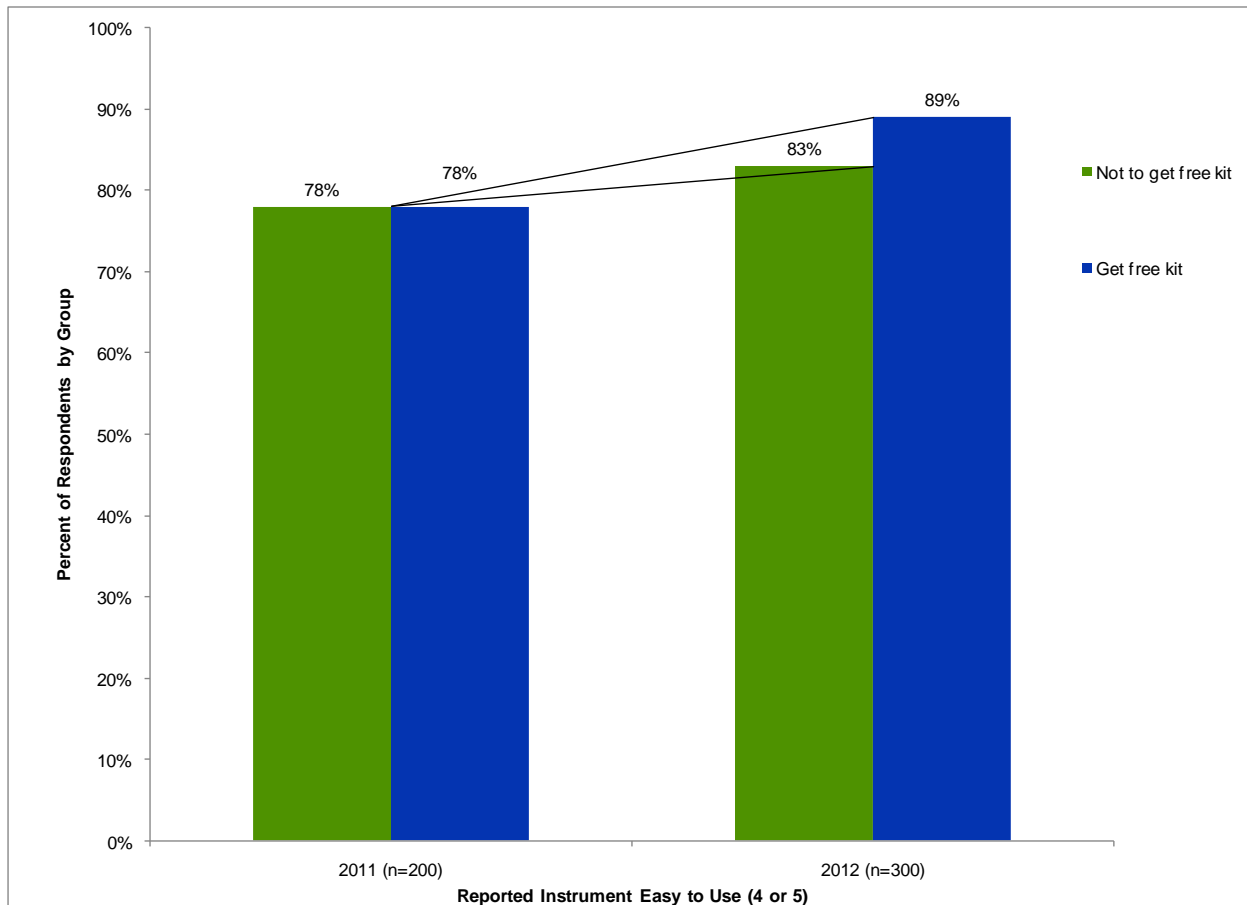
Most (59%) of the respondents thought the tool was "very easy" to use in 2012. It should be noted that while this increase accounts for the statistically significant increases discussed above in Figure 3-36, this increase from 53 percent to 59 percent is not statistically significant. Another 25 percent gave a rating of 4 on the five-point scale, unchanged from 2011 statistically and absolutely. The distribution of total responses by year are shown in Figure 3-37.

Figure 3-37. Online Audit Participant Assessment of Ease of Use of Audit Tool



As mentioned in the 2011 report, CLEAResult made changes to the online tool in November 2011. It is possible that these changes are responsible for the increase in respondents' perceived ease of use, although this was not asked directly. These modifications allowed customers who were more interested in the free kit than in identifying energy savings opportunities to take a more streamlined version of the online audit tool. In 2011, 78 percent of both those who said they completed the audit to get the free kit and those who did not rated the ease of use as a '4' or '5' and 78% of those. In 2012, those who performed the audit for reasons other than getting the free kit increased their rating from 78 percent to 83 percent while those who did increased their rating from the same 78 percent to 89 percent, as shown. This provides evidence that the changes made to streamline the online tool for those looking to get the free kit was effective.

Figure 3-38. Online Audit Participant Assessment of Ease of Use of Audit Tool Disaggregated by Importance of Free Energy Kit



There were some statistically-significant differences among respondent sub-groups including:

- **Household size:** There were a number of differences based on household size. Larger households, those with more than two residents, were more likely (91%) than smaller households (81%) to rate the tool easy to use (4 or 5 on 5 point scale). Smaller households were more likely (11%) than larger households (4%) to find the tool less than easy to use. Smaller households were specifically more likely (9%) than larger households (4%) to give a 3 on the five-point scale.
- **Education:** Respondents with graduate education were less likely (74%) than those with a college education (89%), those with some college education (87%) and those with a high school education or less (87%), to rate the tool as easy to use. Specifically, respondents with a graduate school education were less likely than other groups to rate the tool *very* easy to use (50% vs. 67% for those with less than a high school education) and more likely to rate the tool a 3 of 5 (12% vs 4% for those with a college degree). Respondents with a graduate education were also more likely (14%) to state ‘Don’t Know’ than those with a college degree (3%).

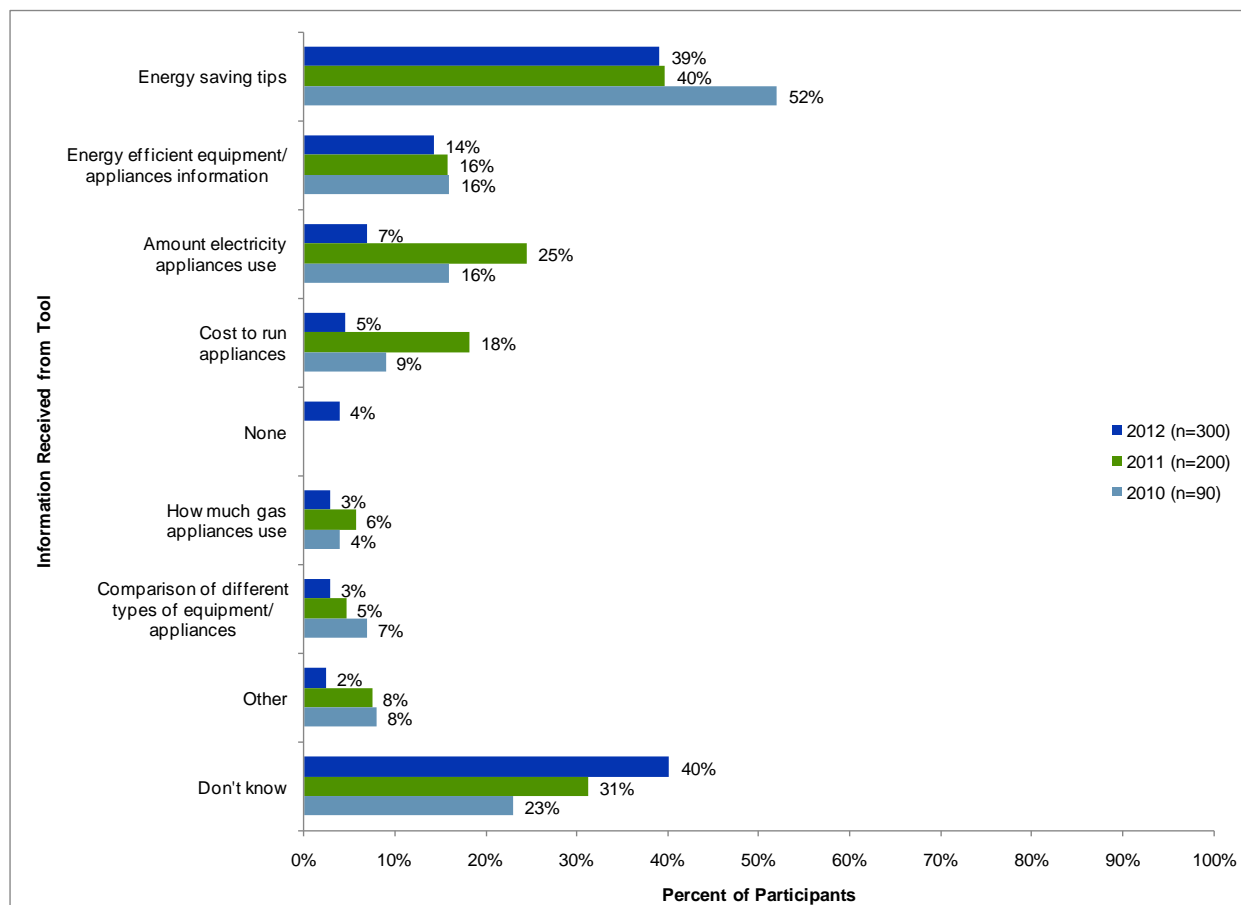


- *Age*: Respondents 65 or older were less likely (13%) than those 40-64 (27%) and those under 40 (28%) to rate tool a 4 of 5.
- *Usefulness of online tool*: Respondents who found the tool *very* useful (5 of 5) were more likely (79%) to find the tool very easy to use than those who did not find the tool useful (48%). Conversely, those who found the tool less than useful were more likely (37%) than those who found the tool useful (9%) to rate the tool easy to use (4 of 5).
- *Installed showerhead*: Respondents who installed a showerhead from the kit were more likely to find the kit easy (89%) and *very* easy to use (64%) than those who did not install a showerhead (77% and 49%, respectively).
- *Installed faucet aerator*: Respondents who installed a faucet aerator were more likely to rate the tool easy to use (4 of 5, 88%) and *very* easy to use (63%) than those who did not install a faucet aerator (76% and 48% respectively).

3.4.7 Information Provided by Tool

The survey asked respondents what type of information they received from the tool. Figure 3-39 shows the information respondents reported receiving from the tool. The most common answer provided was ‘don’t know’ followed by energy saving tips (39%), and information about energy efficient equipment and appliances (14). Respondents citing learning about the amount of energy electricity appliances use dropped from 25 to 7 percent and the cost to run appliances from 18 to 5 percent, both statistically significant changes. A significant growing proportion (40%) of respondents said they did not know or did not remember what information they received from the tool with 4 percent stating not that they did not know, but that they received no information from the tool.

Figure 3-39. What Information Participants Received from the Tool



Note: The total exceeds 100% because respondents were allowed to give multiple responses.

The chart shows that respondents who used the tool in 2012 were less likely than 2011 users to say they got energy saving tips from the tool, who in turn were less likely than 2010 users. 2012 respondents were less likely to recall any information items from the tool than 2010 or 2011 respondents.

What types of information the 2012 participants reported getting from the tool depended on a number of characteristics' and varied by response.

- *Don't know:* As the only response to grow significantly, those answering 'Don't Know' when asked about the types of information received from the audit are the most interesting. Responses of 'Don't Know' correlated with number of sub-categories.
- *Household size:* Respondents from smaller households (1-2 residents) were more likely (45%) than those with larger households (31%) to respond 'Don't Know'.



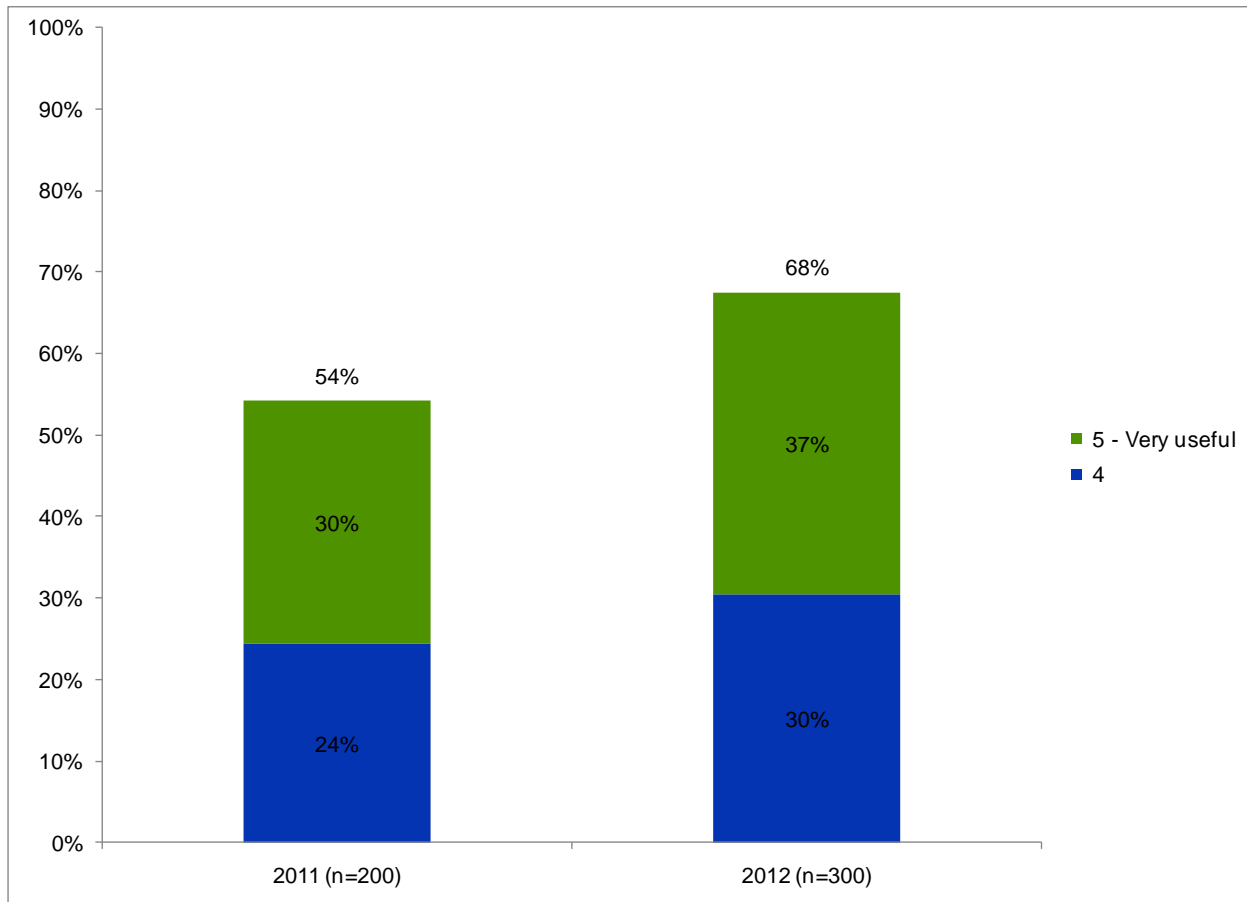
- *Income*: Respondents who did not report annual income were more likely (55%) than those reporting annual income below \$50,000 (36%) or those greater than \$50,000 (35%) to respond ‘Don’t Know’.
- *Tool usefulness*: Unsurprisingly, those who found the tool less than useful were more likely (41%) than those who found the tool very useful (31%) to respond ‘Don’t Know’.
- *Energy saving tips*: After don’t know, energy saving tips were cited as the most common types of information provided by the audit.
 - *Household size*: Larger households (>2 residents) were more likely (49%) than smaller households (34%) to cite energy saving tips.
 - *Education level*: Respondents with a high school degree or less were *less* likely (24%) than those with some college (50%) or those with a college degree (51%) to cite energy saving tips.
 - *Income*: Respondents who did not report annual income were *less* likely (22%) than those reporting annual income below \$50,000 (44%) or those greater than \$50,000 (42%) to cite energy saving tips.
 - *Free kits*: Those who completed the audit to get free kits were less likely (30%) than those who did not report being motivated by free kits (43%) to cite energy saving tips.
- *Energy efficient equipment and appliances*:
 - *Income*: Respondents who did not report income were *less* likely (6%) those reporting annual income below \$50,000 (16%) or those greater than \$50,000 (17%) to cite energy efficient equipment and appliances.
 - *Age*: Respondents 40-64 years old were more likely (19%) than those younger than 40 (8%) to cite energy efficient equipment and appliances.
 - *Showerhead installation*: Respondents who reported installing showerheads from the kits were more likely (19%) than those who did not (9%) to cite learning about energy efficient equipment and appliances.
 - *Free kits*: Those who completed the audit to get free kits were less likely (8%) than those who did not report being motivated by free kits (17%) to cite learning about energy efficient equipment and appliances.



3.4.8 Usefulness of Information

DNV KEMA asked respondents to rate the usefulness of the information provided by the tool on a five-point scale anchored at one for “not at all useful” and five for “very useful.” Thirty-seven percent of respondents said the information from the tool was very useful (5 on the five-point scale). Nearly another third (30%) gave a rating of four on the five-point scale. Figure 3-40 shows all the responses. This pattern of responses is a significant increase from 2011.

Figure 3-40. Usefulness of Information Received from Tool



The usefulness of the information is associated with energy saving actions:

- Education:** Respondents with a high school education or less (77%) or some college education (79%) were more likely than those with a college degree (59%) or graduate school education (53%) to give a rating of 4 or 5. Respondents with a high school education were more likely (53%) than those with a college degree (27%) or graduate school education (26%) to give a rating 5 – very useful.

- *Income:* Respondents reporting annual income of less than \$50,000 were more likely (73%) than those not reporting income (54%) to give a rating of 4 or 5. Those same lower income households were also more likely (43%) than those not reporting income (30%) to provide a rating of 5 – very useful.
- *Age:* Older respondents (age 65+) were more likely (51%) than those 40-64 years old (37%) to provide a rating of 5. 40-64 year olds were more likely (33%) than those 65+ to rate the usefulness a 4.
- *Got tips:* Respondents who reported getting energy saving tips from the online tool were more likely (77%) than those who did not (60%) to find the tool useful.
- *Installed kit equipment:* Respondents who said they installed the faucet aerators from the kits were more likely (75%) than those who did not (53%) to rate the information useful. Respondents who installed showerheads were more likely (76%) than those who did not (56%) to rate the information received as useful.
- *ENERGY STAR awareness:* Respondents who were not previously aware of ENERGY STAR were more likely (82%) than those who were aware (65%) to find the tool useful.

3.4.9 Installation of Equipment in Kits

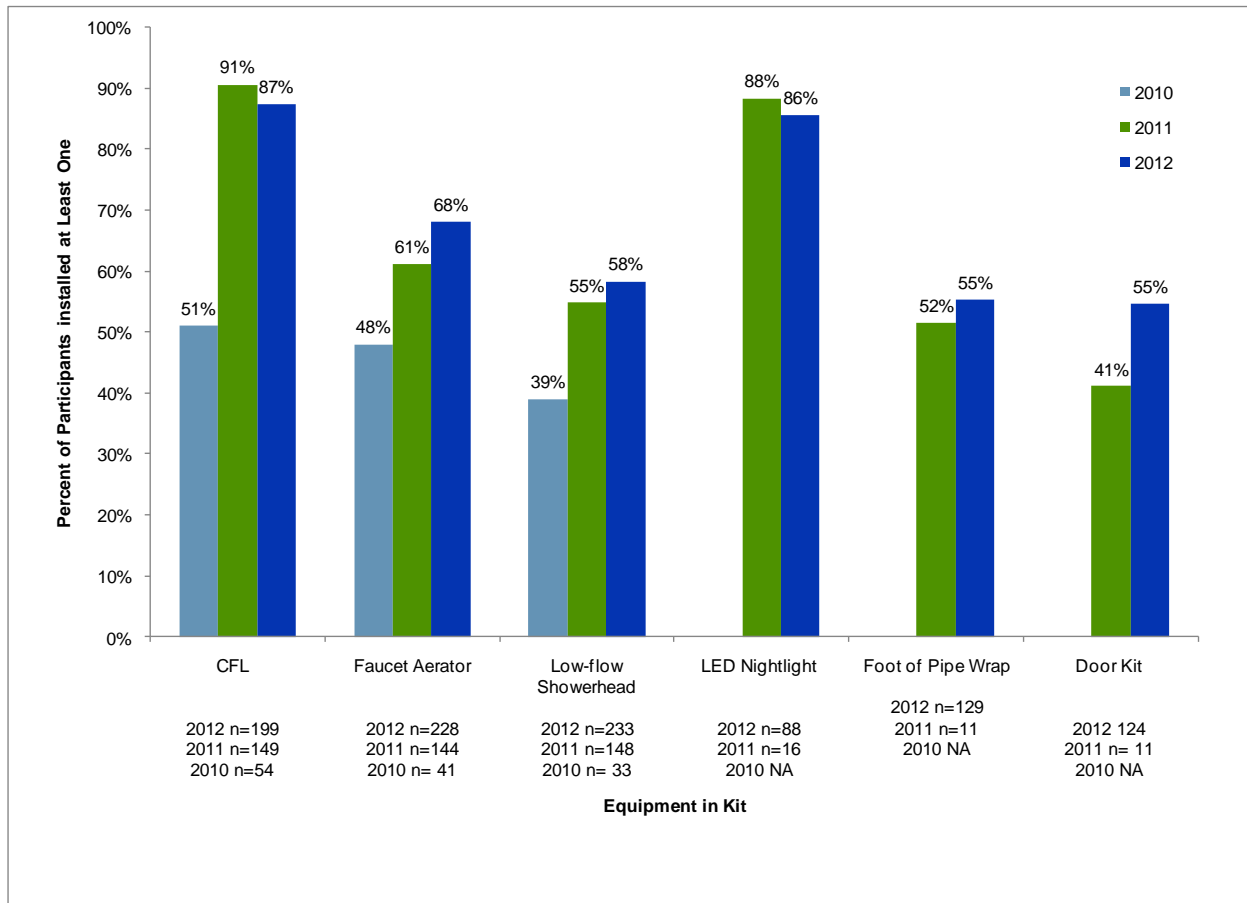
People who completed the online audit were supposed to receive a kit that contained several energy saving measures. The specific contents of the kits depended on the audit user's utility, and most kits included compact fluorescent light bulbs (CFLs), two faucet aerators, and a low-flow showerhead. Some kits also included LED nightlights, pipe insulation, and/or door sealing kits.

The survey asked respondents who remembered receiving the kit whether they had installed the equipment included in the kit. Figure 3-41 shows the percent of survey respondents who said they installed equipment included in the kit. Almost all respondents (87%) who received a kit containing them installed at least one of the CFLs, about two-thirds (68%) installed one or both of the faucet aerators, and the majority (58%) installed the low-flow showerhead.¹⁸

In 2012, most (86%) of respondents who received them installed LED nightlights. About half (55%) installed pipe wrap and 55 percent installed the door kits. Due to small changes and small sample sizes in 2011, none of these changes are statistically significant.

¹⁸ These installation rates percentages may differ slightly from those reported in the impact evaluation because savings-based weights were used in the impact evaluation and sampling weights were used in the process evaluation.

Figure 3-41. Installation of Equipment in Kits



Note: The total exceeds 100% because respondents were allowed to give multiple responses. LED nightlights, pipe wrap, and door kits were not included in the 2010 evaluation.

There were some statistically-significant differences in these installation rates based on which participant subgroups the survey respondents belonged to:

- Number of CFLs installed:** The survey asked respondents how many CFLs from the kits they installed. Answers ranged from zero to five bulbs, with 58 percent of respondents saying five bulbs.
- Faucet aerators:** There were a number of factors that contributed to faucet aerator installations. First, those with graduate education were more likely (46%) than those with some college (26%) or those with a high school education or less (21%) to have none of the faucet aerators installed. Respondents with annual income less than \$50,000 were more likely (77%) to still have aerators installed than those with greater income (60%) or those who did not report their income (56%). Finally, respondents older than 65 were more likely (80%) than those under 40 (57%) to have at least one aerator still installed.

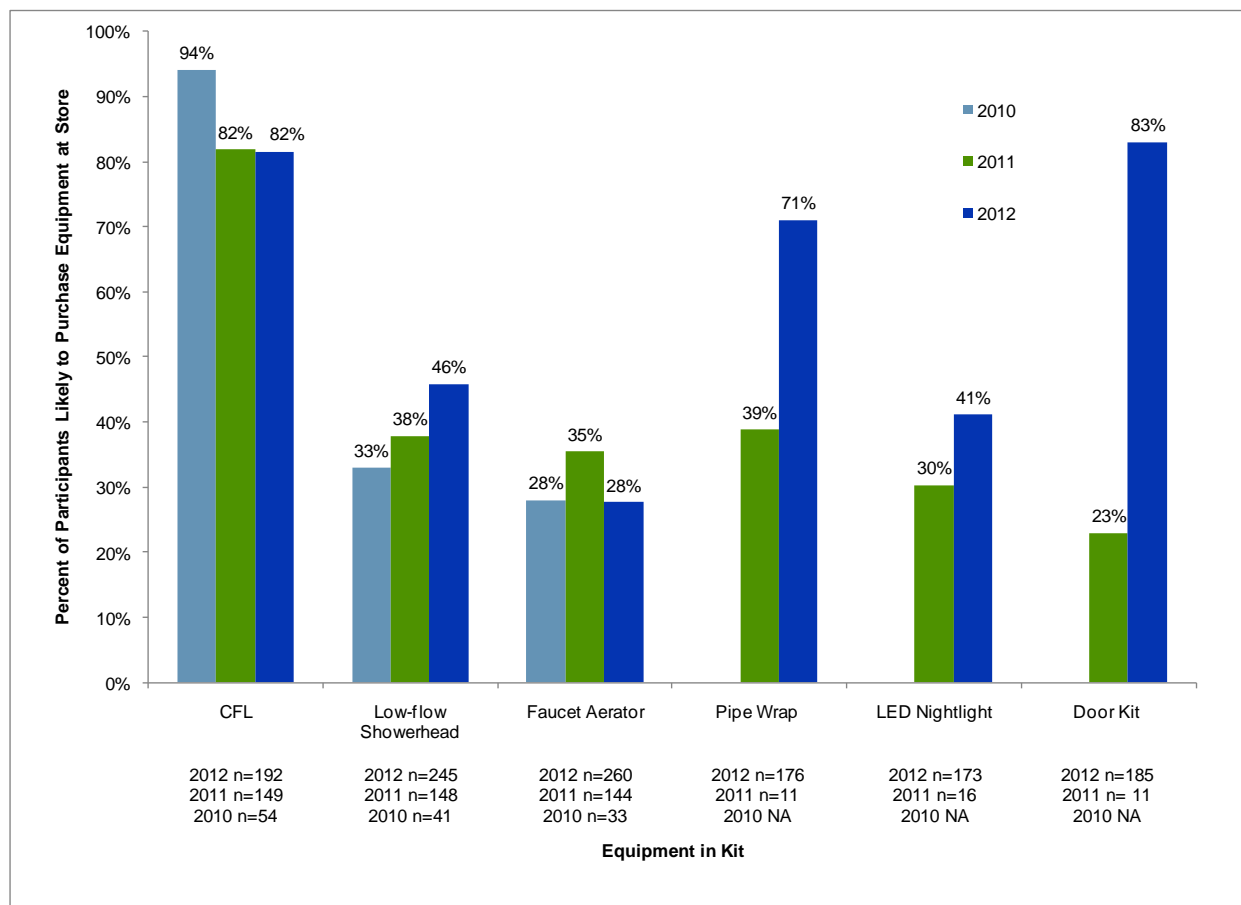


- *Showerheads:* Respondents over 65 (73%) were more likely than those under 40 (53%) and those between 40 and 65 (59%) were more likely to have their low flow showerhead installed. Respondents with a high school education or less were more likely (66%) than those with a college degree (50%) to have their low flow showerhead installed.
- *LED nightlights:* Respondents with high school education (17%) or a some college education (20%) were more likely than those with a college degree (3%) to have none of the received LED nightlights installed.
- *Pipe wrap:* Respondents with a graduate education (46%) or those with some college (42%) were more likely than a college degree (22%) to have no pipe wrap insulation installed. Those with a college degree were more likely (67%) to have a full 6-feet installed than those with a graduate education (36%), some college (45%) or high school education or less (40%).
- *Door kit:* Respondents with annual income under \$50,000 were more likely (63%) to have installed their door kits than those who did not report their income (37%). Respondents previously aware

3.4.10 Likelihood of Purchasing Kit Contents at Store

The survey asked respondents whether they would purchase any of the equipment included in their kit at a store. Possible answers were yes, probably yes, probably not, and no. Three-fourths (94%) of respondents said they would or probably would buy CFLs at the store, 83 percent would purchase door kits and 71 percent would purchase pipe wrap. Respondents were much less likely to say they would or probably would purchase low-flow showerheads (46%), faucet aerators (46%), or LED nightlights (41%). Figure 3-42 shows the full range of responses.

Figure 3-42. Likelihood of Purchasing Kit Contents at Store



Note: LED nightlights, pipe wrap, and door kits were not included in the 2010 evaluation.

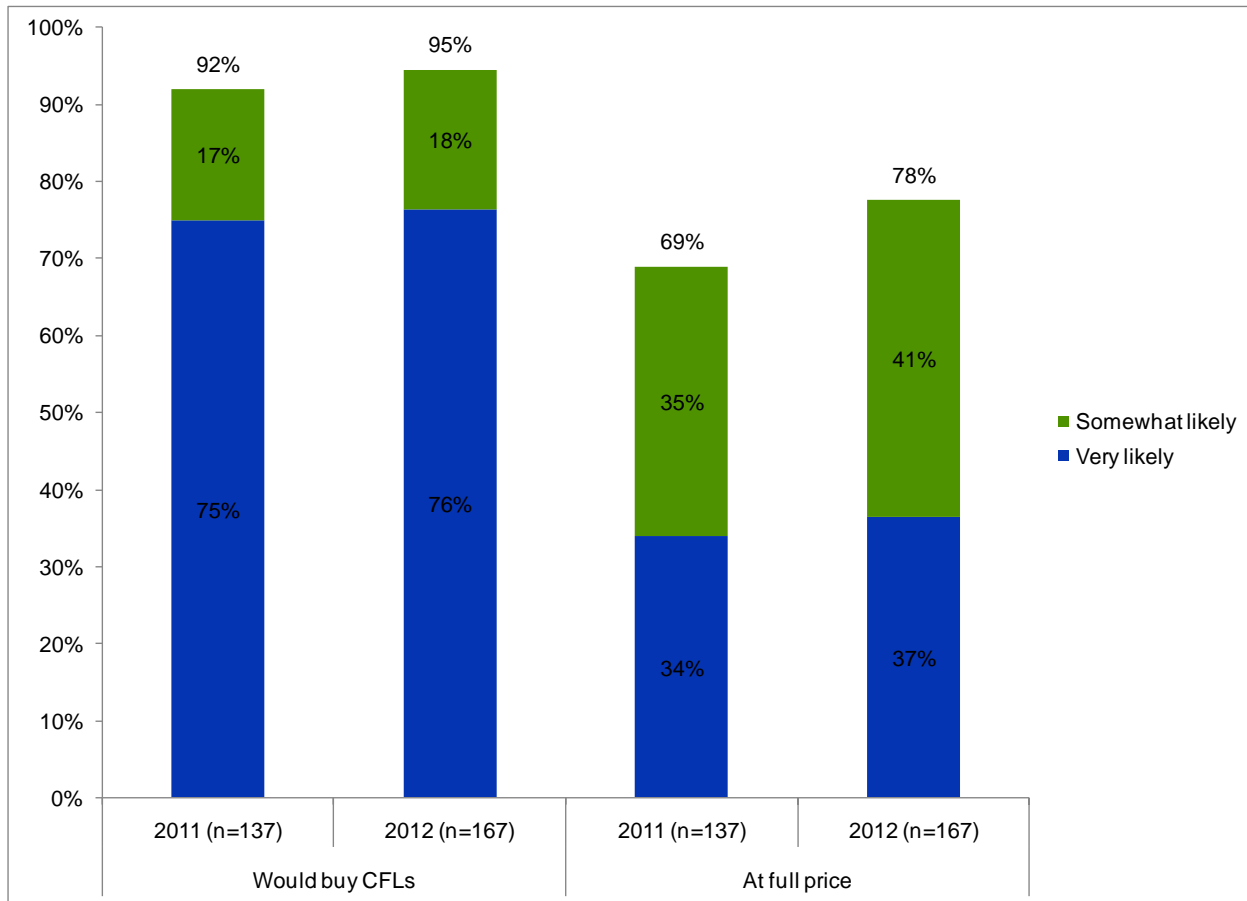
As the chart shows, there are two dramatic changes in 2012 from 2011 purchase levels. There are a small number of characteristics that correspond with those who claim they would chose to purchase these materials in the future.

- Use of audit tool:** Both groups (pipe wrap and door kit) saw significantly significant proportions claiming to have done action after using the tool.
 - Pipe wrap:** Those who said they took energy efficient actions after using the tool were more likely (49%) than those who did not (29%) to claim they would purchase pipe wrap if it were not in the kit.
 - Door kit:** Those who said they took energy efficient actions after using the tool were more likely (56%) than those who did not (16%) to claim they would purchase a door kit if it were not in the kit.

The survey also asked respondents who received CFLs if they would purchase CFLs in the future and if they would them full price of three or four dollars each. Almost all (95%) of respondents said they would

purchase CFLs in the future, and the majority of respondents (78%) said they were either somewhat likely or very likely to do so at full price (Figure 3-43).

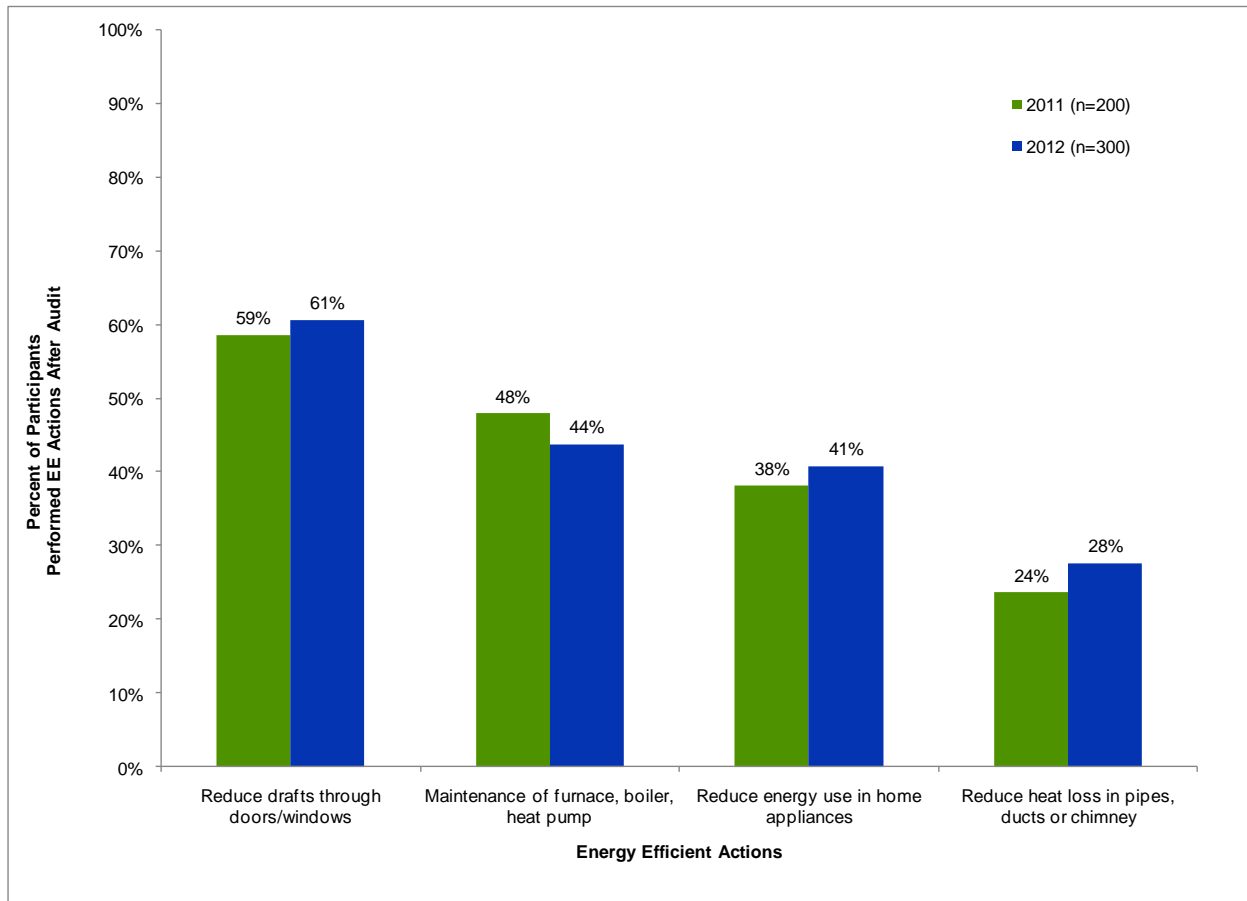
Figure 3-43. Likelihood of Purchasing CFLs in Future



3.4.11 Energy Efficiency Actions after Audit

The survey asked whether respondents had taken any actions related to energy efficiency after the audit. The survey first asked respondents whether they had taken any actions to reduce the drafts coming in through the doors or windows of their home, performed or hired a professional to do maintenance on their home’s heating system, reduced the energy used by their home appliances, or reduced heat loss in their pipes, ducts, or chimney. The majority (61%) of respondents said they had reduced drafts and about half (44%) said they had maintenance done on their heating system. Figure 3-44 shows the full range of responses.

Figure 3-44. Energy Efficiency Actions Performed after Audit



There were several statistically significant differences for each of these energy saving actions.

- *Reducing drafts through doors/windows:* Respondents who tended to take other energy saving actions tended to also take this action.
 - *Aerator installation:* Respondents who installed a faucet aerator from the kit were more likely (68%) than those who did not install one (40%) to also say they reduced drafts.
 - *Showerhead installation:* Respondents who installed a showerhead from the kit were more likely (67%) than those who didn't (47%) to say they reduced their home's drafts.
 - *Likely purchase CFLs:* Respondents who stated that they would likely buy CFLs without a kit were more likely (64%) than those who would not (42%) to also say they reduced drafts.
 - *Income:* Respondents with annual income less than \$50,000 were more likely (64%) than those who did not report their income (51%) to say that they had reduced drafts.



- *Heating system maintenance:*
- *Household size:* Respondents with two or fewer residents were more likely (48%) than those with three or more residents (34%) to say they had performed maintenance on their home’s heating system.
- *Education:* Respondents with some college education were less likely (28%) than those with up to a high school diploma (48%), those with a college degree (47%) or a graduate education (57%) to have performed maintenance on their home’s heating system.
- *ENERGY STAR awareness:* Respondents previously aware of ENERGY STAR were more likely (46%) than those who were not (32%) to have performed maintenance on their home’s heating system. *Reducing energy use of home appliances:*
 - *Income:* Respondents who reported earning less than \$50,000 and those earning \$50,000 or more were more likely (44% and 45% respectively) than those who did not report their income (26%) to say they reduced the energy use of their home appliances.
 - *Education:* Respondents with a college degree were more likely (49%) than those with some college education (33%) to say they reduced the energy use of their home appliances.
 - *Household size:* Larger households were more likely (50%) than those with 2 or fewer people (37%) to say they reduced the energy use of their home appliances.
- *Reduce heat loss in pipes, ducts, or chimneys:* Respondents who used the audit in order to get the free kit were *less* likely (18%) to take action to reduce heat loss *than those* who completed the audit for other reasons (31%).
 - *Concerns about energy consumption:* Respondents who were concerned with reducing their home’s energy use were more likely (29%) than those unconcerned (8%) to take this kind of action after the audit.

The survey asked any respondent who said they took any of the four types of energy saving actions listed above to specify which actions they took. This question was asked as an open-ended question, so there were a wide variety of responses. Table 3-11 shows the actions and the percent of all respondents who reported taking that action.



Table 3-11. Specific Energy Efficiency Actions Taken After Audit

Energy Efficiency Action	2012 (n=300)	2011 (n=200)
Replaced furnace or heat pump filter	26%	29%
Installed weather stripping on windows/doors	26%	26%
Regularly maintain/monitor equipment	11%	
Caulked windows/doors	21%	24%
Furnace/boiler tune-up by professional	14%	22%
Insulated hot water pipes	18%	15%
Replaced/Cleaned dryer vent	18%	12%
Added window shades or curtains	15%	12%
Set back thermostat temperature	21%	12%
Installed door sweeps	13%	11%
Added weather stripping to attic access doors	11%	9%
Lowered water heater temperature	15%	9%
Used clothesline to dry clothes	11%	8%
Installed new threshold	4%	7%
Put plastic over windows	18%	7%
New windows/doors	17%	7%
Added insulation (unspecified)	3%	5%
Installed water heater blanket	3%	4%
Insulated air ducts	4%	4%
Installed damper or chimney seal	4%	4%
Sealed air ducts	5%	3%
Installed crawl space vapor shield	3%	3%
Increased refrigerator/freezer temperature	8%	3%
Added occupancy or daylight sensors	4%	2%
Insulated attic access doors	5%	2%
Other	15%	19%
Don't know	3%	12%

Note: The total exceeds 100% because respondents were allowed to give multiple responses.

3.4.12 Satisfaction

The survey included an overall satisfaction question. Respondents rated their satisfaction with the program overall on a five-point scale, anchored at “very satisfied” and “very dissatisfied.” Almost all (88%) of respondents said they were very satisfied or somewhat satisfied with the program. DNV KEMA considers this level of satisfaction to be good (.). The survey of 2010 participants did not collect overall satisfaction.



Table 3-12. Satisfaction with the Online Audit Program as a Whole, 2011 - 2012

Response Category	2012 (n=300)	2011 (n=200)
Very satisfied	52%	75%
Somewhat satisfied	36%	16%
Neither	10%	5%
Somewhat dissatisfied	2%	2%
Very dissatisfied	<1%	2%
Don't know	<1%	0%
Total	100%	100%

The survey asked any respondent who gave an answer of less than “somewhat satisfied” why they were less than satisfied. Reasons for dissatisfaction included the following:

- Respondent did not receive kit;
- The audit was not beneficial;
- The online audit tool was difficult to use; and
- The respondent did not remember the audit.

3.4.13 Unanswered Questions after Using Tool

The survey asked respondents if they had any unanswered questions after using the tool. About ten percent of respondents had a question, approximately the same proportion as 2011. These questions fit into the following categories:

- Why did they do the audit;
- Why did follow up take so long;
- Would like more savings information;
- How to learn about eligibility for other audits or kits; and
- When to expect an on-site audit.

3.5 Onsite Weatherization Program

3.5.1 Summary

The following are some of the findings from the survey responses of the Onsite Weatherization participants:



3.5.2 Program Description

The Residential Audit and Weatherization (RAW) program was launched in March 2010. In 2011, the program began offering onsite audits. These audits consist of an hour-long visual inspection of the participant’s house, during which the auditor installs the measures provided in the same kit as online audit participants receive. CLEAResult manages the audits, and subcontracts them out to several other organizations. The auditor also educates the participants about rebates available for insulation and high efficiency windows. In 2012 this RAW program was merged with the former Residential HVAC Program to form the Home Performance Program (HPP). In 2012 the HPP also coordinated with the Residential Low Income program to conduct some audit and direct install activities in low income households.

3.5.3 Methodology

CLEAResult provided DNV KEMA with a sample population of 3,252 customers who received in-home audits from the Audit and Weatherization program. DNV KEMA contracted Discovery Research to conduct computer-aided telephone interviews (CATI) of program participants. The sample was randomized and released in segments to maximize response rates. Discovery Research called 1,420 participants in December 2012. They completed 250 interviews for a final response rate of 19 percent (Table 3-13). Discovery Research dialed phone numbers at least eight times over at least two weeks before being considered unreachable.

Table 3-13. Onsite Weatherization CATI Dispositions

Sample Description	Number	Percent
Starting Sample	3,252	
Never Called	1,832	
Sample Used	1,420	
Invalid Sample	98	
Sample Used	1,322	
Complete	250	19%
Contacted - Not Eligible	67	5%
Refused	520	39%
Contacted - Not Completed	62	5%
Dialed - Not Completed	423	32%

The CATI survey covered the following topics:

- Sources of information,
- Reasons for getting the audit,
- Usefulness of the information provided by the audit,
- Confirmation of direct install measures,
- Energy efficiency actions taken after audit,



- Program satisfaction,
- Attitudes towards energy efficiency, and
- Demographics.

3.5.4 Characterizing the Participants

The survey asked a series of demographic questions to help characterize the program participants. Highlights are summarized below:

- *Home ownership:* A majority (92%) of participants own their home.
- *Housing type:* A majority (70%) of homes were detached single family homes, a significant decrease from 2011 (92%). Other home types included attached single-family homes (duplexes or condos; 10%, up from 4% in 2011), mobile homes (12%, up from 3% in 2011), and buildings with two or more apartments (4%).
- *Home occupancy:* A few (3%) homes were seasonal homes.
- *Household size:* Twenty-four percent of homes had one resident, 39 percent had two residents, 11 percent had three residents, 11 percent had four residents, and fourteen percent had five or more residents. About one-half (52%) of the homes had at least one resident age 65 or older. Another one-quarter had at least one resident under the age of 18.¹⁹
- *Respondent education:* Over one-third (38%) of participants have a high school diploma, equivalent, or less, 23 percent have some college or trade school, 16 percent have four-year degree, and 21 percent have some grad school or grad school degree. This is a significant change from 2011 when 49 percent of respondents had a high school diploma or less and only 6 percent had some grad school or a grad school degree.
- *Respondent income:* Twenty-five percent of participants said they earned less than \$20,000 in 2010 before taxes. Thirty-one percent said they earned between \$20,000 and \$49,999. Nine percent said they earned six percent did not know or refused to answer the question.
- *Respondent gender:* Fifty-three percent of respondents were women. Forty-seven percent were men.

In addition to demographics questions, the survey also asked a few questions to assess participants' knowledge and attitudes about energy efficiency.

The 65 and older and 18 or younger categories were not mutually exclusive, so some homes may have both as residents.

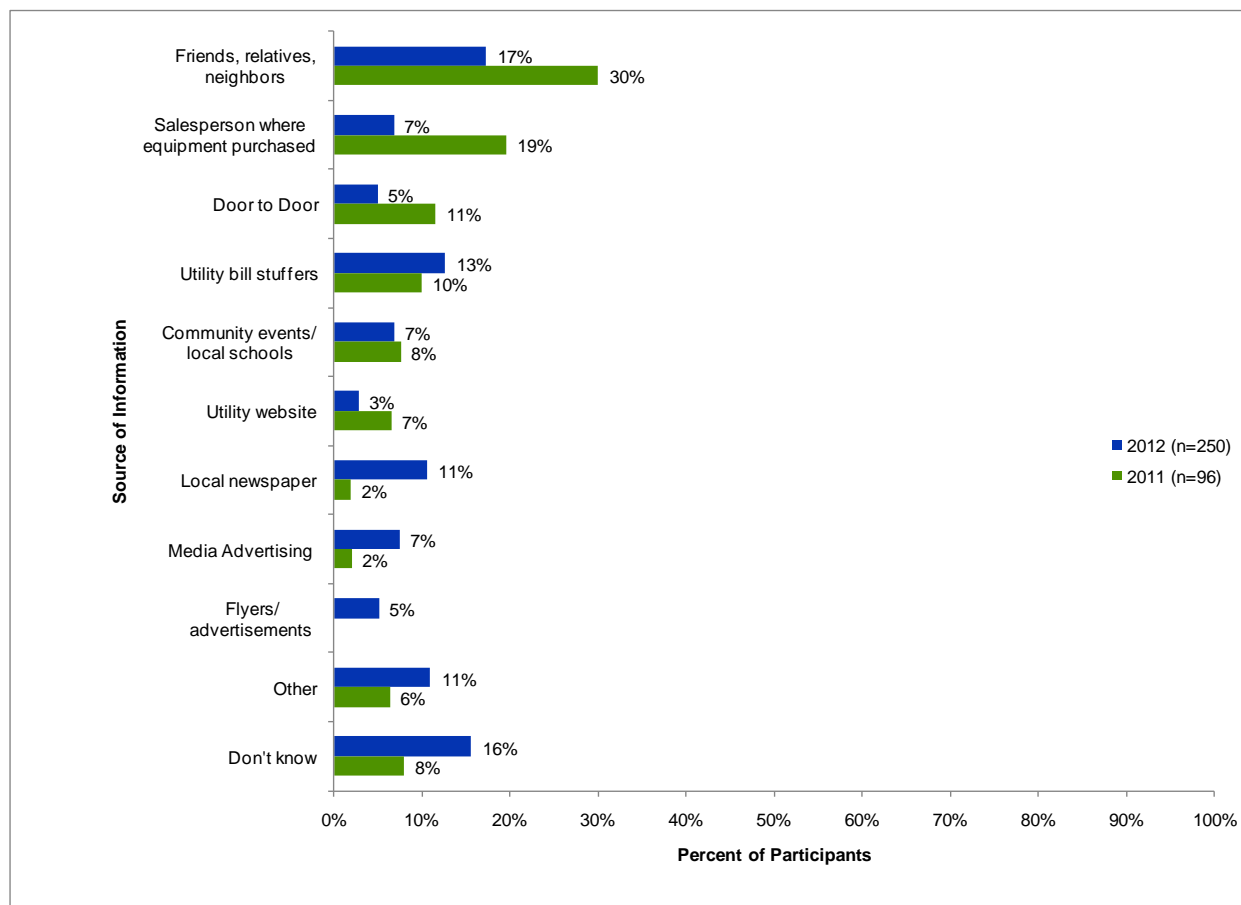


- *ENERGY STAR awareness:* Three-quarters (74%) claimed to have heard of ENERGY STAR prior to completing the survey, a significant increase from 2011 (60%)
- *Energy usage concerns:* Almost all were very concerned (47%) or somewhat concerned (38%) with reducing their home's energy use. Reasons for concern over reducing home energy use included the cost of energy or reducing the utility bill (85%), environmental concerns (22%), and concern about power availability or reliability (2%).

3.5.5 Sources of Information

The survey asked respondents how they first heard about the home energy audit. Figure 3-45 shows the first sources of program information that the respondents reported and the comparison to 2011 responses. Friends, relatives, neighbors (word-of-mouth) were still the most often-cited source (17%), but dropped significantly from 2011 (30%). Also showing decreases in 2012 are citations of salespeople (7% from 19% in 2011) and door to door (5% from 11% in 2011). There are also significant increases in other citations: local newspaper (2% to 11%), media advertising (2% to 7%).

Figure 3-45. First Source of Information about Home Energy Audit Program



Note: Totals exceed 100% because multiple responses were accepted. Other includes:

There were statistically significant differences²⁰ in cited information source depending on respondents' household size, education level, income, and respondent gender.

- Household size: Larger households with more than 2 people were more likely (13%) than smaller households (4%) to report community events or local schools as the source of information. Larger households were also more likely (11%) to cite flyers or other advertisements than smaller households (2%).
- Education: Respondents with some college, trade or technical school were more likely (18%) to report local newspapers as an information source than those with a high school degree, equivalent or less (5%). Respondents with graduate education or a graduate degree were more likely (9%) than those with a high school degree or less (<1%) to cite a state or national newspaper.

²⁰ For all results, differences were considered statistically significant if they exceeded the 90% confidence level.



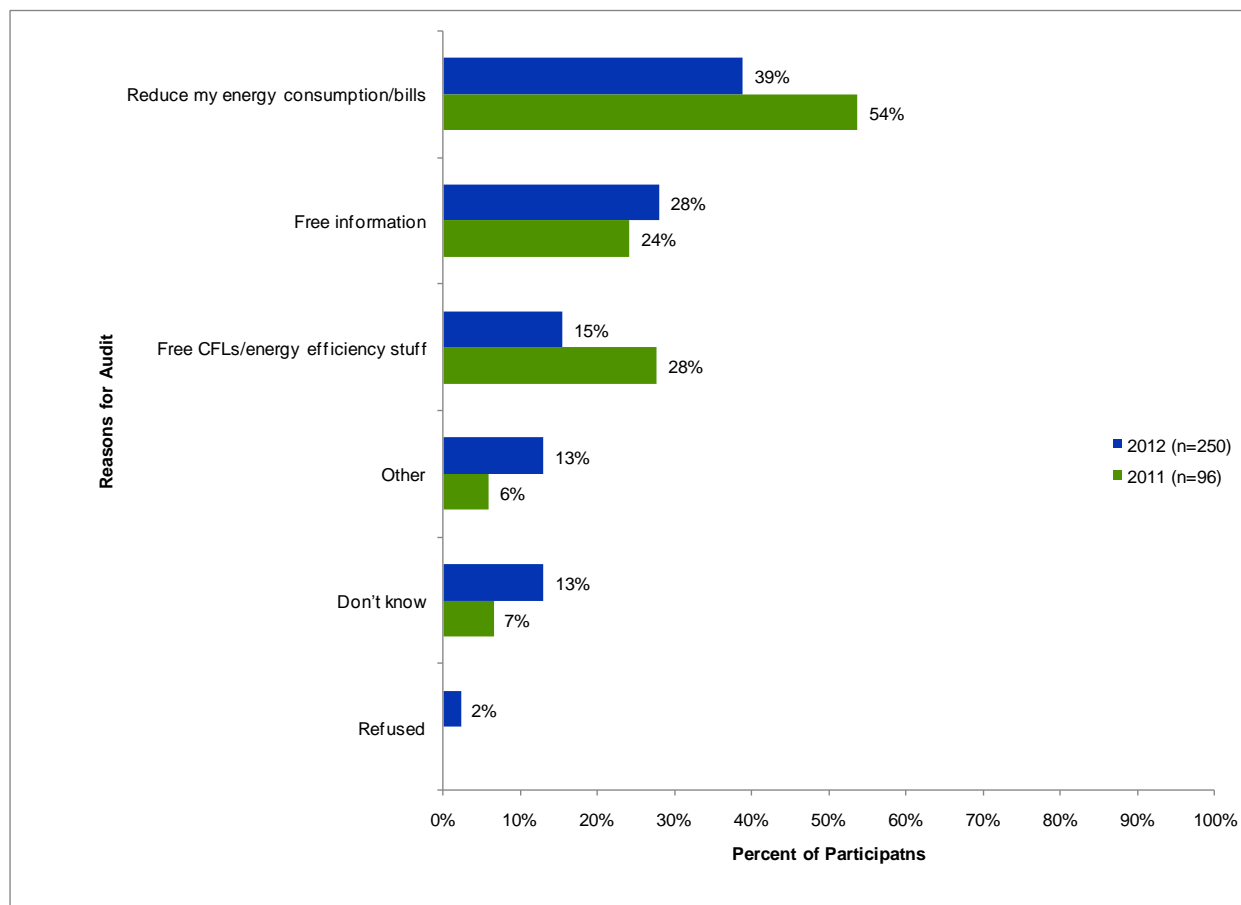
Respondents with a high school education or less (19%) and those with a college degree (23%) were more likely than those with a graduate education or degree (5%) to not know where they heard about home energy audits.

- *Income:* Respondents who reported earning \$50,000 or more per were more likely (22%) than those with less income (5%) to cite local newspapers as a source of information. Respondents with income under \$50,000 per year were more likely (9%) than those with higher income (0%) or those who did not report income (<1%) to cite door to door representatives.
- *Gender:* Women were more likely (11%) than men (2%) to cite salespeople as their source of awareness.

3.5.6 Reasons for Participation

The survey asked respondents why they decided to get an audit. Over one-third (39%) said they wanted to reduce their energy consumption or reduce their energy bills, a significant drop from 2011 (54%). Another one-fourth each said to get the free information (28%). One in six said they got the audit in order to get free measures (15%), a drop from 2011 (28%). Figure 3-46 shows the full range of responses.

Figure 3-46. Reasons for Audit



Note: The total exceeds 100% because respondents were allowed to give multiple responses.

There were statistically-significant differences in stated reasons for getting an audit depending on respondents' age, gender, education level, income, and the likelihood of purchasing CFLs at full price.

- Education level:** Respondents with a high school degree or less were more likely (24%) than those with a college degree (6%) to say they did the online audit to get the free measures. Respondents with a college degree were more likely (14%) than those with a high school degree or less (<1%) to get an audit because it was recommended by another. Finally, respondents with a high school degree or less were more likely (22%) than those with a graduate school education or degree (3%) to not know why they had the audit done.
- Income:** Respondents who did not report their income were less likely than those who reported annual income of less than \$50,000 (42%) as well as those reporting annual income of more than \$50,000 (56%) to have had an audit done to reduce energy consumption or bills. Respondents who reported earning less than \$50,000 per year were more likely (19%) than those who reported

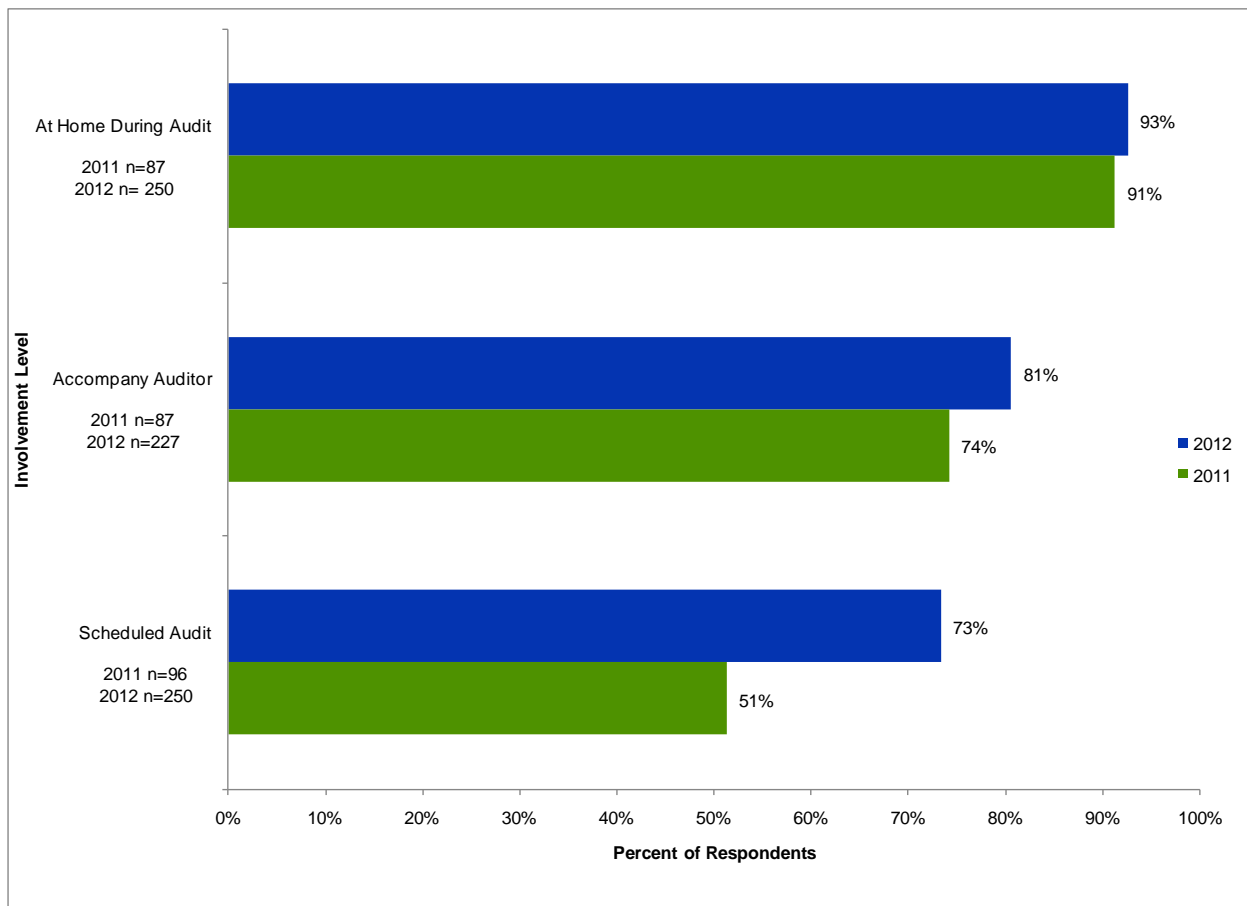


earning \$50,000 per year or more (5%) to say they got the audit to get the free measures.

Recommendations Provided by Auditor

The survey asked respondents a series of questions to determine how involved they were with the audit process. The vast majority of respondents (93%) were home for the audit and 75 percent accompanied the auditor. Another eighteen percent were at home but did not report accompanying the auditor. In 2012, surveys were able to talk with a higher proportion (73%) of people who scheduled the audits than in 2011(53%), Figure 3-47 .shows the full range of responses to questions about audit participation.

Figure 3-47. Involvement with Audit Process

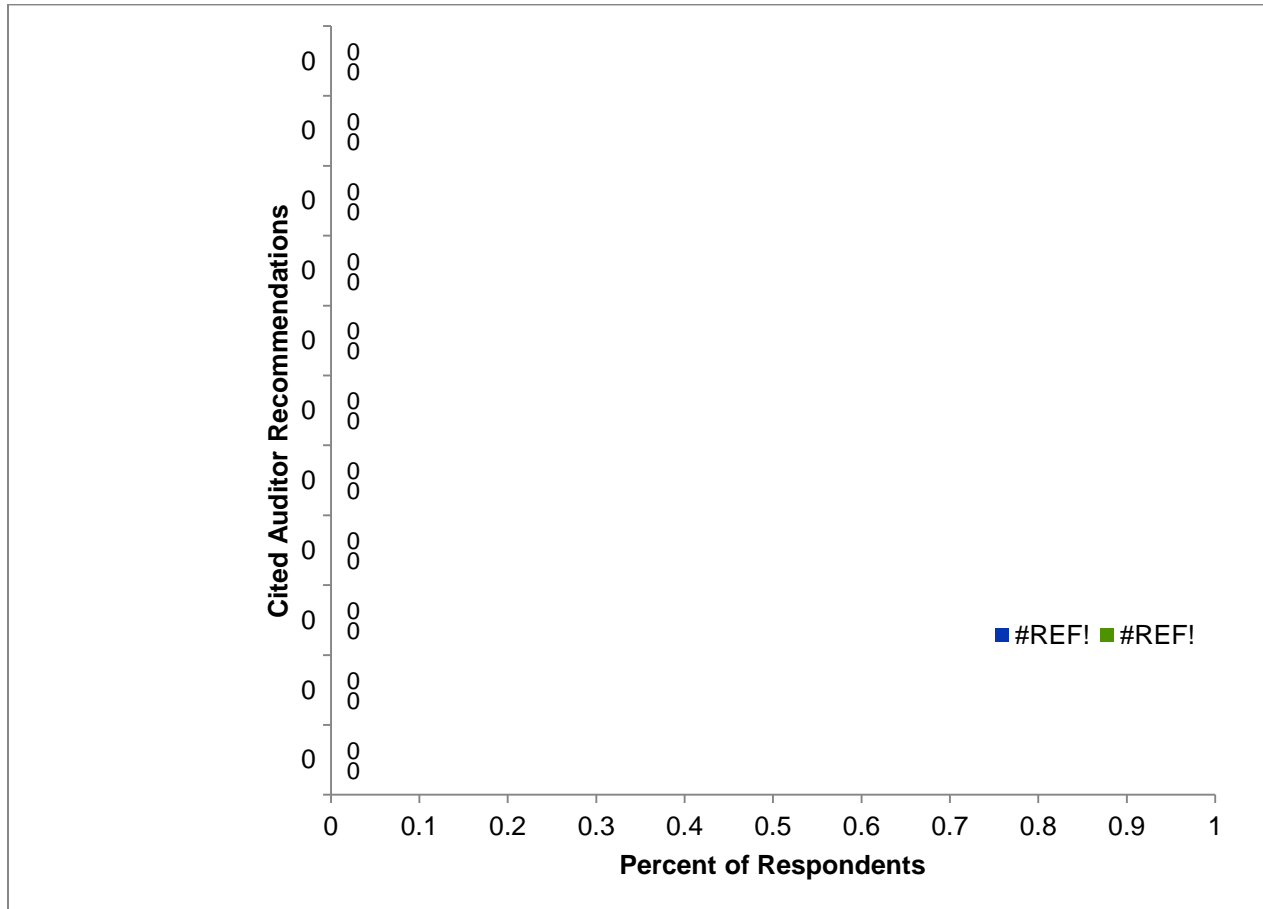


The survey asked respondents what type of recommendations they received from the audit. One quarter (28%) said they did not get any specific recommendations and 12 percent did not know if recommendations were given by the auditor. Of the two-thirds (60%) who did recall receiving recommendations, nearly one-third (31%) cited a wide array of miscellaneous recommendations such as new light bulbs, pipe insulation, water heater, programmable thermostat, low flow showerheads and facets, replacing refrigerators and new doors and insulation. The most common single answer provided



was new windows (19 %), followed by ceiling/attic insulation (15%), air sealing (15%) and wall insulation (14%). Figure 3-48 shows the full range of recommendations.

Figure 3-48. Recommendations Received from Audit



Note: The total exceeds 100% because respondents were allowed to give multiple responses.

There were statistically-significant differences in respondents’ reports of auditor recommendations depending on respondents’ education, gender, concern with reducing home energy use, perceived helpfulness of the audit, the likelihood of purchasing CFL bulbs in the future, and whether insulation was installed after the audit,

- *Gender:* Male respondents were more likely (27%) than female respondents (11%) to recall the auditor recommending new windows. Women were more likely (21%) than men (3%) to recall pipe insulation being recommended.
- *Education level:* Respondents with graduate school education or degree were more likely (29%) than college graduates (4%) to recall the auditor recommending ceiling or attic insulation. College graduates were more likely than (31%) than those with some college education (5%) to



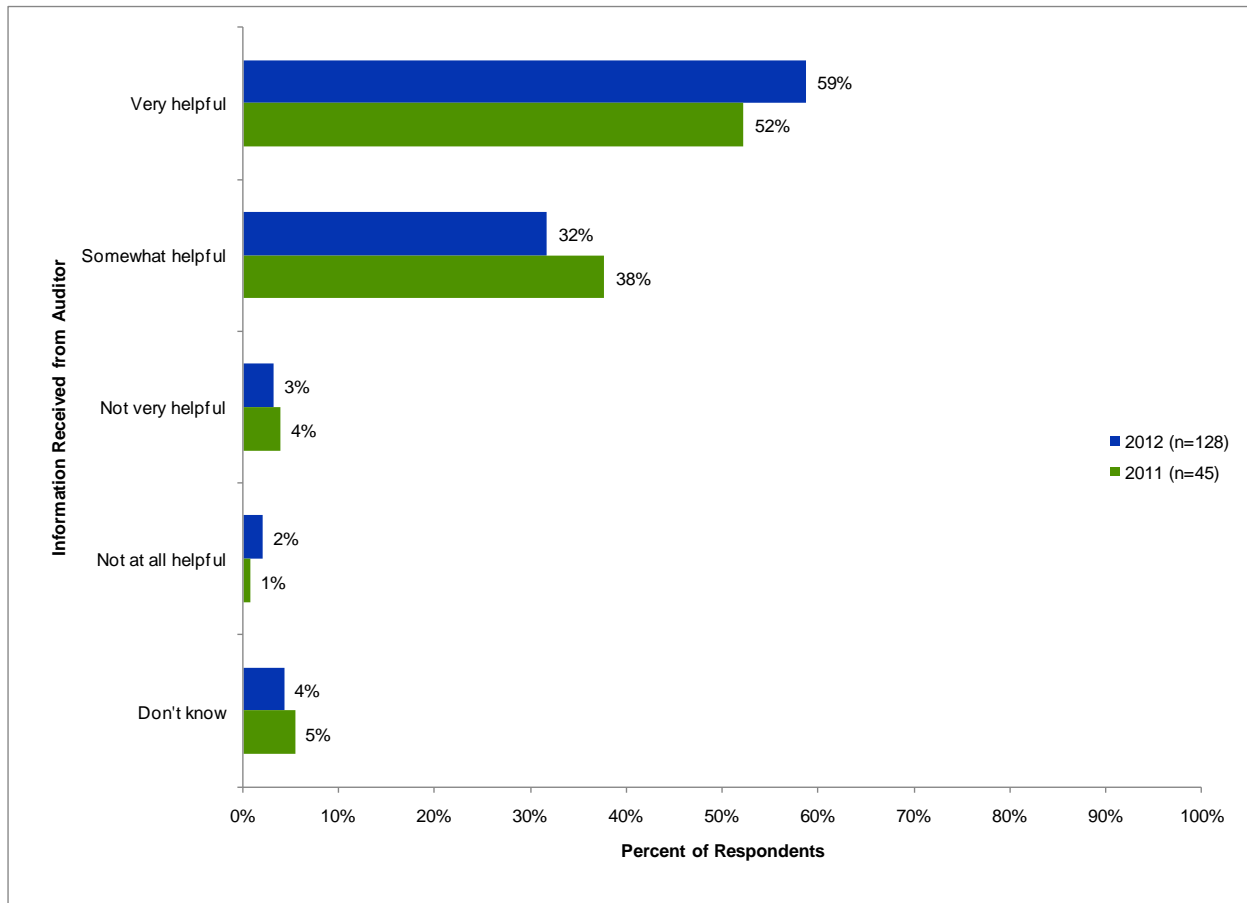
recall the auditor recommending wall insulation. Respondents with a high school education or less were more likely (18%) than those with some college (1%) to recall the auditor recommending basement wall insulation. Respondents with some college were more likely (19%) than those with a high school degree or less (2%) or those with a graduate school education (1%) to recall the auditor recommending pipe insulation; those with a college degree were more likely than all others (41%).

- *Income:* Respondents with reported annual income less than \$50,000 (14%) and those with reported annual income greater than \$50,000 (24%) were more likely than those who did not report their income (1%) to report recalling the auditor recommending efficient light bulbs. Respondents who reported annual income greater than \$50,000 are more likely (15%) were more likely than those who reported annual income less than \$50,000 (3%) or who did not report their income (1%).

3.5.7 Helpfulness of Information

DNV KEMA asked respondents to rate the helpfulness of the information provided by the auditor on a four-point scale anchored at one for “very helpful” and five for “not at all useful.” A majority (59%) of respondents said the information was very helpful (five on the five-point scale). One-third (32%) gave a rating of 2 on the four-point scale, “Somewhat helpful.”

Figure 3-49. Usefulness of Information Received from Auditor



The helpfulness of the information is associated with:

- **Education:** Respondents with graduate education or degree were more likely (82%) than those with a college degree (40%) to rate the tool ‘Very Helpful’.
- **Implemented audit suggestions:** Respondents who implemented the audit suggestions were more likely (72%) than those who did not (41%) to rate the audit tool as ‘Very Helpful’.
- **Audit satisfaction:** Unsurprisingly, respondents who were completely satisfied with the audit were more likely (94%) than those who were not completely satisfied (67%) to find the audit helpful (somewhat or very helpful); specifically more likely (70%) than those not completely satisfied (20%) to find the audit report ‘Very Helpful’.
- **Installation of faucet aerators:** Respondents where the auditor installed faucet aerators were more likely (60%) were more likely than those who did not (23%) to rate the audit tool as being ‘Very Helpful’. Respondents where the auditor did not install an aerator were more likely (31%) than



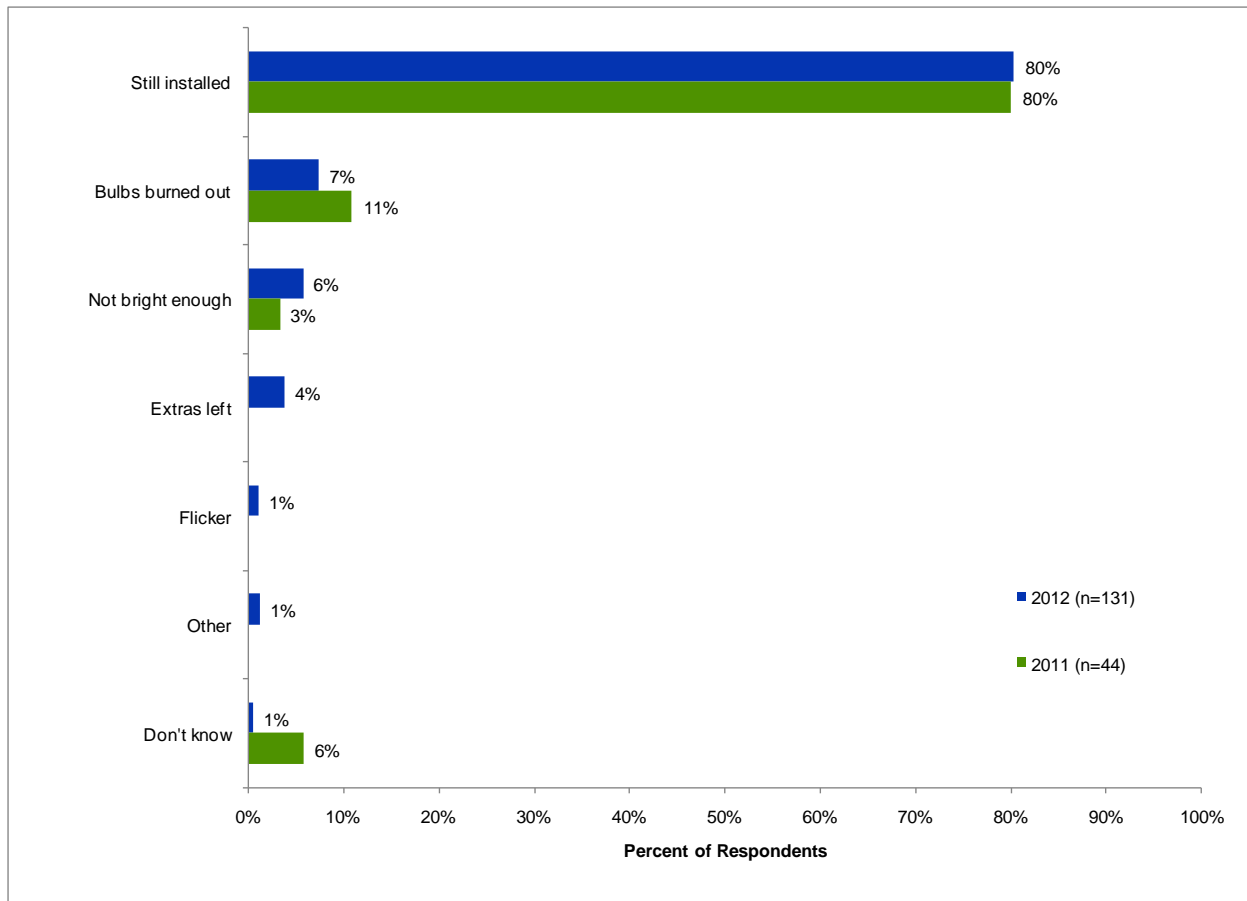
those who had the aerator installed (3%) to rate the tool as being ‘Nor Very Helpful’ (3 out of 4 on scale of 1= very helpful, 4= not at all helpful).

- *Energy use concern:* Respondents who reported not being concerned with energy use were more likely (70%) than those who reported being concerned (30%) to rate the tool “Somewhat helpful”.

3.5.8 Installation of CFLs

Auditors installed CFL bulbs in the homes of some respondents. DNV KEMA asked respondents if they remembered how many bulbs were installed. Almost all respondents (90%) who had CFL bulbs installed recalled having the same number installed as records indicated. DNV KEMA then asked if bulbs were still installed and why any were removed. Figure 3-50 shows the percent CFL bulbs still installed and if not, the reasons for removal. Eighty percent of respondents who reported having CFL bulbs installed still had them installed at the time of interview.

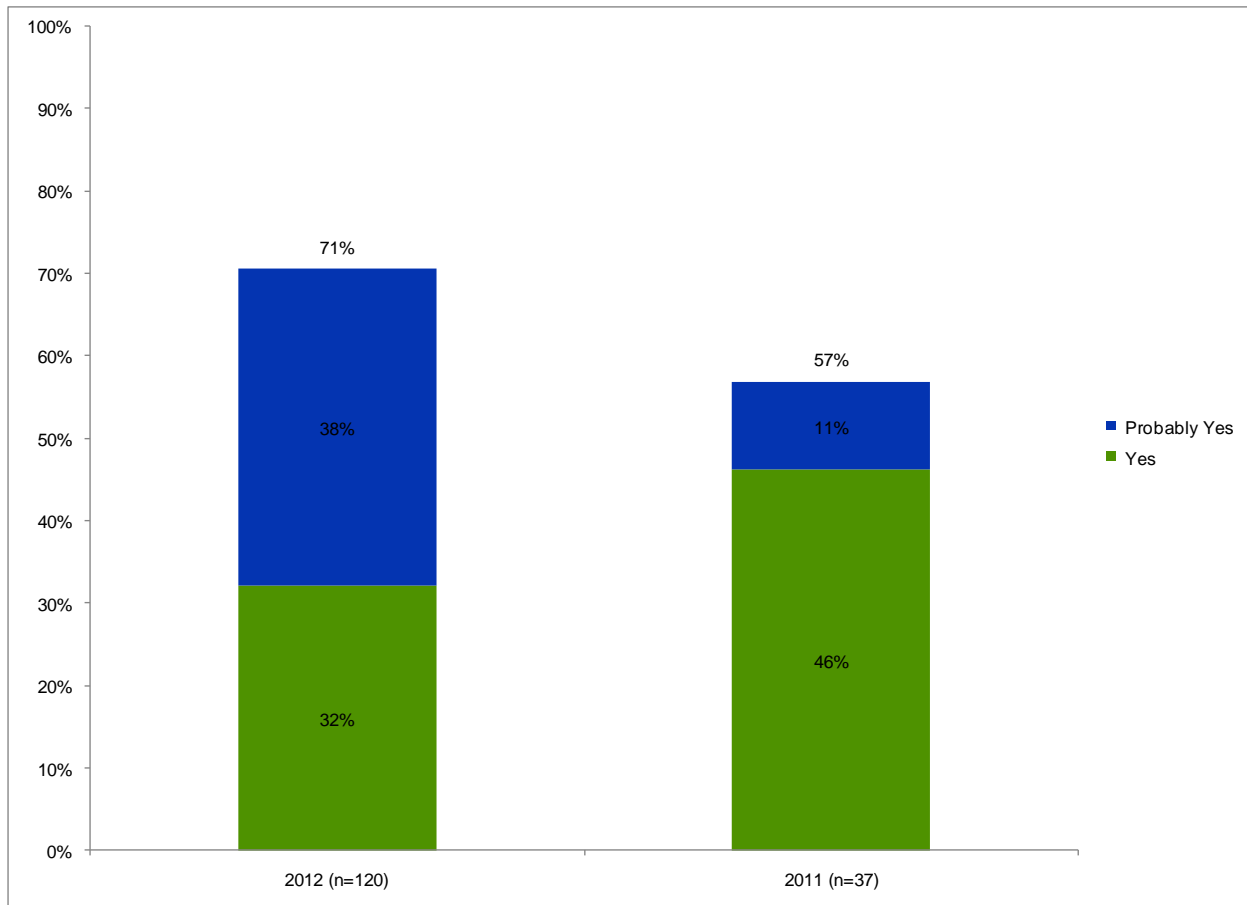
Figure 3-50. CFL Bulbs Still Installed and Reason For Removal





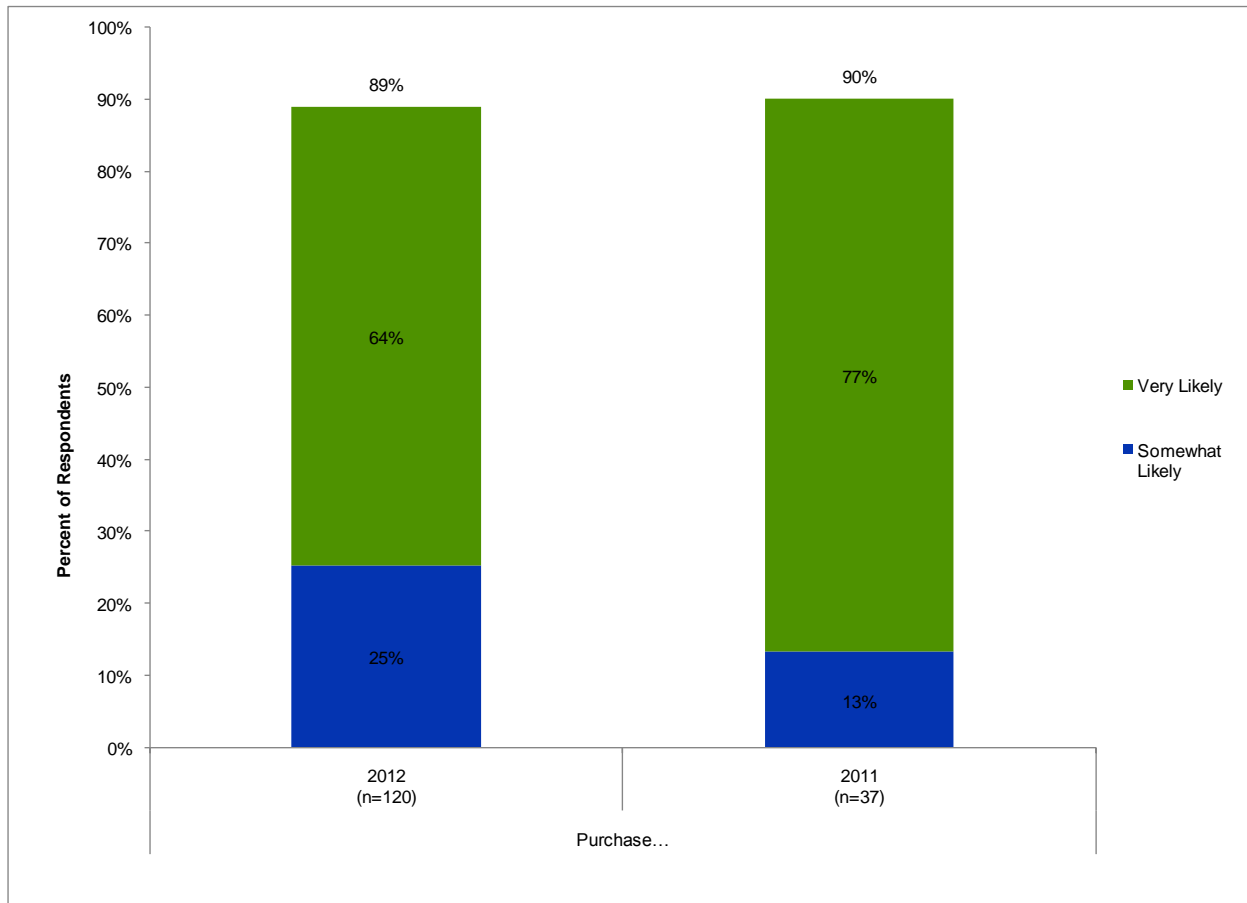
The survey asked respondents whether they would purchase CFLs at the store if the auditor had not installed them during the audit. Possible answers were yes, probably yes, probably not, and no. Nearly three-quarters (71%) of respondents said they would (32%) or probably would (38%) buy CFLs at the store. Fifteen percent said that they probably would not, 11 percent said that they would not and 3 percent did not know(Figure 3-51).

Figure 3-51. Likelihood of Purchasing CFLs at Store



The survey also asked respondents who received CFLs if they would purchase CFLs in the future and if they would pay full price of three or four dollars each. Almost all (89%) of respondents said they would purchase CFLs in the future, and the majority of respondents (64%) said they would do so at full price (Figure 3-52).

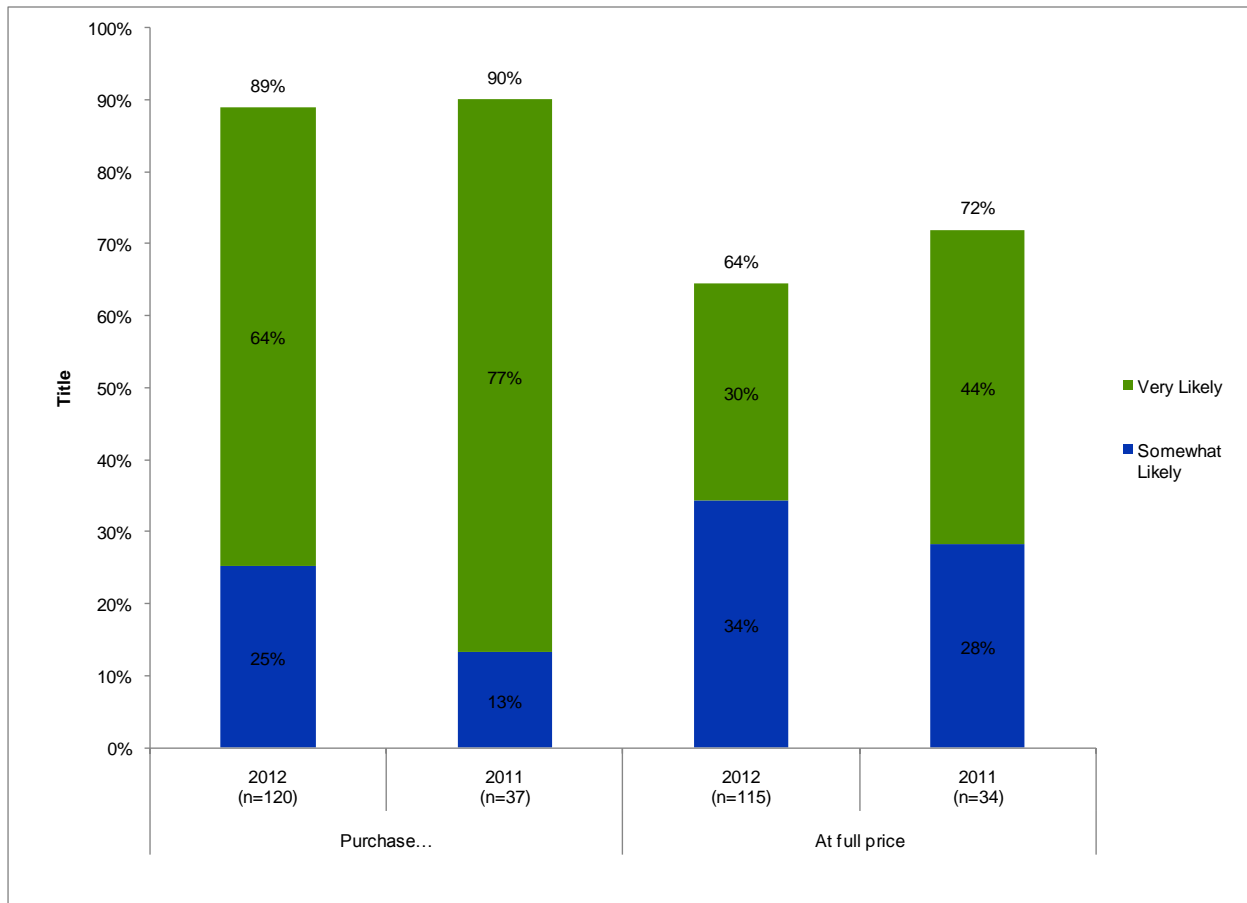
Figure 3-52. Likelihood of Purchasing CFLs Full Price



3.5.9 Installation of Other Measures

Respondents were asked about whether they would have bought any of the measures installed by auditors, if the auditors had not installed them. Measures installed include shower heads, faucet aerators, hot water pipe wrap, and programmable thermostats. CFLs were the measure most likely to be installed if the auditor had not installed them. Pipe wrap was the least likely measure (Figure 3-53).

Figure 3-53. EE Measures that Audit Participants Said They Would Have Purchased if the Onsite Weatherization Program Had Not Installed Them



3.5.10 Rebated Energy Efficient Actions

The survey confirmed rebate records for respondents on a number of rebated elements. These elements include energy efficient window installation, attic insulation, above-ground wall insulation, band joist insulation, basement wall insulation, crawl space insulation, and floor insulation. Only a small number of individuals chose to install energy efficient equipment and apply for program rebates, shown in Table 3-14.

Table 3-14. Rebated Measures Installed After Audit

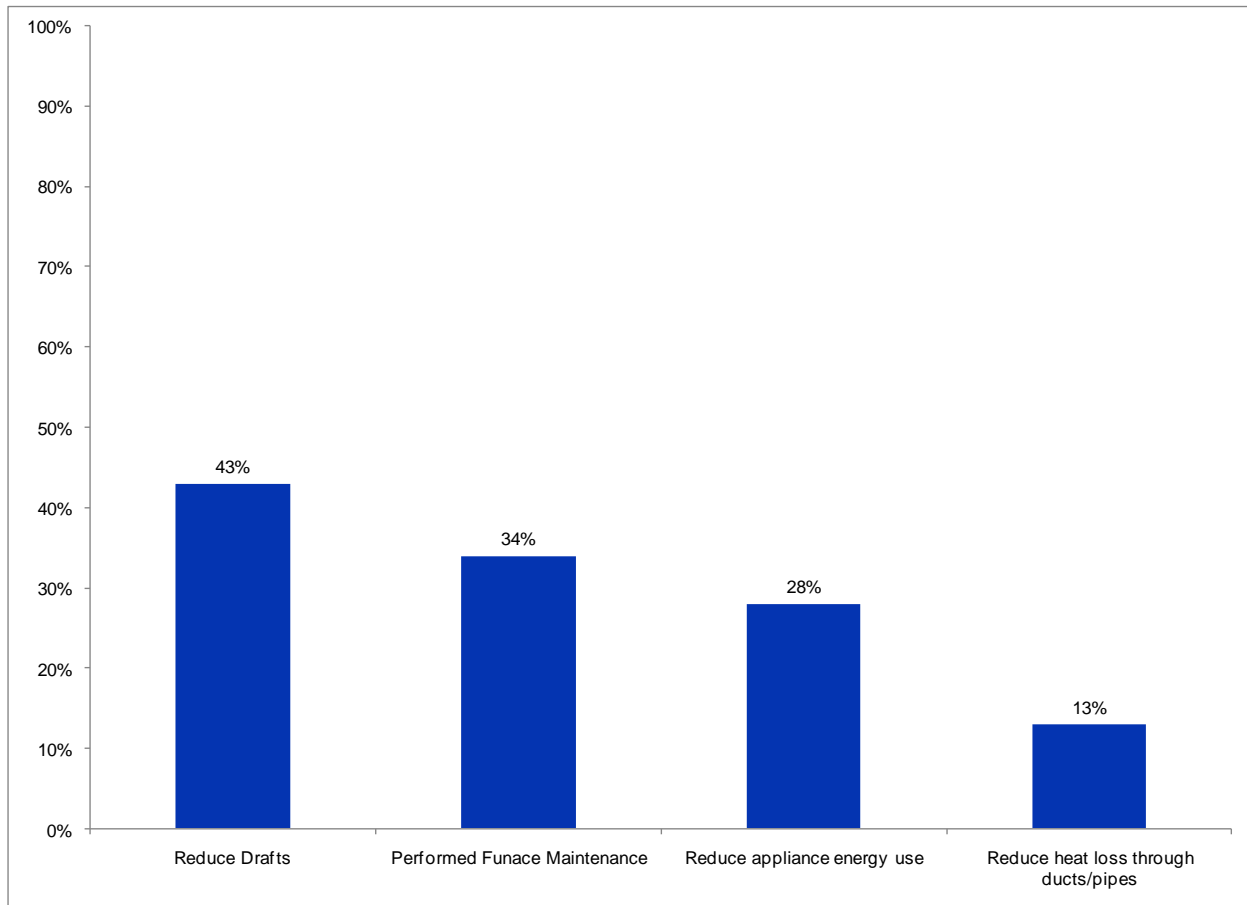
Energy Efficiency Action	2012 (n=300)	2011 (n=96)
Energy Efficient Windows	2	0
Attic or Ceiling Insulation	7	2
Wall Insulation	1	1
Band Joist Insulation	4	2
Basement Wall Insulation	2	0
Crawlspace Insulation	0	1
Floor Insulation	0	1

Note: Unweighted number of respondent households of 96 contacted in 2011, 300 in 2012.

3.5.11 Energy Efficiency Actions after Audit

The survey asked whether respondents had taken any actions related to energy efficiency after the audit. The survey first asked respondents whether they had taken any actions to reduce the drafts coming into their home and if they had performed or hired a professional to do maintenance on their home heating system. Less than half (43%) of respondents said they had reduced drafts at most, and only 13 percent stating they took actions to reduce heat loss through air ducts or pipes.

Figure 3-54. Percent of Respondents Taking Action after Audit



There were a number statistically significant differences for each of these energy saving actions:

- *Reduce drafts through doors/windows:* Respondents with some college education (53%) a high school diploma or less (49%) were more likely than those with some graduate school or an advanced degree (25%) to take actions to reduce drafts. Respondents who reported income were also more likely than those who did not (25%) to take actions to reduce drafts. Finally, men were more likely (54%) than women (34%) to take actions to reduce drafts.
- *Furnace/boiler/heat pump:* Respondents with some college (45%) or with graduate education (49%) were more likely than those with a college degree (14%) to have performed maintenance on their furnace/boiler/heat pump following the audit.
- *Appliance energy use:* Respondents who reported annual income less than \$50,000 were more likely than those with greater income (18%) or those who did not report their income (18%) to report taking action to reduce appliance energy use.



The survey asked any respondent who said they took any of the four types of energy saving actions listed above to specify which actions they took. This question was asked as an open-ended question, so there were a wide variety of responses. Table 3-15 shows the actions and the percent of all respondents who reported taking that action.

Table 3-15. Specific Energy Efficiency Actions Performed after Audit

Energy Efficiency Action	2012 (n=300)	2011 (n=200)
Replaced furnace or heat pump filter	26%	29%
Installed weather stripping on windows/doors	26%	26%
Regularly maintain/monitor equipment	11%	
Caulked windows/doors	21%	24%
Furnace/boiler tune-up by professional	14%	22%
Insulated hot water pipes	18%	15%
Replaced/Cleaned dryer vent	18%	12%
Added window shades or curtains	15%	12%
Set back thermostat temperature	21%	12%
Installed door sweeps	13%	11%
Added weather stripping to attic access doors	11%	9%
Lowered water heater temperature	15%	9%
Used clothesline to dry clothes	11%	8%
Installed new threshold	4%	7%
Put plastic over windows	18%	7%
New windows/doors	17%	7%
Added insulation (unspecified)	3%	5%
Installed water heater blanket	3%	4%
Insulated air ducts	4%	4%
Installed damper or chimney seal	4%	4%
Sealed air ducts	5%	3%
Installed crawl space vapor shield	3%	3%
Increased refrigerator/freezer temperature	8%	3%
Added occupancy or daylight sensors	4%	2%
Insulated attic access doors	5%	2%
Other	15%	19%
Don't know	3%	12%

Note: The total exceeds 100% because respondents were allowed to give multiple responses.

3.5.12 Satisfaction

The survey asked a number of questions regarding respondent’s satisfaction with the audit and the program. Respondents rated their satisfaction with the program overall on a five-point scale, anchored at “very satisfied” and “very dissatisfied.” Satisfaction levels are shown below in Table 3-16.



Table 3-16. Participant Satisfaction Levels with Onsite Weatherization Program

Satisfaction with . . .	2012	2011
Audit scheduling (2012 n=188) (2011 n=52)	98%	92%
Auditor (2012 n=227) (2011 n=87)	91%	94%
Program overall (2012 n=250) (2011 n=96)	83%	96%

The survey asked respondents to rate these three specific items, shown above. Audit scheduling showed an increase from 92 percent to 98 percent, shown in Table 3-17, which shows that the satisfaction shifted closer to ‘5 – Very Satisfied’ without any splitting of satisfaction opinions. The scheduling process was nearly universally seen as being very satisfactory. The few responses that were less than satisfied were asked why, with respondents stating that they either had difficulty rescheduling the audit, that the schedulers were unprofessional, or that the respondent did not know why they found scheduling less than satisfactory.

Table 3-17. Audit Scheduling Satisfaction

Audit Scheduling	2012 (n=188)	2011 (n=52)
Very satisfied	88%	72%
Somewhat satisfied	10%	20%
Neither	1%	6%
Somewhat dissatisfied	<1%	0%
Very dissatisfied	<1%	3%
DK	<1%	0%
Total	100 %	100 %

Satisfaction of auditors was also asked; satisfaction was again very high. The percentage of respondents largely shifted from those rating ‘Somewhat Satisfied’ to ‘Very Satisfied’ from 2011 to 2012, shown in Table 3-18. The few rating the auditor as less than satisfactory stated that they auditor was unprofessional or that the auditor didn’t really do anything.



Table 3-18. Satisfaction with Auditor

Auditor	2012 (n=227)	2011 (n87)
Very satisfied	75%	63%
Somewhat satisfied	16%	31%
Neither	2%	0%
Somewhat dissatisfied	4%	<2%
Very dissatisfied	<1%	<2%
DK	3%	3%
Total	100%	100%

Finally, the survey included an overall satisfaction question. Eighty three percent of respondents said they were very satisfied or somewhat satisfied with the program (Table 3-19). This stands in contrast to the other categories.

Table 3-19. Overall Program Satisfaction

Program Overall	2012 (n=250)	2011 (n=96)
Very satisfied	61%	57%
Somewhat satisfied	22%	38%
Neither	4%	2%
Somewhat dissatisfied	6%	0%
Very dissatisfied	3%	0%
DK	5%	3%
Total	100%	100%

The survey asked any respondent who gave an answer of less than “somewhat satisfied” why they were less than satisfied. Reasons for dissatisfaction included the inspection not being thorough (40% of those not satisfied), the equipment received was not sufficient or it failed (29%) , audit and installation work was not done properly (9%), nothing was done (7%), respondent not receiving the promised equipment (e.g., CFLs, 6%) or the respondent not receiving enough information or help on weatherization (misc <8%).



3.6 Residential Low Income (Income Qualified) Program

3.6.1 Program Description

The Residential Low Income (RLI) program, also referred to as, the Income Qualified Energy Optimization Program is implemented through a pre-existing ongoing assistance program that aids income-qualified clients in obtaining weatherization products, services and energy-efficient appliances. Measures vary by municipality, however the entire list of energy-efficient measures include:

- *Electric- Whole Weatherization Program Measures:* CFLs, ENERGY STAR Refrigerators and Furnace Blower Fan ECM motors.
- *Natural Gas - Whole Weatherization Program Measures:* Air sealing, insulation (attic, wall, ceiling, band joist, and mobile home belly), programmable thermostats, 92% or better AFUE furnaces and boilers, and natural gas furnace O&M tune-ups.
- *Pre-Weatherization Measures /Energy Efficiency for Non-weatherization Measures:* CFLs, faucet aerators (bathroom and kitchen), high-efficiency showerheads and high-efficiency handheld showerheads, R-3 pipe insulation, and natural gas furnace O&M tune-ups.

The MCAAA/MECA portion of the program has been offering income qualified services since November 2009. The program is delivered through Community Action Agencies (CAA) which is overseen by MCAAA and the program's implementation contractor is CLEAResult. The RLI Program is the fourth largest program in the MCAAA portfolio. Key program changes for 2012 include the addition of pre or non-weatherization measures and CAAs can submit as many program qualified measures as the program can afford.

3.6.2 Participant Telephone Survey Results

CLEAResult provided DNV KEMA with a sample participants population of 1,048. DNV KEMA contracted with Research America (RA) to conduct computer-aided telephone interviews (CATI) with program participants. RA completed interviews with 250 program participants in November and December 2012. The final response rate was 38 percent. About 10 percent of the sample was ineligible, mostly due to disconnected phone numbers. RA dialed numbers at least eight times over at least two weeks before considering the number unreachable. Table 3-20 summarizes the call dispositions.



Table 3-20. Low Income CATI Call Dispositions

Sample Description	Number	Percent
Starting Sample	1,048	
Never Called	184	
Sample Used	864	
Known Not Eligible	132	
Estimated additional Not Eligible	80	
Sample Valid	652	
Complete	250	38%
Refused	148	23%
Not Contacted - Eligible	7	1%
Not Contacted - Est. Eligible	247	38%

The CATI survey included questions on the following topics:

- Verification of measure installation;
- Sources of information about the RLI Program;
- Satisfaction with the installed equipment;
- Satisfaction with the installation contractors;
- Satisfaction with the program overall; and
- Participant demographics.

DNV KEMA stratified the population based on the type of equipment participants received. The reported results are weighted by the number of participants in the population strata divided by the number of completed surveys.

3.6.3 Characterizing the Participants

The survey asked a series of demographic questions to characterize the Income Qualified program participants. Highlights are summarized below:

- *Home ownership:* Most (81%) participants own their homes, homeownership is slightly less compared to 2011 where (87%) of respondents were homeowners.
- *House characteristics:* Mobile homes were the most common home type among respondents at (47%) as compared to (20%) in 2011. The second most common home type is detached single-family detached at (43%) whereas in 2011 (63%) of participants live in detached, single-family homes. Buildings with five or more apartments account for the third most common home type at (5%) while apartment’s buildings with various sizes in total account for (8%). The remaining (2%) stated either other, don’t know or refused.



- *Home occupancy:* Slightly fewer respondents in 2012 (95%) live in their home year-around (12 months) as compared to 2011 for which virtually all (99+%) participants live in their homes 12 months per year. The remainder (3%) lived in their homes less than 12 months a year. The number of refusals had a slight impact on results (3%) didn't know or more often refused. Had there been fewer refusals we may have seen results from 2011 to 2012 to be more in line with one another. The remaining (3%) lived in their homes less than 12 months a year.
- *Household size:* The participants covered a range of household sizes: 1 resident (30%); 2 residents (32%); 3 residents (15%); four residents (11%); five or more residents (9%). These results are nearly identical to the responses collected in 2011.
- *Respondent age:* Respondent age was fairly evenly distributed: 18-46 years old (31%); 47 to 64 years old (33%); 65 or older (30%) and unwilling to say (7%).
- *Respondent education:* Respondent education level was weighted toward the low end: high school diploma or less (55%); some college or trade school (19%); four-year college degree (6%); some graduate school or an advanced degree (4%); did not answer (16%).
- *Respondent income:* Respondent 2010 pre-tax income levels varied as follows: less than \$5,000 per year (8.5%); \$5,000—\$9,999 per year (10%); \$10,000—\$14,999 (14%), \$15,000—\$19,999 (10%), \$20,000—\$29,999 (8%), \$30,000—\$49,999 (8%), \$50,000 or more (2.5%); unsure (10%) unwilling to answer (28%).

3.6.4 Sources of Information

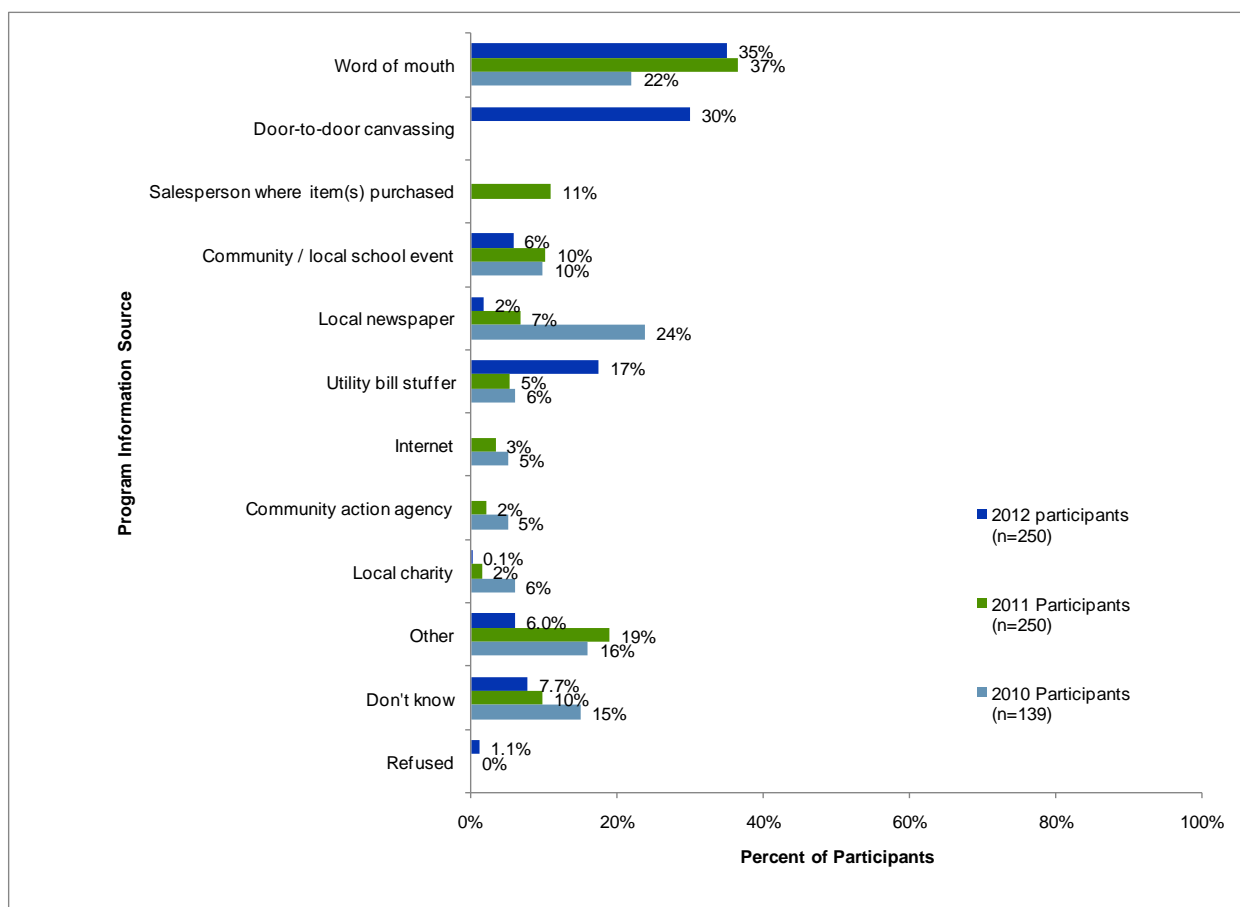
The survey asked respondents where they first heard about the program. Word of mouth (from family, friends, relatives or landlord) was the dominant mode in 2011 and again in 2012, with (35%) of interviewees citing it as their primary source of information. The second most-cited source was door-to-door canvassing (30%) while the third was utility bill inserts (17%). A variety of information sources were coupled with “other” including: non-profit organization, utility website, and state or national newspaper.

The most significant difference in 2011 to 2012 was the absence of “salesperson where the item was purchased” and in 2011 “door-to-door canvassing” was not cited. According to the program manager at CLEAResult, door-to-door canvassing and mail campaigns were new approaches applied in 2012. Outreach for these two modes was operated in conjunction with the Residential Home Performance programs. Third-party contractors performed this campaign effort and focused in the larger utility areas. And given the high number of mobile home occupants it's likely they visited mobile home parks to identify qualified clients.



Overall, there are notable differences in source of awareness from 2010 through 2012 these differences, as previously described in the 2011 report, are attributed to the dollars funded by the American Recovery and Reinvestment Act (ARRA). ARRA funding contributed significantly to this program and provided extensive advertising to ensure the dollars were reinvested back into the community. Now that ARRA finding has dissipated, the program is trying alternative delivery methods such as the door-to-door canvassing.

Figure 3-55. Sources of Information about Program



The frequency with which program participants cited these first sources of program information did vary, to a statistically-significant degree based on their age, income, and homeownership.

- Word-of-mouth:* Participants in the middle age group (47 to 65 old) were more likely to have heard about the program through word-of-mouth (43% of respondents) than those (<47 age) in the younger age group at (34%) or seniors (26%). The trend that continued from 2011 was seniors are less often informed by word-of-mouth then those who are younger (<65 years of age).



- *Door-to-door canvassing:* Participants with a high school degree or less heard about the program more through door-to-door canvassing often (34%) those with more than a high school degree at (18%). Canvassing more often reached homeowners (33%) then renters at (16%).
- *Utility bill inserts:* Participants in the lower income group (<\$15K) were more likely (22%) to say they heard about the program from utility bill inserts than those in the (>\$15K) higher income group at (14%). Bill inserts was a more effective way to reach renters (23%) as compared to homeowners (15%). (Homeowners most often heard about the program from word-of-mouth and door-to-door canvassing).

3.6.5 Satisfaction

This section summarizes the survey responses of the RLI program participants concerning satisfaction with various aspects of the program as well as with the program as a whole.

3.6.5.1 Satisfaction with Installed Equipment

Survey participants were asked to rate their satisfaction with the program installed equipment. Respondents answered using a five-point scale anchored at five for “very satisfied” and one for “not at all satisfied.” In general, 2012 participants were less satisfied than their 2011 counterparts. In 2011, at least 90 percent of participants were satisfied with every type of measure installed as compared to 2012 where only 3 of the 13 measures had satisfaction ratings of 90 percent or greater.

Low satisfaction ratings were more often cited for the programs new pre/non-weatherization measures: CFLs, furnace tune-ups, pipe-wrap insulation, and faucet aerators. More than 50 explanations described why participants were less than satisfied with these various energy-efficiency measures. Several of the CAA program implementers are already aware of the low satisfaction for these measures. During our interviews with CAAs, at least a third of them stated they are no longer installing aerators because of the number of complaints and pre/non weatherization measures are avoided by some agencies all together due to program implementation constraints.

In general, elderly respondents who are (65+) provided lower satisfaction ratings more often (rated a 3 or lower) than respondents who were younger (<65) as indicated in Table 3-21. Measures with Low Satisfaction and Age of Respondents.



Table 3-21. Measures with Low Satisfaction and Age of Respondents

Measures with Low Satisfaction Ratings	Age of Respondents with Satisfaction Rating of Equal to or Less than 3		
	<47	47-65	65+
Pipe Wrap	-	11.5%	-
Tune-up	50.0%	16.6%	-
CFL	14.3%	16.3%	21.6%
Faucet Aerator	8.9%	11.8%	16%
Showerhead	12.4%	20.5%	33.2%
Refrigerator	-	-	27.4%

Figure 3-56 compares the percentage of satisfied respondents (4 or 5 on the five-point scale) by measure type from the previous years 2011 and 2010. The figure contains the full range of equipment measures installed in 2012. As previously described, additional measures were added to the program (pipe wrap, aerators and low flow showerheads), while, band joist and belly insulation had not been a paid measure in previous years. Satisfaction ratings for 2012 appear to be lower than previous years.

The full range of satisfaction is presented in Table 3-22. Only one measure had a very high unsatisfied rating which was furnace tune-ups at 17 percent. Issues with the tune-ups included: the perception that it did not make a difference, issues with the distribution of heat throughout the home, the furnace not working, the belief that no tune-up was performed, and at least one respondent needing to return to their home to make adjustments (at their own expense). Respondents with furnace tune-ups were most often in the Michigan Gas Utilities Corporation service territory.

One other measure that had a low satisfaction rating among the 2012 program participants was the programmable thermostats with 18 percent of respondents less than satisfied. This is often associated with programming issues and senior citizens. Our interviews with the CAA representatives revealed that some are shying away from future installations due to the repeated problems of clients not understanding how to adjust their thermostat. Some operational issues cited by survey respondents included:

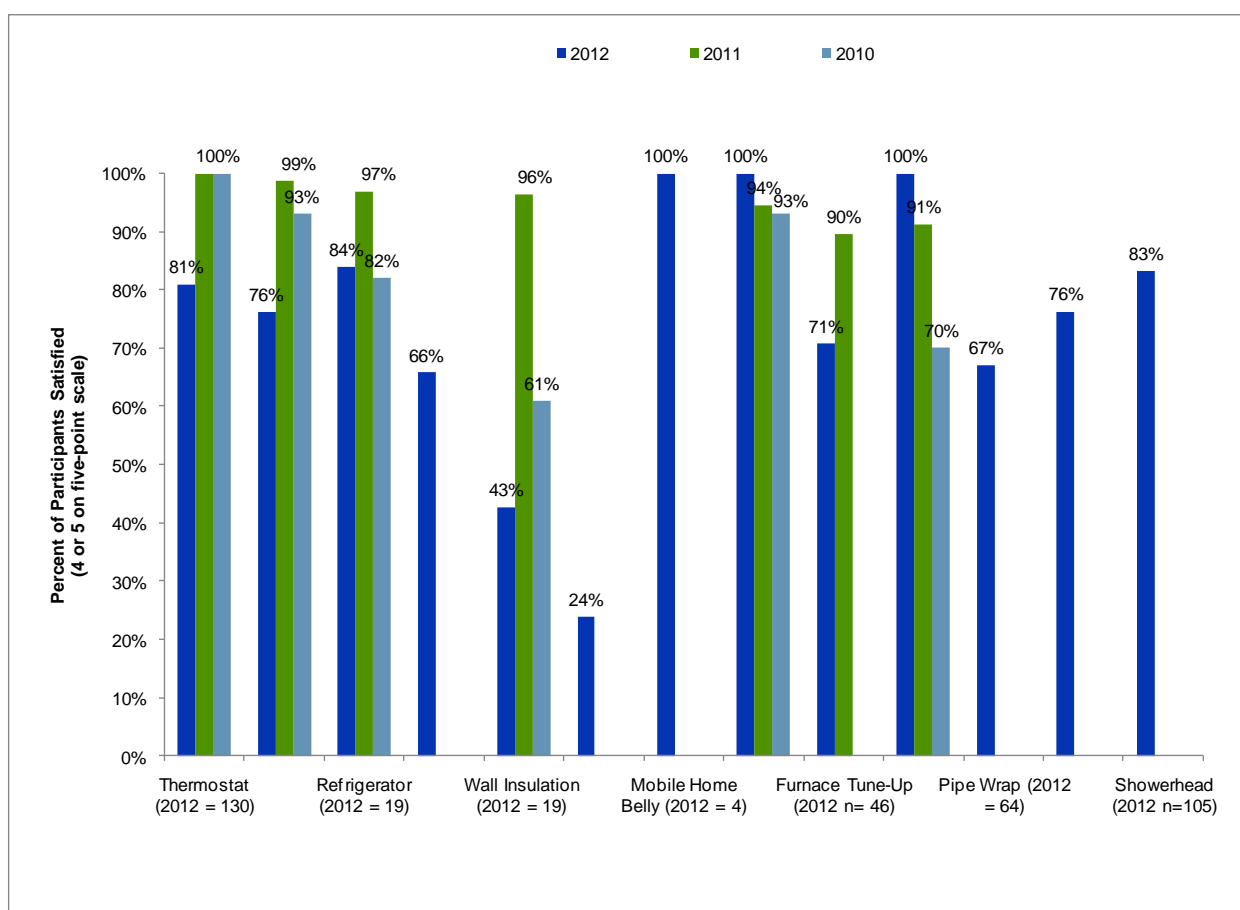
- The thermostat did not turn on by itself has to be manually controlled;
- The thermostat kept changing temperature; and
- One customer claiming to have paid \$70 to have the old thermostat put back on.



Table 3-22. Satisfaction with Measures Installed

Satisfaction	Thermostat (2012 = 130)	CFLs (2012 n=90)	Refrigerator (2012 = 19)	Attic Insulation (2011 n=43; 2010 n=32)	Wall Insulation (2011 n=20; 2010 n=10)	Band Joist Insulation (2012 n=5)	Furnace (2012 n= 13)	Furnace Tune-Up (2012 n= 46)	Air Sealing (2012 n=8)	Pipe Wrap (2012 = 64)	Mobile Home Belly (2012 = 4)	Faucet Aerator (2012 n=150)	Low-Flow Showerhea d (2012 n=105)
5 - Very satisfied	74%	70%	84%	60%	37%	24%	100%	62%	78%	59%	100%	62%	69%
4	7%	7%	0%	5%	6%	0%	0%	9%	22%	8%	0%	15%	14%
3	3%	13%	5%	0%	6%	0%	0%	5%	0%	7%	0%	8%	8%
2	5%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	1%
1 - Not at all satisfied	5%	3%	0%	0%	0%	0%	0%	17%	0%	2%	0%	6%	4%
Don't know	6%	4%	0%	34%	51%	76%	0%	8%	0%	24%	0%	7%	4%
Refused	0%	2%	4%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%

Figure 3-56. Equipment Satisfaction Ratings for 2012 Participants



3.6.5.2 Satisfaction with Contractors and Program

The survey also asked how satisfied the 2012 participants were with the installation contractors and the program in general, using the same five-point scale. Table 3-23 shows that 87 percent of respondents said they were satisfied (4 or 5 on the five-point scale) with the contractors. Reasons cited for dissatisfaction with the contractors fell into four categories: poor workmanship, unprofessional behavior such as



rudeness or showing up late, failing to install a promised measure, and low quality or faulty materials/equipment.

Overall satisfactory ratings achieved favorable results with 90 percent of participants stating they were satisfied. Negative comments about the quality of the equipment and the quality of the installation dominated the cited reasons for dissatisfaction with the program overall. This suggests a need to improve the quality and the quality control procedures related to contractors who do work for the RLI program and the equipment they install.

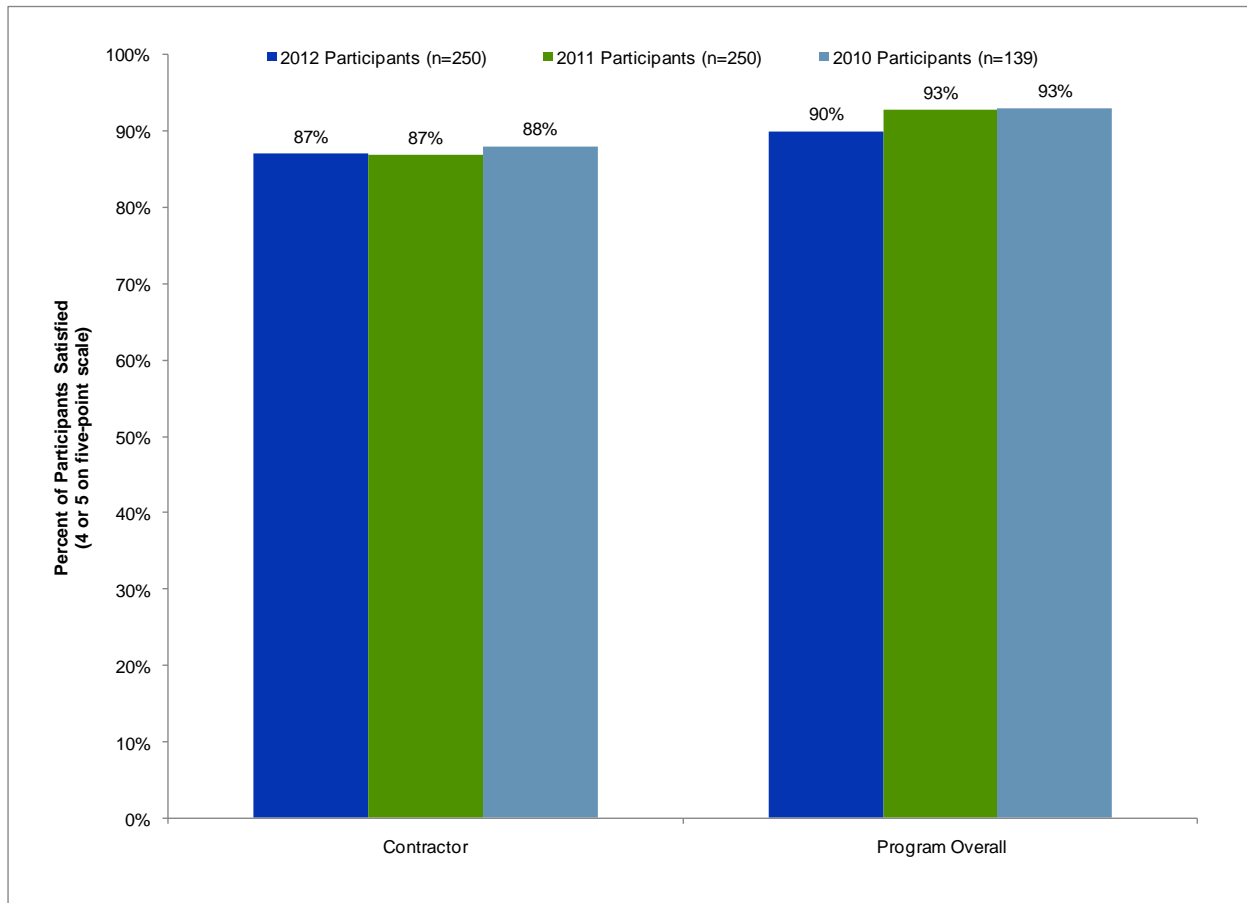
Table 3-23. Participant Satisfaction with the Contractor and the Low Income Program Overall

Satisfaction	Contractor	Program Overall
5 - Very satisfied	80%	74%
4	7%	16%
3	5%	4%
2	0%	2%
1 - Not at all satisfied	1%	2%
Don't know	7%	2%

Figure 3-57 compares respondent satisfaction with contractors and the overall program from 2010 through 2012. Satisfaction levels reported for contractors were virtually unchanged from the previous years while the satisfaction for the program overall decreased by three percent.

Complaints about the equipment were most often associated with the challenges of getting accustomed to the changes such as programming the thermostat, different light output from CFLs, and the flow of water from aerators. Substandard quality was described in some cases, but less frequently than the user’s lack of preference. Several CAAs that implement these programs have expressed reluctant in using these measures due to the frequency of user dissatisfaction.

Figure 3-57. Percent Satisfied with Contractor and Overall Program 2010 - 2012



3.6.5.3 Satisfaction Rating Comparison by Demographic

The overall satisfaction ratings are by and large similar to previous years. However there are a few statistically-significant differences among the respondent’s subgroups. This suggests the program doesn’t have a problem serving a particular demographic.

- In 2012 seniors were less satisfied with the program than participants from other age groups:* Across all age groups there is less than a seven percent difference in “overall satisfaction” with seniors being the least satisfied followed by the youngest age group (<47). For example, 15 percent of seniors were “less than satisfied” (<3) as compared to five percent of respondents in the middle age category (47-64), and eight percent for those under age 47. In comparison, in 2011 the seniors were the most-satisfied participant age group with a 94 percent satisfaction rating.
- Participants in households with relatively more income tend to be more dissatisfied with the program:* Thirteen percent of respondents with income levels of >15K were less than satisfied with the program compared to four percent of households with a income level of <15 K. This



difference was the most significant of all the comparisons (number of residence, education levels, income, age, gender, and owners vs. renters).

- *Less-educated participants also were more likely to be satisfied with the program although the statistical difference between education levels is negligible.* In 2011 we saw similar results with satisfaction ratings and education level. In 2012, five percent of respondents with less than a high school degree, were unsatisfied as compared to eight percent of those that had a high school degree or higher.
- *Larger households tended to be more satisfied.* Ninety four percent of participants with household of three or more persons were very satisfied with the program compared to 87 percent of participants with households of two or fewer persons.
- *Less-educated participants were more likely to be satisfied with the program:* Ninety-one percent of those with a high-school education or less were very satisfied with the program compared to 76 percent of those with more than a high school education who were very satisfied. This less-educated group, like the smaller household group, was highly correlated with the senior group. Nearly 70 percent of the seniors had a high school education or less compared to only 38 percent of those in the under 47 age group.
- *There was a correlation between satisfaction with the installed equipment and high satisfaction with the program as a whole.* Eighty-seven percent of participants who were satisfied with all their installed equipment were also “very satisfied” with the program as a whole. In comparison only 66 percent of those who were less than satisfied with the equipment were also “very satisfied” with the program as a whole.

3.7 2012 Behavioral Study Pilot Program

This section covers the findings from our evaluation of the 2012 Behavioral Study Pilot program.

3.7.1 Summary

The following are some highlights from the in-depth interviewing of 2012 Behavioral Study Pilot program participants:

- *Program participation:* Most participants indicated that saving money and/or energy drove their program enrollment in this pilot program. Program participants were also generally satisfied with the enrollment process. Participants who dropped out the program after the first module rated their satisfaction slightly lower for the overall enrollment process.



- *Dropout driver:* Among the ten participants we interviewed who dropped out of the program, the most frequently-provided explanation (four out of 10) was that they were too busy. Three of the ten attributed their dormancy to not hearing from Efficiency UNITED as expected.
- *Modules and surveying:* Participants we interviewed appeared to have a higher dropout rate if their first module included direct install measures. Dropouts were more likely to have either not installed the measure to begin with, or removed it after installing it. Participants who completed three modules reported slightly lower levels of satisfaction with both the modules and the surveying process as they moved through the program.
- *Incentives:* Nearly half of the participants who completed the program reported that the incentive took between one and two months to arrive. Four of the 20 participants we interviewed had not yet received an incentive nearly three months after the tracking data indicated they had completed the program.
- *Behavior change:* Eighty-five percent of participants who completed the program reported that the program had changed their behavior; however, when analyzing their verbatim responses, many explained how the program had *increased their awareness* of their energy use or sources of energy losses in their homes. Eighty percent confirmed the program helped them reduce their energy use, while 65 percent said the program lowered their energy bill.
- *Overall program satisfaction:* Participants who completed the program rated the program elements that involved human interaction most highly. These included the surveying and the interaction with enrollment staff. Conversely, participants who stopped program activity after the initial module gave higher levels of satisfaction to the actual module and program overall, but slightly lower satisfaction ratings for the surveying and interaction with program staff.

3.7.2 Program Description

The Efficiency UNITED (EU) Behavioral Study Pilot program aimed to continue the interaction and the energy efficiency education of MCAA utility customers who have previously participated in an Online Audit program. CLEAResult is both the program implementer for the Online Audit program and this Behavioral Study Pilot program. The program goals were as follows:

- Determine effectiveness of online audit programming;
- Determine what suggestions and/or changes the audit prompted the customer to make;
- Analyze the results of continued customer contact and educational opportunities in energy saving behavior; and
- Create a database of the types of behavioral changes that are most often used to save energy and discuss the potential savings from these behavioral changes.



CLEAResult used participant records from the Online Audit program and performed pre-qualification checks to determine whether a customer would qualify to complete a three-module commitment (out of a possible eight modules) with the Behavioral program. A customer qualified based on their water heater type, how they heated their home, and how they used electricity in their home. The module subjects covered electricity, hot water, and heating and cooling. The first qualifying call was entered into the database in October 2011. November 6, 2012 was the last date in the database where there was a record of a qualifying call.

The following list highlights the eight modules DNV KEMA verified were offered to Behavioral Study Pilot participants, according to the program tracking data:

1. *Air circulation*: Focuses on comfortable room temperatures through diverting air flow.
2. *Refrigerator*: Focuses on achieving peak efficiency through refrigerator maintenance
3. *Plug load*: Focuses on reducing "phantom" power consumption
4. *Lighting use*: Focuses on reducing unnecessary lighting
5. *Draft reduction module*: Focuses on controlling indoor temperature through locating and modifying drafts throughout your home.
6. *Solar gain module*: Focuses on utilizing energy from the sun to reduce home heating costs.
7. *Shower time module*: Focuses on saving energy through monitoring shower time.
8. *Hot water set point module*: Focuses on finding the correct water heater temperature setting for you.

If a customer both qualifies for and agrees to participate in the Behavioral Study Pilot program, they are assigned their first module by CLEAResult staff. They are interviewed (pre-module) before receiving their information to collect baseline information related to the module. CLEAResult staff then sends a module kit to the participant. These kits are shipped in simple cardboard boxes, but contain program-specific branded materials and instructions sheets. The participants open the kits, read the instructions, take measurements (if necessary), and complete the direct install and/or other assigned activities.

The participant provides post-module feedback about their experience to CLEAResult after completing the module. Participants either receive a call from CLEAResult staff to complete their post-module survey by telephone, or -- if the participant prefers -- they can complete an identical survey online and confirm their readiness to move onto the next module. The online survey instrument and software used by participants, or by CLEAResult staff while on the phone with a participant, are identical data collection tools. This uniformity between the two instruments is designed to control for data collection variance while also giving participants a survey method choice.

The participant repeats this module process until they have completed a total of three separate energy efficiency units. They complete a pre- and post-module survey for each unit. After the participant completes three modules, they can collect and receive a \$30 incentive (check) for their participation. A participant does not receive an incentive for partial participation.



The program completion rate is fairly high. This can likely be attributed to the participants' previous enrollment history with other EU energy efficiency programs, and the CLEAResult staff's use of pre-qualification process before a participant is invited to continue with this pilot program. However, DNV KEMA did notice during its examination of program tracking data that some participants did not appear to have completed the program. We completed interviews with both participants who had completed the program and with participants who had appeared to have dropped out of the program after their first module within this evaluation.

3.7.3 Evaluation Goals & Methodology

DNV KEMA initially created a Behavioral Study program evaluation work plan after beginning its interviewing with CLEAResult program staff in Fall 2012. We recommended that an online survey be distributed to the entire participant population, given the participants' demonstrated proficiency and likely comfort with online programming. We issued a data request to CLEAResult to obtain their participant program tracking data, with the key objective of acquiring personal contact information for each participant, and conducting our online survey.

DNV KEMA's receipt and review of their program tracking data uncovered a robust and highly usable tracking database (in .xls format) that contained participant responses to each post-module survey. For participants who have completed the program, this translated into three sets of complete survey data, representing each survey taken at each program interchange. These data collection efforts covered many of the research objectives DNV KEMA had originally proposed before having the opportunity to examine the program tracking data.

DNV KEMA reconsidered its participant Behavioral Study program process evaluation approach in light of the large amount of pre-existing survey data collected by CLEAResult as part of their program process. Specifically, we were able to identify additional participant areas that had not yet been addressed in CLEAResult's program data collection. The following is a brief list of topics not covered in previously collected data:

- The actual program qualification process and/or the pre- or post-module surveying process;
- The incentive payment/claim process (incentive level, time to receive payment, etc);
- Participant satisfaction with CLEAResult's communications, staff, etc.; and,
- Various participant perspectives after *fully completing* the program.

DNV KEMA recommended not only a strong focus on the missing program data elements above; but a change in data collection method. Instead of additional online surveying, we opted to conduct in-depth interviews of program participants to assure the focus stayed on what the participants' perspectives were now that their program experience was complete. In sum, our evaluation goal was to provide complete participant feedback that includes program implementer assessment, and compliments program data previously gathered by CLEAResult.



The participant interviews covered the following topics:

- What they thought about the program enrollment process;
- Why they chose to participate;
- Which program modules they participated in and why;
- Whether they encountered any difficulties within any of their modules (e.g., equipment compatibility, ease in understanding the module information, time to complete each module, etc);
- What they thought about the pre- or post-survey process for each module;
- Whether the module measures and/or equipment were (still) installed now that they have completely finished the program;
- The influence of the program on their decision to install the measures;
- Whether they completed pre- and post-surveys online or over the phone with CLEAResult staff;
- What feedback they have about the program rebate (level, process, time to receive rebate, etc);
- Post-program satisfaction ratings for:
 - The process of qualifying and enrolling in the program;
 - Overall satisfaction with modules;
 - The process of completing pre- and post-survey requirements;
 - The process of installing the EE measures;
 - The interaction with program implementation staff; and
 - The program as a whole;
- Recommendations for program improvements; and
- Demographics.

DNV KEMA collected data on many of the same topics in its interviews of participant ‘dropouts’. ‘Dropout’ interviews omitted questions about the incentive process, and focused instead on understanding the barriers that prevented customers from finishing the program.

3.7.3.1 Sampling: Participants

CLEAResult provided DNV KEMA its program tracking database, which contained a population of 876 program participants as of December 7, 2012. DNV KEMA chose 154 records from the participant population that had completed all three energy efficiency modules. Our staff attempted to reach 45 of these participants, and completed 20 participant interviews in February 2013, resulting in a final response rate of 44 percent. Table 3-24 highlights our participant interview dispositions.



Table 3-24. Participant Interview Disposition

Sample Description	Number	Percent
Sample	154	
Not dialed	106	
Invalid sample	3	
Sample used	45	
Refused	2	4%
Dialed/Not contacted	24	53%
Complete	20	44%

3.7.3.2 Sampling: Participant ‘Dropouts’

DNV KEMA did not recognize any data markers in the tracker file that designated customers who were at risk for not completing the program or confirmed they would not finish. In order to complete our evaluation goal of interviewing up to 10 program ‘drop outs’ (dropouts), we defined them as follows:

- The participant was recruited after December 1, 2011 (recruited within the last year) and completed module one by the end of August 2012.
- The participant had no further data (module two or three) posted in the tracking file from CLEARResult after completion of their first module. This means a minimum of four months had gone by since a customer in the file completed their initial module.

DNV KEMA’s use of the above parameters to define program dropouts yielded a sample of 106 possible program participants. Table 3-25 highlights our dropout interview dispositions. Our staff completed the interviews with 10 program dropouts in February and March 2013. We had a final response rate of 10 percent, and we did not deem any sample records as unreachable.

Table 3-25. Dropout Interview Disposition

Sample Description	Number	Percent
Sample	106	
Invalid sample	5	
Sample Used	101	
Would Continue - Ineligible	30	30%
Refused	26	26%
Dialed/Not contacted	35	35%
Complete	10	10%

3.7.4 Findings from the In-Depth Interviews

3.7.4.1 Characterization of the Participants

Our interviews asked several demographic questions to better characterize the participants and the households they live in. These questions included the home ownership, home type and other characteristics, number of people living in the household, education, income, and gender.

Highlights of participant responses to demographic questions are summarized below:

- *Home ownership:* All participants live in single-family, detached homes, and all but one of the participants (19 out of 20) who completed the program owned their home. Other key characteristics of participant homes are as follows:
 - The average length of time a participant had lived in the home was just over 21 years.
 - More than half of the participants (n=11) indicated that their home was built before 1950. Five participants indicate their house was built in the 1970's; the newest home type among participants we surveyed.
 - Six participants indicated their house was between 1,200 and 1,800 square feet – the most frequently chosen answer. Six participants did not know the approximate square footage of their home. Other categories were chosen with the following frequency:
 - Less than 1,200 ft – one respondent
 - 3,000 feet or more – one respondent
 - 1,800 to less than 2,400 square feet – three respondents
 - 2,400 to less than 3,000 square feet – three respondents
 - The average number of people living in a participant home was three.
- *Age:* The average participant age was 55.
- *Internet access:* Only one participant of 20 did not have internet access. Of the 19 participants that confirmed they have internet access, 17 of them categorized their access as high speed.
- *Education level:* Eight participants indicated that “high school” was their highest level of education. Five participants reported that they had earned an Associate’s Degree; four participants, a four-year college degree. Three participants had earned a Graduate Degree or higher.
- *Income:* Six participants refused to report their income or said they did not know how to categorize it. Four earn less than \$25K per year. Two earned more than \$75,000. Three



participants reported earning \$25K to less than \$50K; five earn between \$50K and less than \$75K.

- *Gender:* DNV KEMA interviewers categorized 12 of the 20 participant respondents as male. Eight were female.

3.7.5 Program Participation

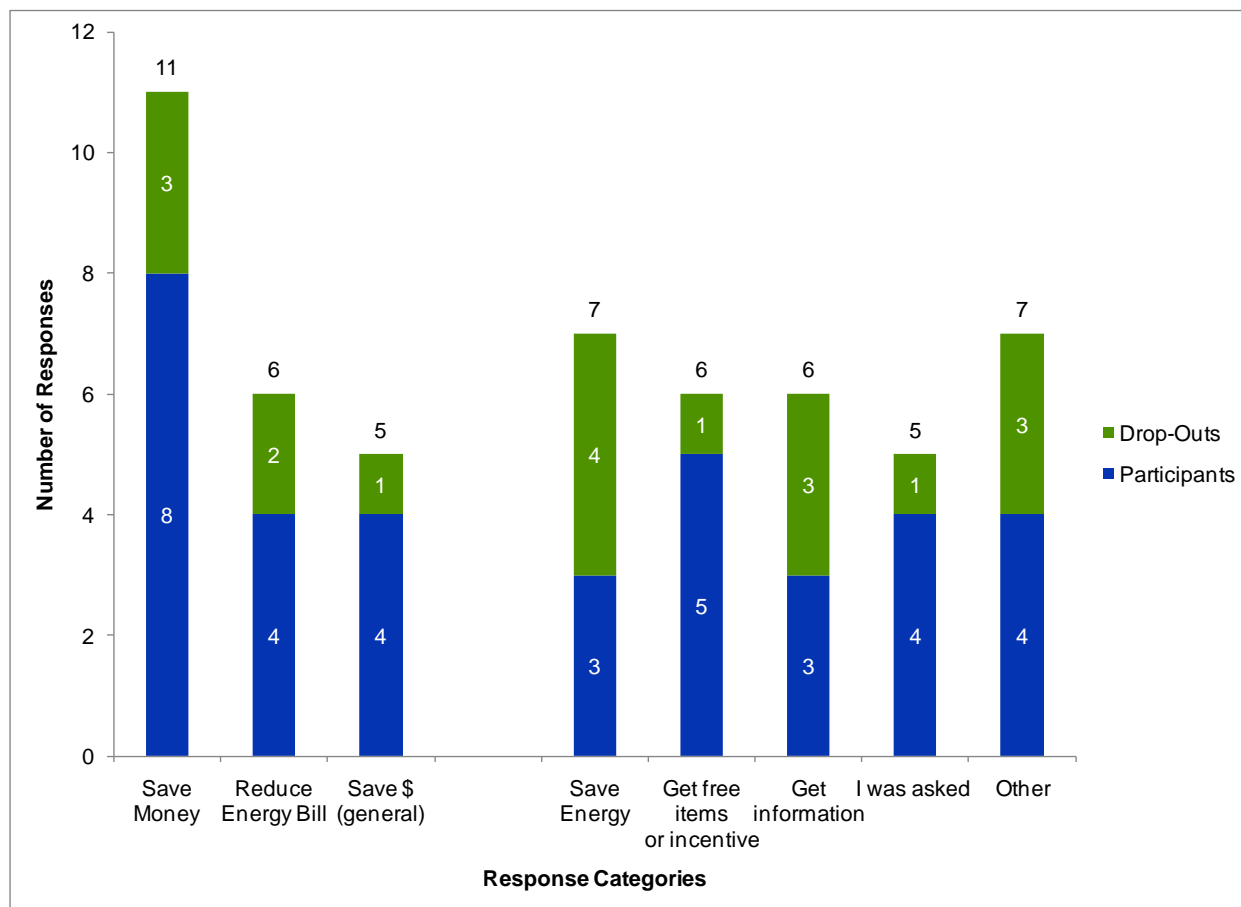
One of our first interview objectives was to understand why participants of all types chose to enroll in the Behavioral Study Pilot program. This report section explores whether participation motivations differ between participants who completed the program and those who dropped out; additionally, we assess participants' opinions about the enrollment process. Finally, we examine what were the defining reasons a participant did not complete the program.

3.7.5.1 Motivations to Participate: Participants vs. Drop Outs

DNV KEMA asked both participants (n=20) who had completed the program and program dropouts (n=10) to name the main reasons they enrolled in the program. We captured the responses verbatim and then coded them into like categories. Multiple responses were allowed.

Program enrollees most commonly (11 out of 30 respondents – 37%) indicated that saving money drove their program enrollment. These similarly-categorized responses were split among those who were looking to save money generally (17%) and those who specifically mentioned reducing their energy bill. Program enrollees also frequently named saving energy (23%) as a key reason they chose to enroll in the Behavioral Study program. While not statistically significant, a higher proportion of drop-outs (40% of dropouts) mentioned saving energy than participants (20%).

Figure 3-58. Behavioral Study Program. Reasons for Enrollment



Respondents also provided enrollment reasons that did not fit into categories with other respondents categorized as “other” in Figure 3-58. These reasons include examples like curiosity about the program or about the surveying process, “something to do”, and an interest in efficiency or sustainability.

3.7.5.2 Enrollment

Enrollment in the Behavioral Study is not initiated by the customer. CLEARResult staff members called the customer to explain the Behavioral Study, gauged their interest, and enrolled them in the program.

DNV KEMA asked all participants we surveyed about the staff person who called them to enroll them in the program, the pre-module surveying process, and the enrollment process as a whole.

Table 3-26 displays the percent of participants who completed the program who rated enrollment elements as ‘satisfied’ or ‘very satisfied’; it also highlights the ratings of dropouts on the same enrollment questions. Participants who completed the program rated their satisfaction with the enrollment process overall, and the enrollment elements, more highly than those who eventually dropped out of the program.



Table 3-26. Satisfaction with the Enrollment Process

Enrollment Element	Participants: Percent Satisfied	Dropouts: Percent Satisfied
Staff person	90%	89%
Pre-Module Survey	100%	100%
Enrollment process overall	95%	80%

3.7.5.3 Reasons for dropping out

We asked why participants who apparently dropped out of the program were not currently planning to complete additional energy efficient modules. Again, interviewers took responses verbatim, but responses generally fell into categories. Multiple reasons were accepted and included in the category totals. The categories we created from these responses appear in Table 3-27. “Too busy” was the most frequently provided reason for dropping out of the program. Three out of the ten respondents we had categorized as program dropouts contributed their lack of program activity to lack of follow-up.

Table 3-27. Reasons for Dropping Out of the Program

Too busy	Did not hear from EU	Not worth effort	Already efficient	No longer interested
4	3	3	2	1

DNV KEMA asked screener questions at the beginning of our interviews to confirm our interviewees had *actually* dropped out of the program. Our intent was to assess if a respondent planned to complete additional modules in the near future. If respondents stated that they were not interested in continuing with the modules, we continued our interview to determine why they dropped out. Conversely, if a respondent indicated they planned to continue with the program at some point, we terminated the interview.

Some respondents indicated during our screening process that they had not heard from the program as they expected in order to continue. Of the 101 total households we categorized as potential dropouts and called for this research, twenty-six refused and thirty-five were never contacted. Thirty of the remaining 40 were ineligible for our dropout interviews because they wanted to continue the program. This could point to a potential process issue within the customer follow-up mechanism in the program. Alternatively, the program dropout definition that DNV KEMA crafted may not have been generous enough to consistently isolate true dropouts within this research.



3.7.5.4 Participant Perspective on Program Processes

DNV KEMA’s process evaluation of the Behavioral Study Pilot program included specific objectives to examine key program elements. This section summarizes both complete and dropout participant responses to questions we asked about the program modules and the surveying element of the program. We also examine feedback that participants provided about the incentive payment process.

3.7.6 Modules & Surveying

The energy efficiency modules sent to Behavioral Study Pilot program participants included various energy efficiency direct install measures and/or measurement equipment, along with detailed module instructions. The modules typically also contained data tallying and reporting instructions.

3.7.6.1 Module Feedback and Installation Verification

Our evaluation interviewers asked all program participants (regardless of completion status) to give their impressions of the program modules and its contents. We inquired about the module packaging, instructions, measures, and assessed satisfaction with the modules and their measures. The participants gave the following feedback about the modules to DNV KEMA during its interviews.

- Participants reported that it took, on average, two weeks between when they enrolled in the program and when they received their first energy efficiency module.
- All participants confirmed their modules contained instructions.
- All participants indicated the module instructions were helpful.

An interesting data difference emerged (see Table 3-28.) between our two interview groups when we asked about direct install measures in the first module. All dropouts received direct install measures in their first module; while roughly a quarter of participants who completed the program did not start with a module that included direct install measures.

Table 3-28. Did the [First] Module Include Direct Install Measures?

	YES	NO	DK
Total	23	5	1
Participant	14	5	0
Dropout	9	0	1

Among those who had direct install measures in their first module, we asked whether or not the respondent had installed the measure. All participants who ultimately finished the program confirmed they installed their measures; meanwhile, two of the nine dropouts who received direct install measures did not. These differences are shown in Table 3-29.

Table 3-29. Did You Install the Measures?

	YES	NO	DK
Total	21	2	0
Participant	14	0	0
Dropout	7	2	0

Finally, we completed collecting data on measures by asking respondents if the measures were still installed (Table 3-30). Two respondents in both interview groups had removed the measures. However, in summary, data from this question series verified only about half of the dropouts (5 of 9 who answered this question series) installed and retained the module measures.

Table 3-30. Are the Measures Still Installed Now?

	YES	NO	DK
Total	17	4	0
Participant	12	2	0
Dropout	5	2	0

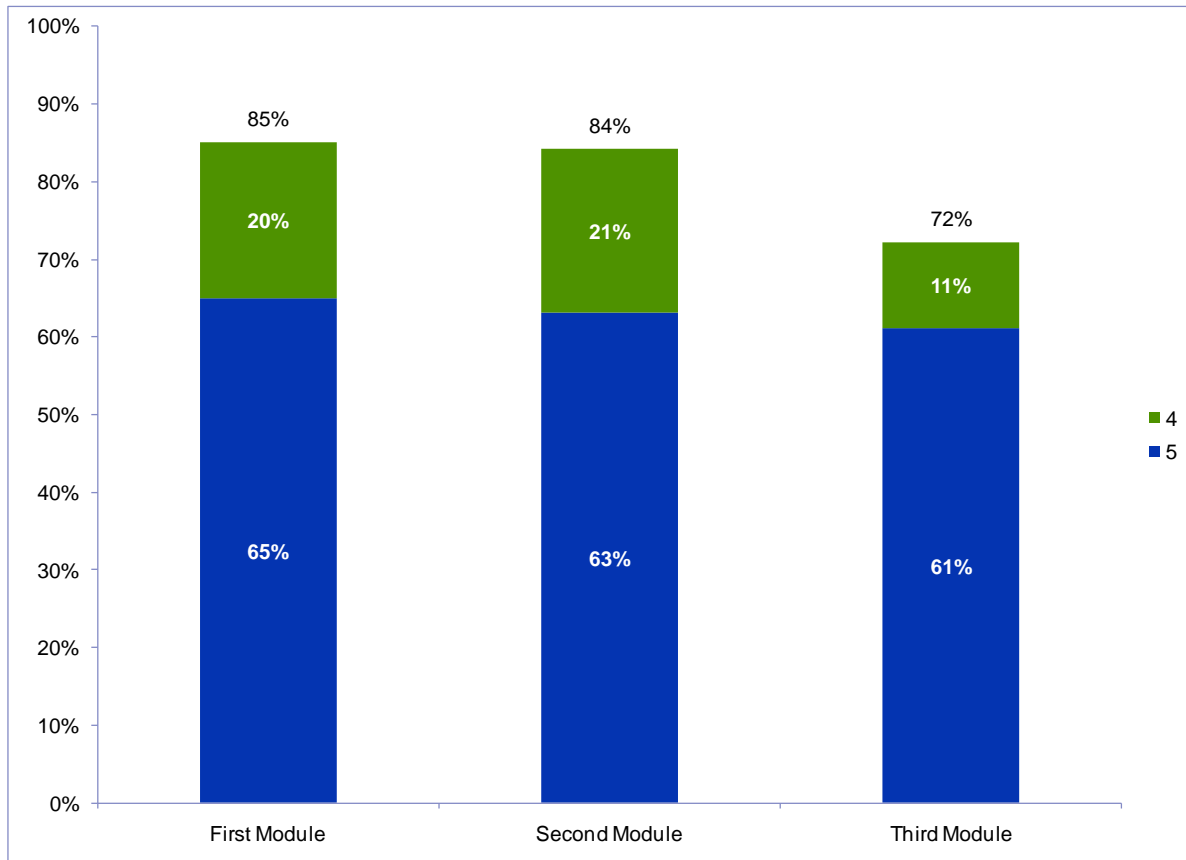
3.7.6.2 Module Satisfaction

We asked *all* program participants we interviewed to rate their satisfaction with their first module, where a rating of five was ‘very satisfied’ and one was ‘very dissatisfied’. Program dropouts expressed consistently higher satisfaction with their first module than participants. All dropouts rated their first module with a value of four or five, compared to 85 percent of participants who completed all three modules.

Satisfaction rating trends flipped between our two groups when we offered the same scale to assess their satisfaction with the first module *survey*. All participants who completed the program ranked their satisfaction with the first module survey a four or five; in fact, nearly all of them ranked the process with the highest, ‘very satisfied’ rating. Conversely, dropouts (83%) were less likely to rate their satisfaction about the first module survey a four or five.

Finally, we asked participants who had completed the program to rate their satisfaction with the second and third modules, so we could examine how their satisfaction may or may not have changed over time. Participants reported being the most satisfied with the first module, as 85 percent rated it a four or a five. About the same percent of participants reported being satisfied with the second module; satisfaction dropped with an assessment of the third and final module, with 72 percent of participants rating their satisfaction at “satisfied” or higher. This slight slip in satisfaction ratings suggests that participants may have grown fatigued with the program as it continued.

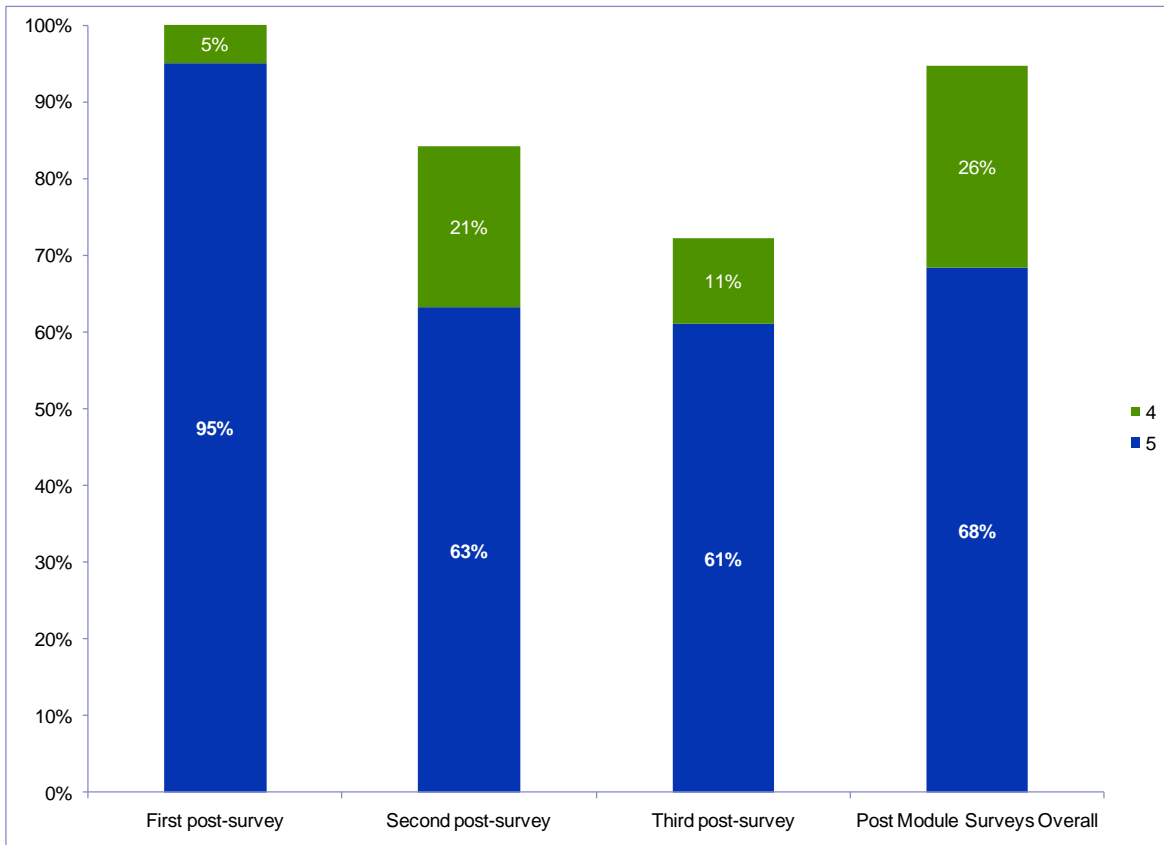
Figure 3-59. Module Satisfaction Ratings as Program Progressed



Participants who completed the program also reported a slight decline in satisfaction with the post-module surveying process over the program duration. While this group almost unanimously reported (95%) being “very satisfied” with the first post-module survey, 61% gave the same satisfaction rating about the third post-module survey.

Figure 3-60 highlights that while participants were generally satisfied with the survey process overall, they expressed slightly lower satisfaction ratings as the program moved towards completion.

Figure 3-60. Post-Module Survey Satisfaction Ratings as Program Progressed

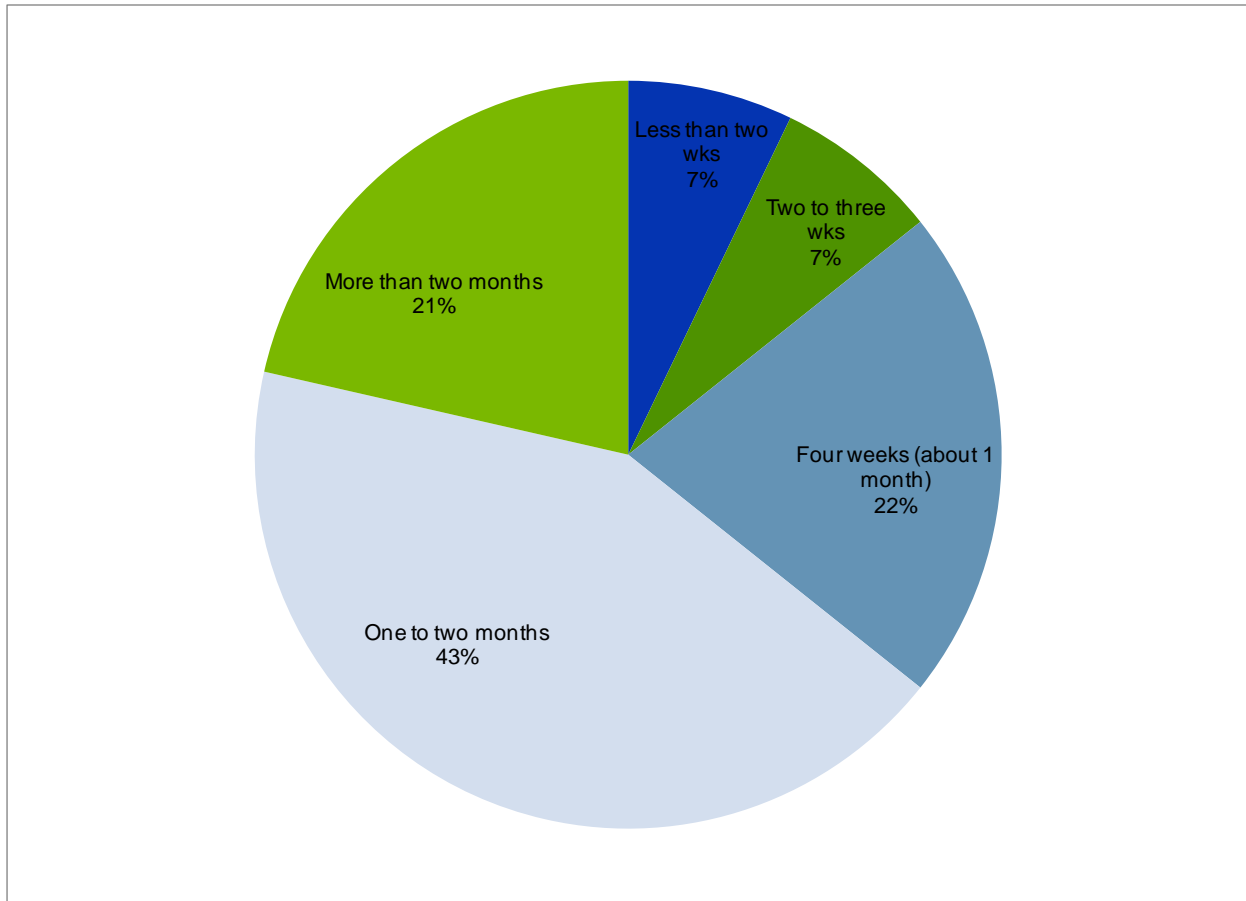


3.7.7 Incentives

DNV KEMA asked participants who had completed all three modules by early December 2012 about the incentive payment process. Fourteen of the participants confirmed they had received their program incentive at the time of our interviews in late February 2012. Four of the 20 (20%) participants reported they had not received their incentive. One participant was uncertain of their incentive payment status.

We continued our incentive questions with participants who confirmed they had received their incentive by asking these participants to choose an incentive processing time window that applied to them. Figure 3-61. shows how the compensated participants categorized their incentive wait time; “One or two months” was the category chosen most frequently among our participants who had received their incentive payment.

Figure 3-61. How long did it take for you to receive your incentive payment after you had completed the program?



Finally, we asked participants who had received their incentive to rate their satisfaction with the payment process on a scale of one to five, where five was ‘very satisfied’ and one was ‘very dissatisfied’. Seventy-four percent of these participants rated their incentive payment experience a four or a five, confirming a satisfactory experience for a majority of participants. Those who rated it lower consistently reported it took too long to receive an incentive – or they had not received it at the time of the interview.

3.7.7.1 Participant Behavior Change and Program Satisfaction

One of the key goals for the Pilot Program was to change participant behavior and reduce energy use. Participants were asked in their post-module surveying about behavior changes and energy savings; however, both EU and CLEAResult wanted to ask participants, now that they had completed the program, to assess their change in behavior in energy usage.

Table 3-31 highlights a series of behavior change assessment questions that we asked the 20 participants we interviewed who have completed the program. We asked participants to assess whether or not their



participation in the program changed their behavior, reduced their energy use, and finally, if it lowered their energy bill. Here are a few of the data highlights from this question series; more complete data appears in table.

- Most (85%) of the participants felt the program changed their behavior; however, more than half of the participants who confirmed they’d changed a behavior explained *their awareness* had increased.
 - *Decreasing energy use* answers were the second most popular behavior change example provided (shutting off lights, unplugging appliances while not in use, etc).
- Eighty percent of the participants indicated they reduced their energy use
- Slightly fewer participants (65%) thought their program participation helped them lower their actual energy bill.
 - Only about half of the participants who confirmed their energy bill had dropped could quantify their bill savings.
 - Among those who could, a bill reduction of *10 percent to 20 percent* was the most frequently mentioned answer.

Table 3-31. Behavior Change Assessment Among Participants Who Have Completed the Program

Now that <u>you've completed it</u> , do you feel your participation in the Behavioral Study program . . .				
Question	Yes (N)	Yes (%)	How / By how much? (Top 2 Reasons Given)	N
. . . changed your behavior?	17	85%	Increased awareness of energy use Decreased energy use	11 5
. . . reduced your energy use?	16	80%	Not sure / hard to say / a little Five to 15 percent	6 3
. . . lowered your energy bill?	13	65%	Not sure / avoided bill increase Ten to 20 percent	5 3

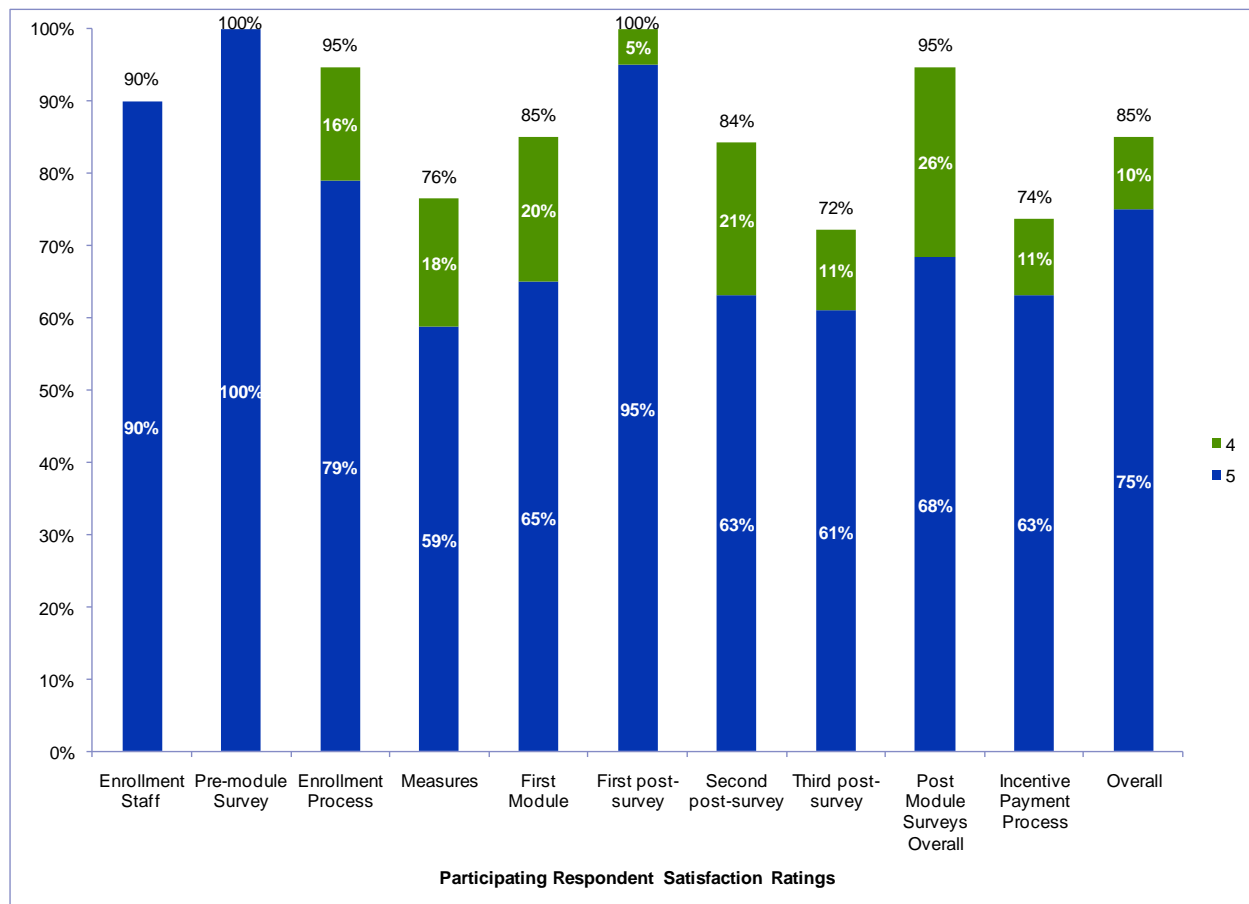
3.7.7.2 Overall Satisfaction: Participants vs. Dropouts

We opted to compare the satisfaction scales side-by-side within our interview groups. This exercise allows us to assess what program elements most satisfied Behavioral Study program participants, and what program elements garnered lower satisfaction ratings among those we interviewed. Figure 3-62 compares ratings among participants who completed the entire program and all three modules; Figure 3-63 displays satisfaction ratings that applied to participants we labeled as dropouts.



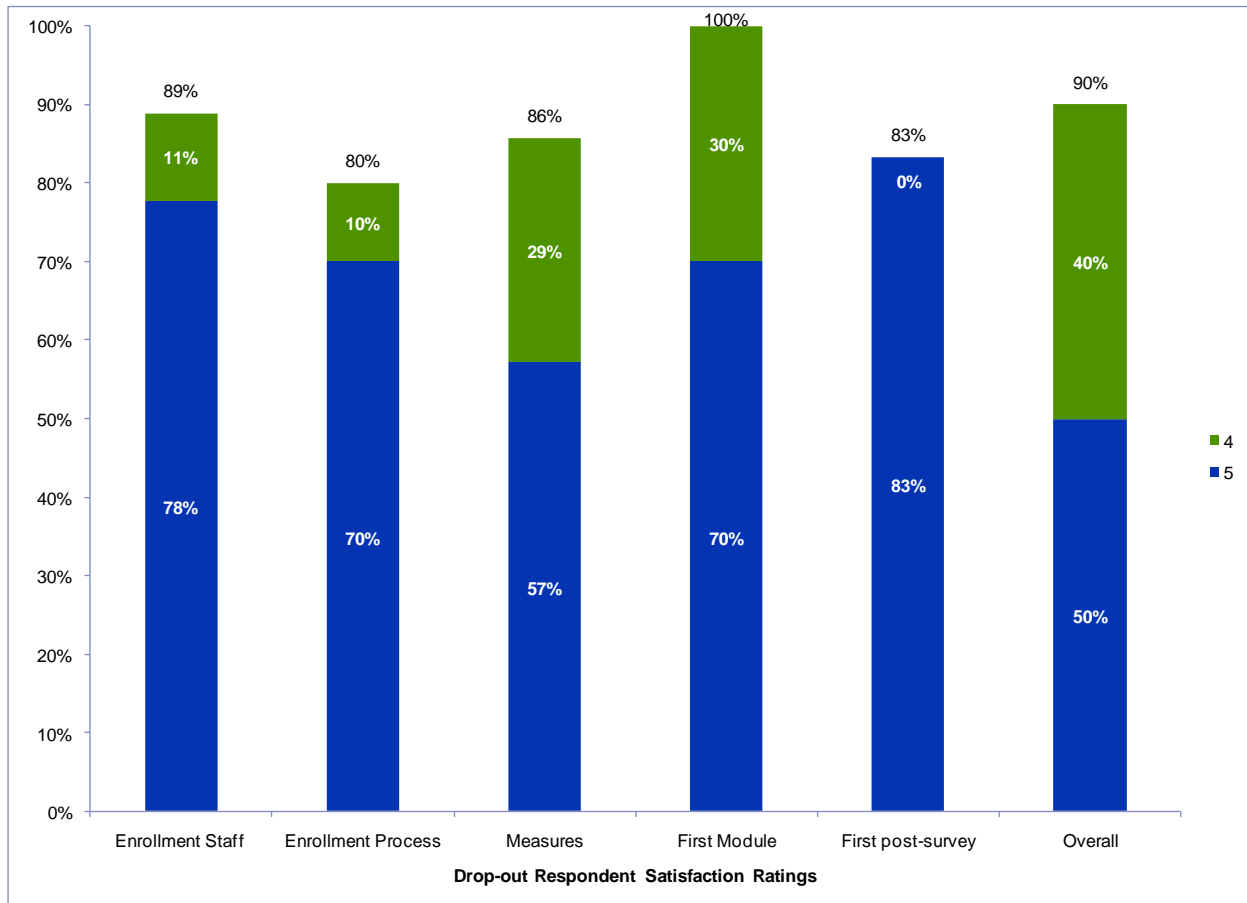
Participants who completed the program gave the highest satisfaction ratings to program elements that involved personal program contact: enrollment staff, pre-module surveying, and the first post-module survey. While their satisfaction did decline slightly over time as the modules advanced, they were generally satisfied with the surveying process. Participants rated the following program elements lower, in declining order of satisfaction: direct install measures (76%), incentive payment process (74%), and the third post-module survey (72%).

Figure 3-62. Participant Satisfaction Scales. A Comparative Look



Participants who dropped out of the program per our definition gave the highest satisfaction rating to the first module itself. Further, this group generally rated its satisfaction with the enrollment process among the lowest of the categories we asked them to assess. As Figure 3-63 displays, the dropout group was more likely to rate their satisfaction at a ‘four’ (satisfied) than the participants who completed the program in Figure 3-62.

Figure 3-63. Dropout Satisfaction Scales. A Comparative Look



3.7.8 Suggestions for Program Improvement

We asked all participants what EU could do to improve the program. Responses varied widely, but below is a brief list of the types of answers the interviewees provided in response to this question:

- More modules in order to continue participation;
- Do more quality control of the module instructions for clarity and/or test the direct install measures; and,
- Add or substitute direct install measures (i.e., water heater blankets, and different CFLs).

3.8 Multifamily contractors

This section of the report presents results of a process evaluation for the 2012 Efficiency UNITED (EU) Multifamily (MF) Program.



3.8.1 Program Description and Evaluation Background

This subsection provides a description of the EU MF program and provides some background information on the process evaluation of this program.

3.8.1.1 Program Description

The multifamily program began implementation in August 2010. The program provides energy-saving products free of charge to multifamily building managers. The program also offers incentives for installations paid either to contractors or directly to maintenance staff, though all payments in 2012 were made to contractors. The MF program offered incentives for both gas and electric savings to customers in the EU utility service territories. The program estimates energy savings based on calculations outlined in the Michigan Statewide Energy Measures Library/Database (MEMD).

Under the MF program, participants receive the following products:

- Compact Fluorescent Lamps (CFLs)
- Bathroom Faucet Aerators
- Kitchen Faucet Aerators
- Low Flow Showerheads
- Handheld Low Flow Showerheads
- Pipe Wrap
- Programmable Thermostats
- Furnace Tune-ups

To participate, properties must contain five or more units. Participants may have either gas or electric water heat, though gas heat is required for thermostat installation. Tenants may pay their own gas and electric bills on separate residential meters, or landlords may pay them on a central commercial meter. Both types of customers are eligible.

The program continually considers additional technologies to offer for this program, and has begun offering furnace tune-ups in addition to the measures listed above (none were completed during the evaluation period). In light of concerns about CFL persistence, the program considered installing CFL fixtures, though abandoned this for cost reasons. The program also installs measures for central space and water heating systems, though this is paid for by the C&I program.

This year, the program chose not to offer CFL-only installations because installation costs made this less cost-effective. All installations in 2011 were performed by contractors, where some 2011 installations were performed by on-site maintenance staff. To participate in the program, installation contractors must have insurance coverage and a license in good standing with the state.



The program offers these measures to both low-income and market-rate multifamily properties. Because the market rate portion of the program had more money available this year than needed to meet its goals, some low income properties received installations using market rate program dollars.

The 2012 program finds its customers primarily through relationships with contractors, giving them authorization to hunt for projects on behalf of the program. This is a change from 2011 and is designed to reduce program staff time previously spent in recruiting and try to have more success in finding customers in less populated parts of the state.

Program participation begins when the contractor contacts the property manager representative – often a maintenance agent. Contractors determine eligibility based on program requirements, and propose the project using a memorandum of understanding (MOU).

In terms of education, the program simply leaves information about the energy efficient measures for staff to use at their discretion. In the past, some senior housing customers have expressed frustration with the thermostats’ complexity, though no such complaints arose this year. According to the program, 15-20% of participants are from senior housing.

After participation, the program performs quality control site visits on a quarterly basis to verify that products received proper installation and are still installed. These quality control visits are assigned randomly to 5-10% of sites, irrespective of geography.

Table 3-32 shows the accomplishments for the MF program based on the program tracking data. The table shows the tracking savings, number of projects rebated, and incentives paid during 2012, compared to 2011.

Table 3-32. Summary of MF Program Accomplishments, 2011 vs. 2012

Metric	2011	2012
Projects	23	44
Measures installed	11,584	10,611
kWh	558,42	320,413
ccf	78,443	106,061
Product Incentives	\$37,892	\$89,459
Installation Incentives*	\$52,485	n/a

*Note: Installation incentives were tracked separately in 2011, but it’s unclear how installation incentives are tracked under the new database.

Here we see that the program achieved higher ccf savings and lower kWh savings than in 2012. It is unclear how installation incentives were tracked in 2012, so a direct savings-per-cost comparison is not possible at this time.



3.8.1.2 Evaluation History

DNV KEMA did not conduct a process evaluation of the 2010 multifamily program because there was insufficient activity by the end of 2010 to warrant it. The program ramped up in late 2011, and by year-end produced enough installations to justify a process evaluation. The evaluation included interviews with eleven market rate multifamily program participants and one in-depth interview with the program director.

In 2012 the workplan specified ten participant interviews and one in-depth interview with program staff. In 2011 the program implemented projects with eleven customers, of whom DNV KEMA was able to reach five. We also completed an in-depth interview with the new program director.

Because the impact evaluation treats low income multifamily as part of the low income program, no low income multifamily participants were interviewed for either 2011 or 2012.

3.8.2 Participant Interviews

In November 2012 DNV KEMA used CLEAResult's online data tracking system to download paper copies of documentation for all 11 MF program projects and completed interviews with five of them, representing seven projects.

3.8.2.1 Participant Characteristics

To better understand what types of multifamily property managers/owners and properties were participating in the EU MF program, we asked them questions about their company's management/ownership structure and the size of their buildings and property portfolios.

3.8.2.1.1 Ownership/Management of Participating Properties

We asked the participants: "Do you or your firm own the property at <INSTALLATION ADDRESS>, do you manage it, or do you both own and manage it?" In 2012, all respondents stated that either they themselves or the company they worked for was both the owner and manager of the property. This marks a change from 2011, when the program targeted large property management companies who do not own properties themselves.

3.8.2.1.2 The size of participating properties

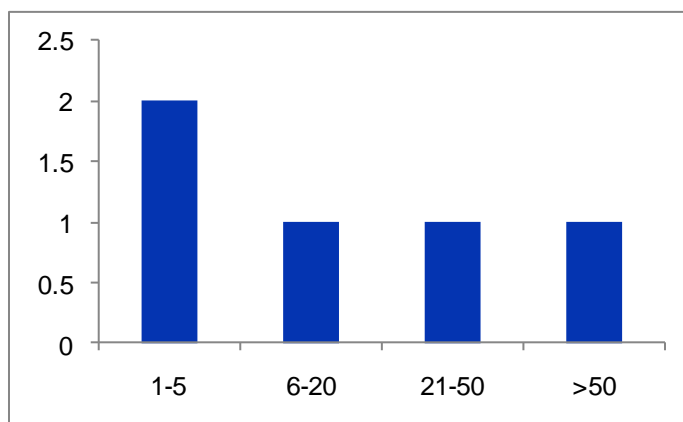
The average number of tenant units in the participating multifamily properties was 40 units with the median number of units being 12 units. The largest participating property had 151 units and the smallest had 8 units. This is much smaller, on average, than in 2011.

3.8.2.1.3 The # of properties managed by participants



We asked the participating multifamily property managers/owners how many multifamily properties their companies own or managed in Michigan. As shown in Figure 3-64, owners varied in terms of how many properties they manage.

Figure 3-64. Number of Multifamily Properties Owned by Participating Companies



3.8.2.2 How Participants First Heard About the Program

As discussed above, the CLEAResult representatives said that they did not market the MF program through mass-marketing, but rather allowed contractors to reach out to participants directly. All respondents said that they first heard about the program through a phone call from a contractor or program staff.

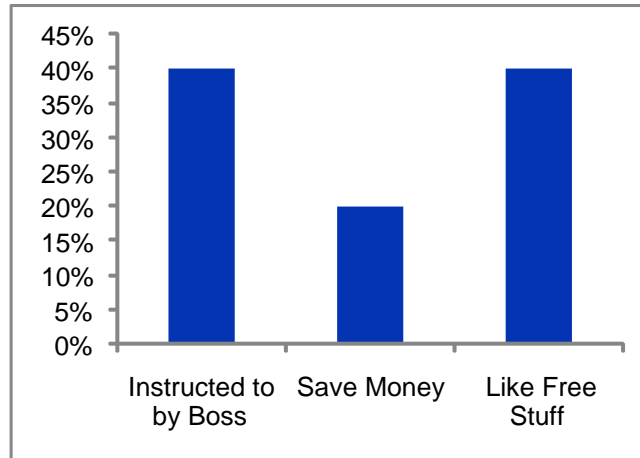
3.8.2.3 Program Participation Motives and Barriers

This subsection summarizes the responses from program participants concerning their motives for joining the program as well as the barriers they face in participating in this program or implementing energy efficiency projects in general.

3.8.2.4 Program Participation Motives

The evaluators asked the participants: “What motivated you to become involved with this program?” We received three types of responses, as shown in Figure 3-65. “Instructed by boss” refers to property management staff for whom the owner or corporate office told them to allow the installation.

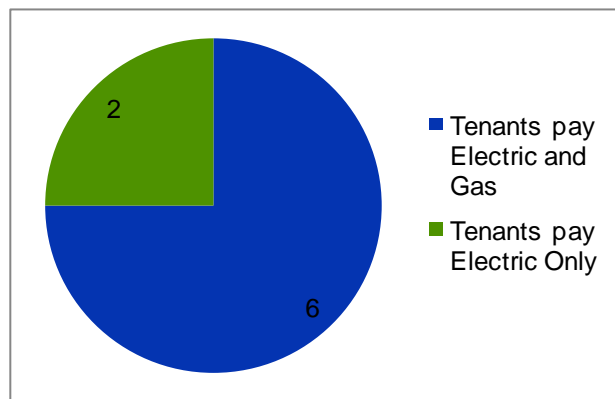
Figure 3-65. Reason for Participation



3.8.2.4.1 Barriers to Participation and Energy Efficiency

One issue that is often discussed in the context of landlord motivations for making energy-efficient improvements is the so-called “split incentive barrier.” The premise of this barrier is that although property managers/owners are responsible for facility improvements, they usually do not pay energy bills for the tenant spaces and therefore have no direct financial incentive to install more expensive energy-efficient measures in these spaces. We asked the property managers/owners who were participating in the MF program whether their tenants were responsible for paying their own utility bills, or whether utilities were included in the rent. Figure 3-66 shows that in all participating buildings the tenants had to pay at least some of their own utilities. This would indicate that in theory the split incentive barrier is a factor in the EU service territories.

Figure 3-66. Which Utility Bills Tenants Pay





However, there is evidence from other evaluation research that the importance of the split incentive barrier in influencing property manager/owner behavior may be exaggerated.²¹ To further explore the possible impact of the split incentive barrier we asked the EU MF program participants: “You mentioned earlier that your tenants pay their own utility bills. Does this affect how you make decision about which energy-using equipment you purchase?” The two respondents who said “yes” responded that they are more likely to spend on upgrades which help tenants save money rather than themselves, because it allows them to rent units easier.

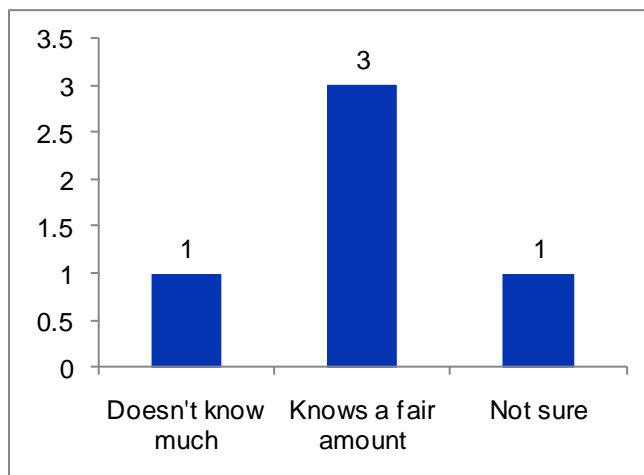
In addition to this factor, we asked participants what challenges they dealt with in implementing energy efficiency. Twenty percent said “cost,” while the rest said “none.”

3.8.2.4.2 Knowledge of Energy Efficiency

We asked the program participants if they knew of any other opportunities for energy efficiency on their properties. All participants responded that they didn’t know of any opportunities.

As a follow-up question, we asked whether they consider themselves knowledgeable about efficiency in buildings.

Figure 3-67. Self-Reported Knowledge of Energy Efficiency



The answers shown here, combined with the fact that no respondents could not think of any energy efficiency opportunities suggests that either they do not actually know as much as they claim to about energy use or efficiency, or have already implemented a significant number of energy efficiency

²¹ Dyson, Christopher, KEMA; Shahana Samiullah and Caroline Chen, Southern California Edison, *The Split Incentive Barrier: Theory or Practice in the Multifamily Sector*, 2010 ACEEE Summer Study on Energy Efficiency in Buildings.



upgrades. The impression of the interviewer is that it may have been a mix of the two, but that most respondents do not have a great deal of knowledge.

Several respondents stated that the corporate office decides about capital improvements and that the local maintenance/office staff (who DNV-KEMA interviewed for this evaluation) had no role in purchasing other than reporting broken equipment. These responses may suggest an opportunity for education of property managers in energy efficiency, as an opportunity to make them better advocates as owners or employees in their organizations.

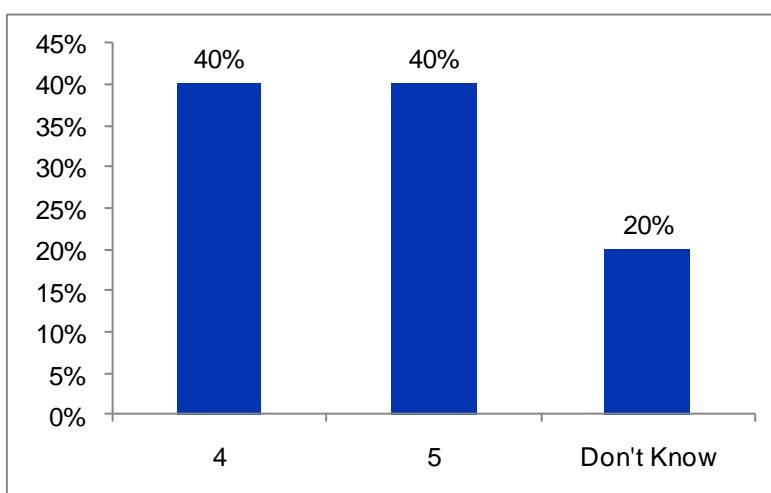
3.8.2.5 Satisfaction

We asked the participants about their satisfaction with various aspects of the EU MF program as well as their satisfaction with the program as a whole. This section discusses their responses to these satisfaction questions.

3.8.2.5.1 Satisfaction with the Installation Process

We asked the program participants to rate their satisfaction with the process of getting the energy-efficient equipment installed. We told them to use a satisfaction rating scale where five indicated “very satisfied” and one indicated “very dissatisfied.” Figure 3-68 shows their responses. The average satisfaction rating was 4.5 on the five-point scale. All respondents gave satisfied (4 or 5) rating, which is an improvement over 2011 when two respondents gave “very dissatisfied” responses. Our rule of thumb, based on based on may program evaluations, is that satisfaction ratings below 80 percent (rating of 4) for a program are cause for concern.

Figure 3-68. Satisfaction with the Installation Process



In addition to asking participants to provide a satisfaction rating for the installation process, we also asked them an open-ended question: “How did the process of installing the energy efficiency measures go?”



The responses we received told us that the customers were most concerned about the pace of installation. Only one respondent gave a negative comment, which was that the process was slow, while several were pleased that it went quickly.

3.8.2.5.2 Satisfaction with the Installed Measures

While we did not ask the participants to provide a numerical satisfaction rating for the installed equipment, we did receive feedback on the installed equipment from their responses to various open-ended questions. The only comment, positive or otherwise, was from one customer who complained that the thermostat batteries burned out very quickly. When asked whether the MF program measures were still installed, respondents all stated something to the effect of, “as far as I know.”

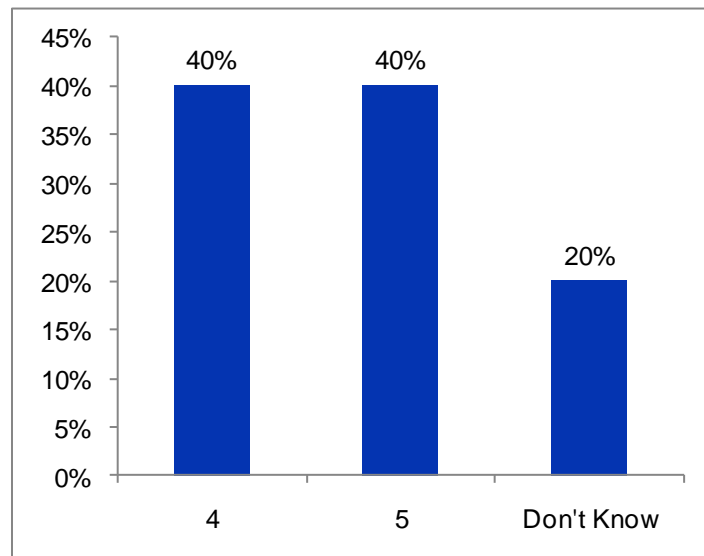
3.8.2.5.3 Satisfaction with the Program Paperwork

We asked the participating multifamily property managers/owners whether they had filled out any paperwork to participate in the program. All respondents said that they did not fill out any paperwork, though two said that their corporate office may have.

3.8.2.5.4 Overall Program Satisfaction

Finally we had the participants provide satisfaction ratings for the overall program. Once again we told them to use a satisfaction rating scale where five indicated “very satisfied” and one indicated “very dissatisfied.” Figure 3-69 shows that seventy percent of them were satisfied (4 or 5 on the scale) with the overall program. As noted above, we do not believe this level of satisfaction for a program indicates a cause for concern.

Figure 3-69. Satisfaction with the Program Overall





3.8.3 Tracking Data Review

As part of the impact evaluation, DNV KEMA performed a tracking database review. We found agreement between the applications, the tracking data, and the customer responses for all of the projects reviewed.

4. Commercial and Industrial Program

4.1 Summary of Findings

The C&I Programs underwent a major administration change in 2012. EU brought the program administration in house rather than engaging a subcontractor. According to interviews with program administrators, this resulted in an overhaul of the program's approaches, an increased emphasis on custom measures, personal outreach and relationship building, and an expanded direct install program that operated heavily in the hospitality sector.

In the second phase of the EU/EO C&I program evaluation we compared the survey responses of the 2012 participants to those of the 2011 and 2010 participants.

- *Firmographics:* The largest firmographic difference was a tenfold increase in the number of hotel/motel respondents this year over the previous two years. The share of industrial or manufacturing respondents decreased by almost the same amount as hotel/motel increased, suggesting a shift from the industrial sector to the hospitality sector. This shift is probably due to the increased emphasis on the direct install program this year.
- *How participants heard about the program:* The share of respondents who reported hearing about the program from the utilities or the program itself increased this year. At the same time, the share of respondents who said they heard about it from contractors, vendors, or suppliers decreased. This shift is probably due to the program administration moving in house and the increased outreach efforts by the program energy advisors.
- *Motivations for doing EE projects:* Specific reasons for doing energy efficiency projects increased across the board. Planned maintenance and renovation increased the most, suggesting that businesses may be starting to recover from the recession and re-investing in capital improvements.
- *EE decision-making:* Respondents in 2012 were more likely to have formal energy efficiency requirements and less likely to have informal guidelines. It is unclear whether this shift is due to the different mix of economic activity respondents originated from or an overall shift in the market where companies are formalizing energy efficiency requirements.
- *Program attribution:* Detailed attribution results are provided in the impact report. DNV KEMA reports two indirect attribution measures in this report. Those measures had mixed results. One suggests that attribution should have increased; the other suggests it should have decreased.
- *Program satisfaction:* satisfaction levels with all individual program characteristics decreased in 2012. However, satisfaction with the program as a whole stayed the same in 2012. It is unclear



how overall satisfaction would remain unchanged when satisfaction with all individual program components decreased. In general, it appears that companies with energy managers are more satisfied with the program than those without energy managers. It may be that companies with energy managers have more accurate expectations of the program or do a better job navigating it than companies without energy managers.

4.2 Program Description

The Commercial and Industrial (C&I) programs include the C&I Prescriptive Program, the C&I Custom Program, the C&I New Construction Program, and the C&I RFP Program. The C&I Program is the largest program in the MCAAA portfolio and it provides incentives to customers for installing high efficiency measures in commercial or industrial facilities. The prescriptive measures offered in the C&I Programs include:

- CFL bulbs;
- T8 lamps and fixtures;
- Motion sensors;
- HVAC equipment;
- Fans/pumps/drives;
- Water heaters;
- Refrigeration;
- Food service equipment; and
- Controls.

EU implemented several major changes to the C&I program in 2012. Program implementation is no longer subcontracted with Franklin Energy; rather, it is being done by CLEARResult with assistance from the consulting firm Enviser. Based on interviews with program administrators, EU implemented this change to improve customer service and relations, increase the EU name recognition, and to improve the consistency of savings realization throughout the year.

The largest change to the C&I program design in 2012 included:

- Program administrators reported that they tried to focus on more custom programs than in past program years. They focused more on industrial customers and comprehensive projects.
- The addition of direct install measures such as CFLs, faucet aerators, pre-rinse sprayers, and pipe wrap for hotels and motels.
- The program has also begun offering Farm Services incentives through the C&I program.

According to interviews with program administrators, EU engaged in several strategies to identify energy saving projects. EU encouraged their utility members to send bill stuffers or direct mail flyers advertising



the commercial programs. The energy advisors hired by the program tried to form more personal relationships with customers and utility representatives. The energy advisors also occasionally engaged in cold-calling to generate leads.

4.3 Methodology

CLEAResult provided DNV KEMA with a sample population of 109 program participants as of August 31, 2012. For the 74 participants who installed only prescriptive measures, DNV KEMA contracted Opinion Search Inc. (OS) to conduct computer-aided telephone interviews. OS completed interviews with 43 participants in November and December 2011. For the 35 participants who installed custom measures, KEMA engineers conducted telephone interviews and site visits. DNV KEMA completed interviews with a total of 27 participants. This was a final response rate of 75 percent, which is comparable to the response rate achieved last year. Phone numbers were called at least eight times over at least two weeks before being considered unreachable.

Sample Description	Number	Percent
Starting Sample	109	
Onsite Engineering - Completed	27	
Onsite Engineering - Refused	8	
Sample Used	74	
Invalid Sample	17	
Sample Used	57	
Complete	43	75%
Contacted - Not Eligible	6	11%
Refused	2	4%
Contacted - Not Complete	3	5%
Dialed - Not Contacted	3	5%

The surveys covered the following topics:

- Sources of information,
- Energy efficiency decision making processes,
- Installation of the measure,
- Previous experience with energy efficient equipment,
- Satisfaction,
- Suggestions for program improvements, and
- Firmographics.



Some of the survey questions applied to the participant level. Other survey questions were at the individual rebated measure level. The survey respondents installed a total of 185 rebated measures²², or about three each. Some survey questions applied to the project or measure group level.

4.3.1 Characterization of the participants

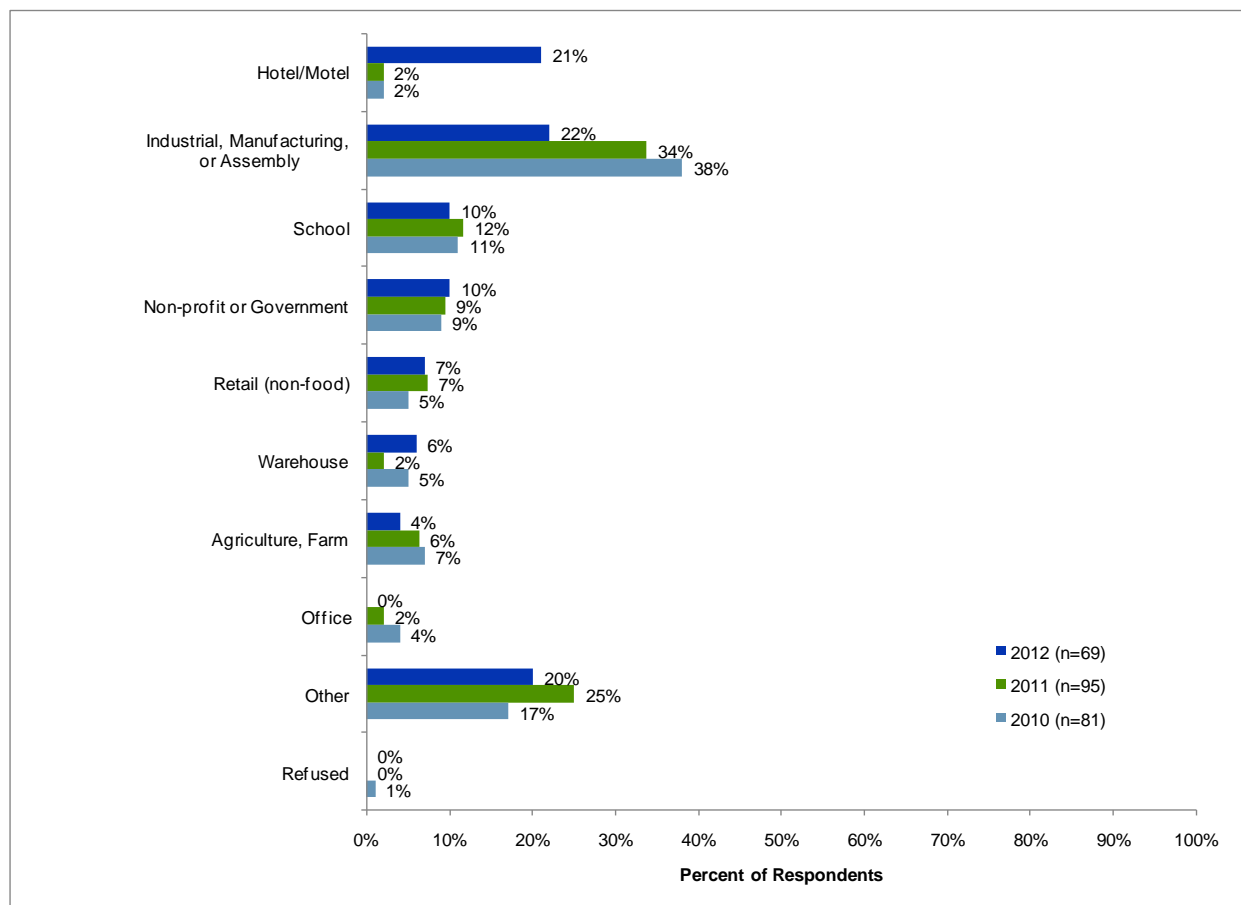
The survey asked several questions to better characterize the locations where the rebated equipment was installed. These questions included the primary economic activity, ownership, whether energy costs were included in leases, square footage, and number of full-time equivalent employees (FTEs) at the location where the equipment was installed.

4.3.1.1 Principal Economic Activity

There were two major differences in the principal economic activity reported by 2012 survey respondents relative to 2011 participants. First, hotel, motels, and lodging constituted a much larger portion of the respondents this year than in previous years. In 2012, hotel/motels made up about 21 percent of the respondents. In previous years, they made up about two percent of the respondents. Secondly, despite program administrators reporting an emphasis on industrial customers, the share of respondents who reported industrial or manufacturing processes as their primary economic activity decreased from about 34 percent in 2011 to about 22 percent in 2012 (Figure 4-1).

²² Note, DNV KEMA considers measures such as CFLs, faucet aerators, and showerheads into a single “measure” even when a participant installed many of them.

Figure 4-1. Principal Economic Activity



Note: In 2010 and 2011, “other” included hotel/motel. For this figure, 2010 and 2011 hotel/motel responses were taken out of “other” and placed in their own category for comparison purposes.

Note: School includes “school” and “college/university”.

Note: Other includes: grocery store, convenience store, health care / hospital, and unspecified other.

The increase in hotel/motel participation is probably due to the addition of the direct install subprogram in 2012. Hotel/motel respondents were more likely to credit EU or their utility with the project impetus (58%) than other sources (internal: 13%; contractor/vendor/supplier: 18%; other: 20%).

Highlights of participant responses to other firmographic questions are summarized below:

- Owning/leasing space:* Over three-fourths (83% in 2012, 84% in 2011, 85% in 2010) of participants said they own all of the space they occupy. A smaller share (13% in 2012, 14% in 2011, 10% in 2010) said they lease all of the space they occupy. The remainder own some space and lease some space or did not answer the question. Few if any lessees said that energy costs are included in their lease (6% in 2012, 5% in 2011, none in 2010).



- *Building size:* About one fourth of 2012 respondents did not know how large their facility was. Of the respondents that provided an answer, the median facility size was 54,000 square feet. This was an increase over the median in 2011 of 30,000 square feet. This difference suggests that the program administrators successfully targeted larger facilities in 2012. (As in previous years, the square footage distribution was highly skewed, as demonstrated by large discrepancies between the mean and median. The average reported facility size was just under 367,000 square feet, which was still a substantial increase over the 2011 average of about 202,000 square feet.)
- *Number of employees:* The 2012 survey respondents reported a median number of employees of 10 and an average of about 136. Despite the increased facility size of the 2012 respondents in terms of square feet, this was a decrease in number of employees relative to the 2011 respondents (2011 median = 24, average = 165).

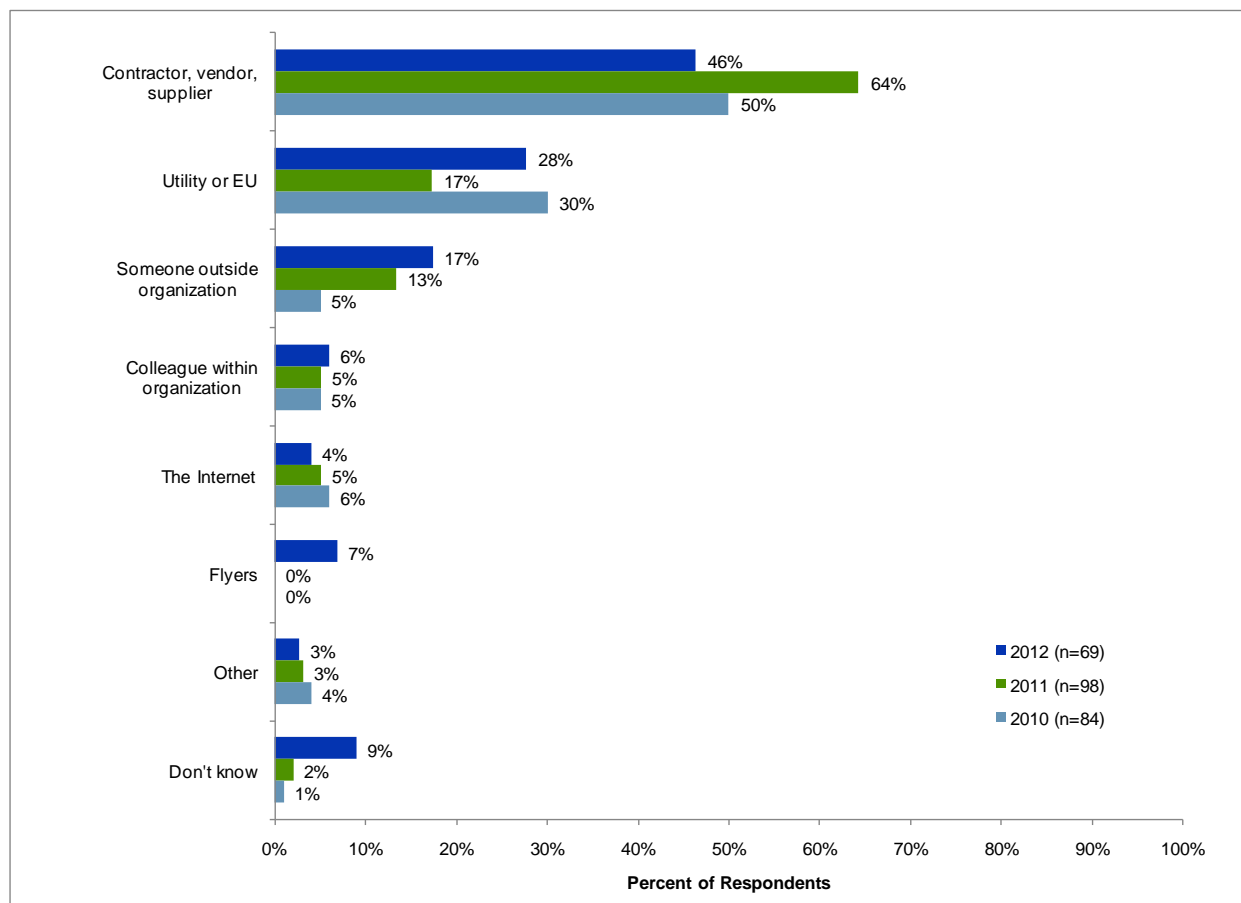
4.3.2 Sources of Information

The survey asked how respondents heard about the program. As was true in previous years, “contractor, vendor, supplier”, and the “utility or EU” were the most commonly-mentioned sources of program information (Figure 4-2). Significant changes from 2011 included:

- A decrease for contractor, vendors, and suppliers from 64 to 46 percent,
- Utility or EU increased from 17 to 28 percent, and
- Flyers were a new category mentioned in 2012 (DNV KEMA did not account for them separately in previous years).

The first change is a little surprising considering the program administrators reported an increased emphasis on trade allies in 2012. However, these losses might be due to the gains for Utility or EU and Flyers. The gains for Utility or EU are probably due to the program administration moving in-house in 2012 and the recruitment efforts from energy advisors. Program administrators also reported an increased use of bill stuffers and flyers this year, so that program change probably accounts for Flyers emerging as an important category in 2012.

Figure 4-2. Sources of Information



Note: The total exceeds 100% because respondents were allowed to give multiple responses.

Note: 2010 and 2011 did not include “flyers” as a category separate from “other”.

Companies that received incentives for custom measures and those who received incentives for eight or more measures were more likely than those who only did prescriptive or fewer than eight measures to report they found out about the program from a contractor, vendor, or supplier (62% vs. 30%). Program administrators reported that they tried to increase their emphasis on custom projects and trade ally relations this year. One explanation for this finding is that these program changes successfully encouraged trade allies to promote the program.

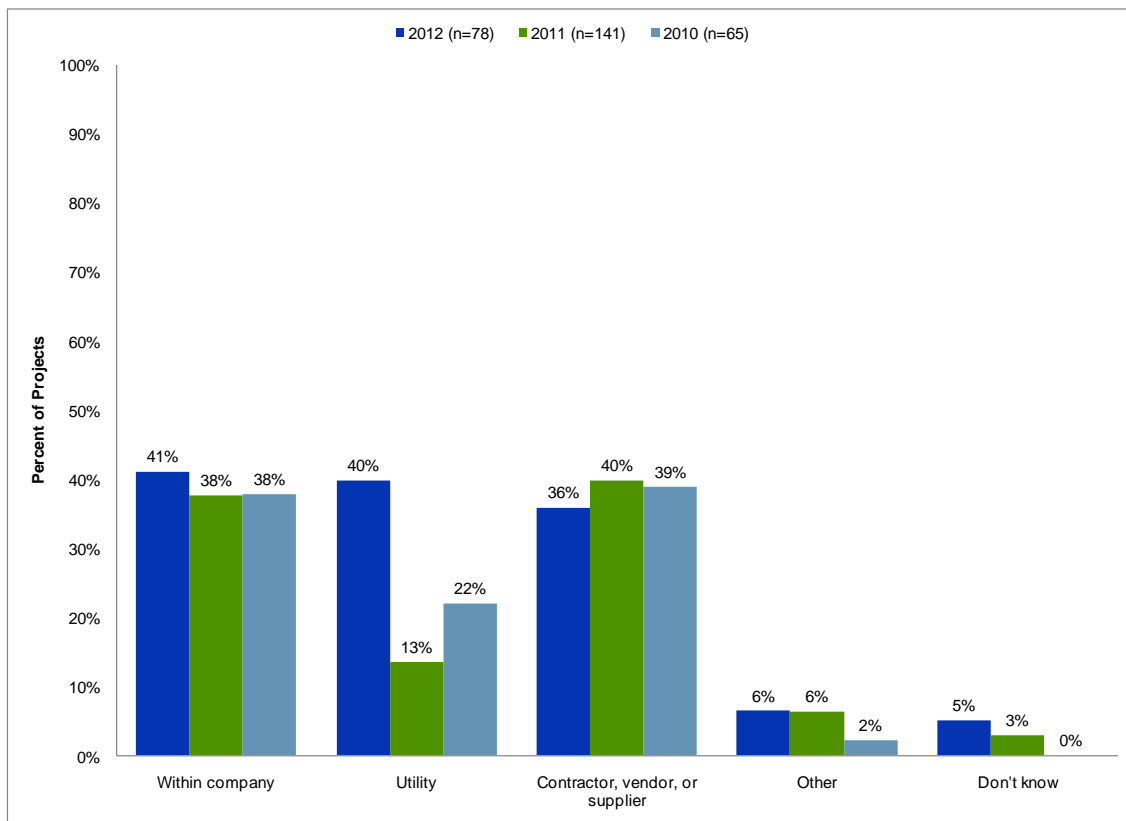
Another potential explanation for this finding was an anomaly in the data: all of the hotel/motels fell into the non-custom and fewer than eight measures category. Considering the hotel/motels were more likely to participate in the direct install program and made up about 20 percent of the overall sample, it is possible that the difference between the two groups was caused by the hotels/motels reporting contractors, vendors, or suppliers less often than other types of companies.



For respondents who said they heard about the program through a contractor or vendor, the survey asked if they had completed any previous projects with that contractor or vendor. In 2012, about two-thirds (64%) of the respondents who said they heard about the program from a contractor, vendor, or supplier also said that they had completed previous projects with that company. This rate is an increase from 2011, when about half (53%) of the respondents who said they heard about the program from a contractor, vendor, or supplier also said that they had completed previous projects with that company. However, it is also a return to the levels observed in 2010, when 68 percent said they had completed previous projects.

The survey asked respondents where the initial idea for the project came from. Figure 4-3 shows that the proportion of ideas originating from within the company (41%), the utility (40%), or contractors (36%) were about the same. The share of idea credit going to the utilities increased significantly in 2012 relative to previous years. Figure 4-3 shows the proportion of credit across all project types, and most of the increase for the utilities resulted from very high credit given to the utilities for the faucet aerator (79%) and showerhead (64%) projects. The new direct install program for 2012 is probably the most responsible for these measures and the resulting credit to the utilities for the project ideas.

Figure 4-3. Sources of Project Ideas



Note: The total exceeds 100% because respondents were allowed to give multiple responses.

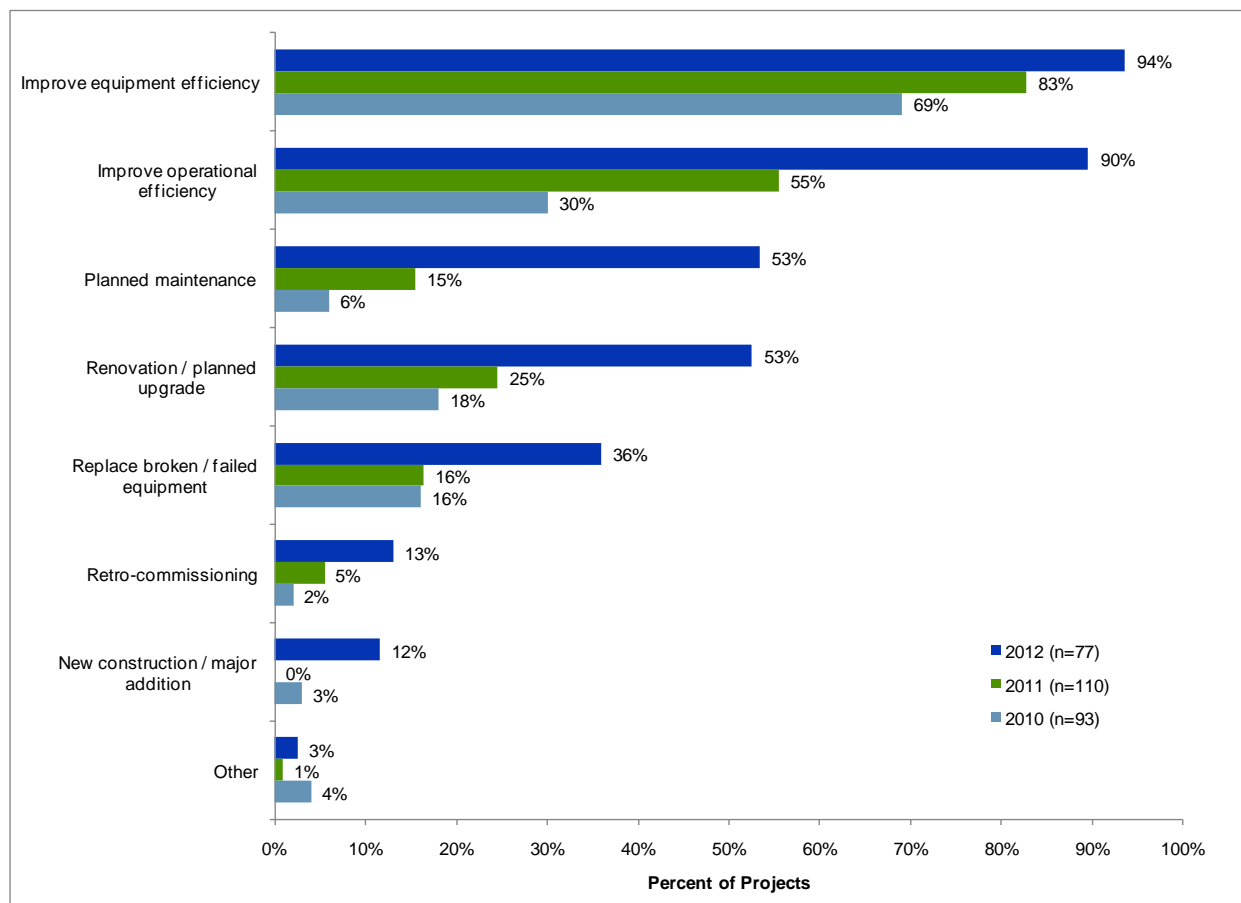


The survey also asked respondents why they undertook the project. Respondents were provided with choices including: improve equipment efficiency, improve operational efficiency, renovation or planned upgrade, replace broken or failed equipment, planned maintenance, part of a retro-commissioning project, and new construction or major addition. Improving equipment efficiency (94%) and improving operational efficiency (90%) were the most common answers as in past years (Figure 4-4).

Relative to the last two years, all reasons were more common, and in particular, the reasons not related to equipment or operational efficiency increased significantly in 2012. Some of the increases in non-efficiency related reasons were due to the projects done under the direct install program (CFLs, faucet aerators, showerheads, and pipe wrap). Respondents were more likely to say the reason for those types of projects were planned maintenance or renovations than for the non-direct install projects. However, the non-efficiency reasons for implementing the projects for the non-direct install projects were still significantly higher in 2012 than previous years.

Another possible cause for this change is that the economy may finally be starting to pick up after several years of recession, and businesses are starting to make capital investments again. As will be shown later, fewer respondents said they were affected by the recession this year than in the previous two evaluations. In past evaluations, the majority of the respondents said they were affected by the recession and that the effect of the recession was to curtail their equipment purchases. Related to this, it could be that businesses have been putting off upgrades for the last several years, and their equipment has gotten to the point where they cannot continue to repair it and have to replace it.

Figure 4-4. Reason for Project



Note: The total exceeds 100% because respondents were allowed to give multiple responses.

4.3.3 Energy Efficiency Decision-making

The survey asked a series of questions to assess the decision-making policies and guidelines in place at the respondents' companies. The results in 2012 did not differ very much from the answers given in previous years (Figure 4-5). Relative to previous years, formal requirements for energy efficiency decision making increased, while informal guidelines for decision making decreased by about same amount. This suggests that companies with informal guidelines in previous years may now be formalizing those guidelines. The share of companies with energy managers was about the same as the previous two years.

The surveys asked follow up questions to try to determine the specific formal requirements and informal guidelines companies had. Specific formal requirements included the following:

- Look for energy efficient models (reported by 58% of respondents with formal requirements),
- Look at payback periods or return on investment (42%), and

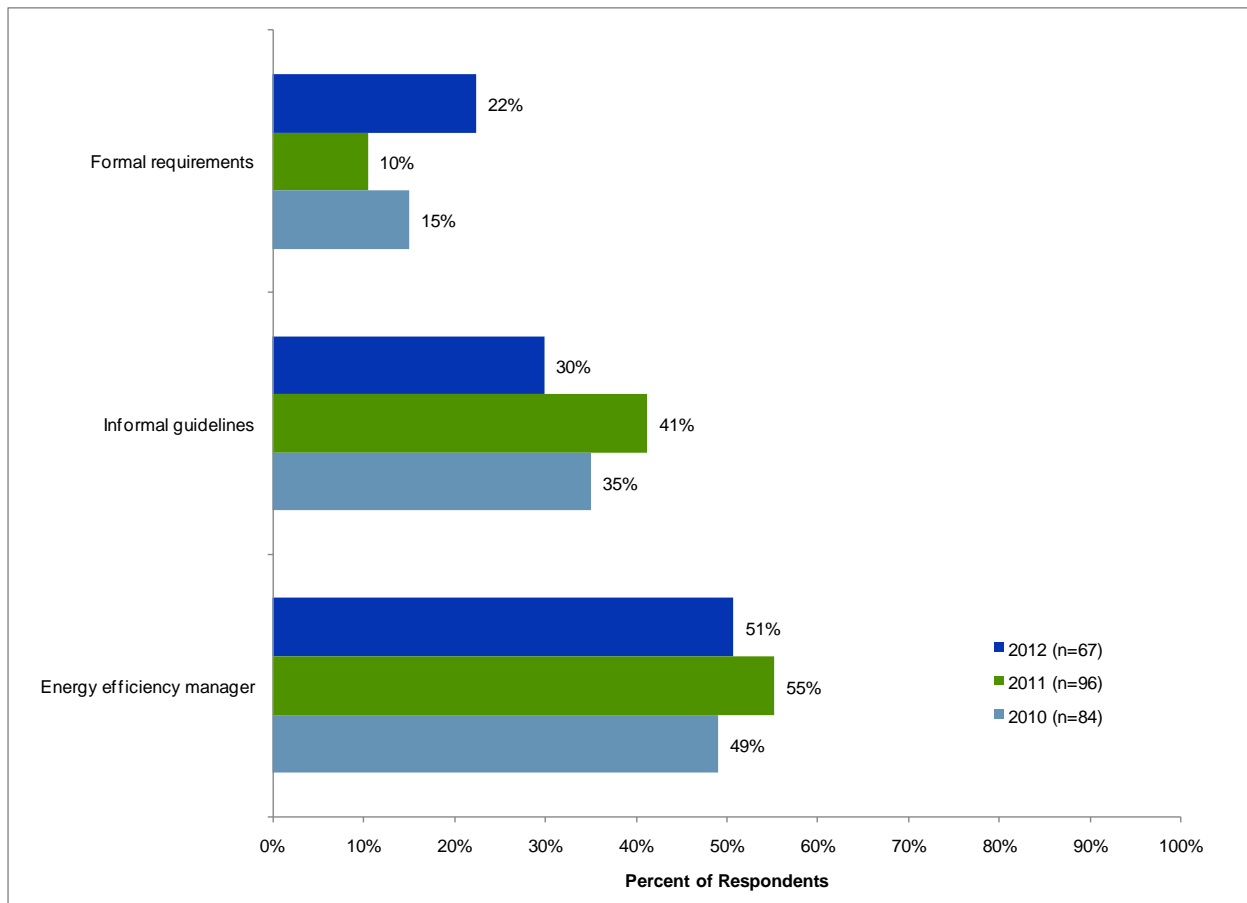


- Save money or get good deals(26%).

Specific informal guidelines included the following:

- Look for energy efficient models (reported by 43% of companies with informal guidelines),
- Look to save money or get deals (35%), and
- Performing specific savings calculations (26%).

Figure 4-5. Energy Efficiency Decision-making Component



There were several statistically significant differences in these policies based on company firmographics:

- Companies who received larger incentives (\$1201 or more; 30%) were more likely than those who received smaller incentives (\$400 or less; 8%) to report having formal guidelines. This difference is likely an effect of company size – larger companies are probably more likely to have formal guidelines and also more likely to receive larger rebates.
- Companies that completed custom projects or received incentives for eight or more measures were more likely than those with only prescriptive measure or fewer than eight measures to report having informal guidelines (46% vs. 21%) and energy managers (67% vs. 42%). These

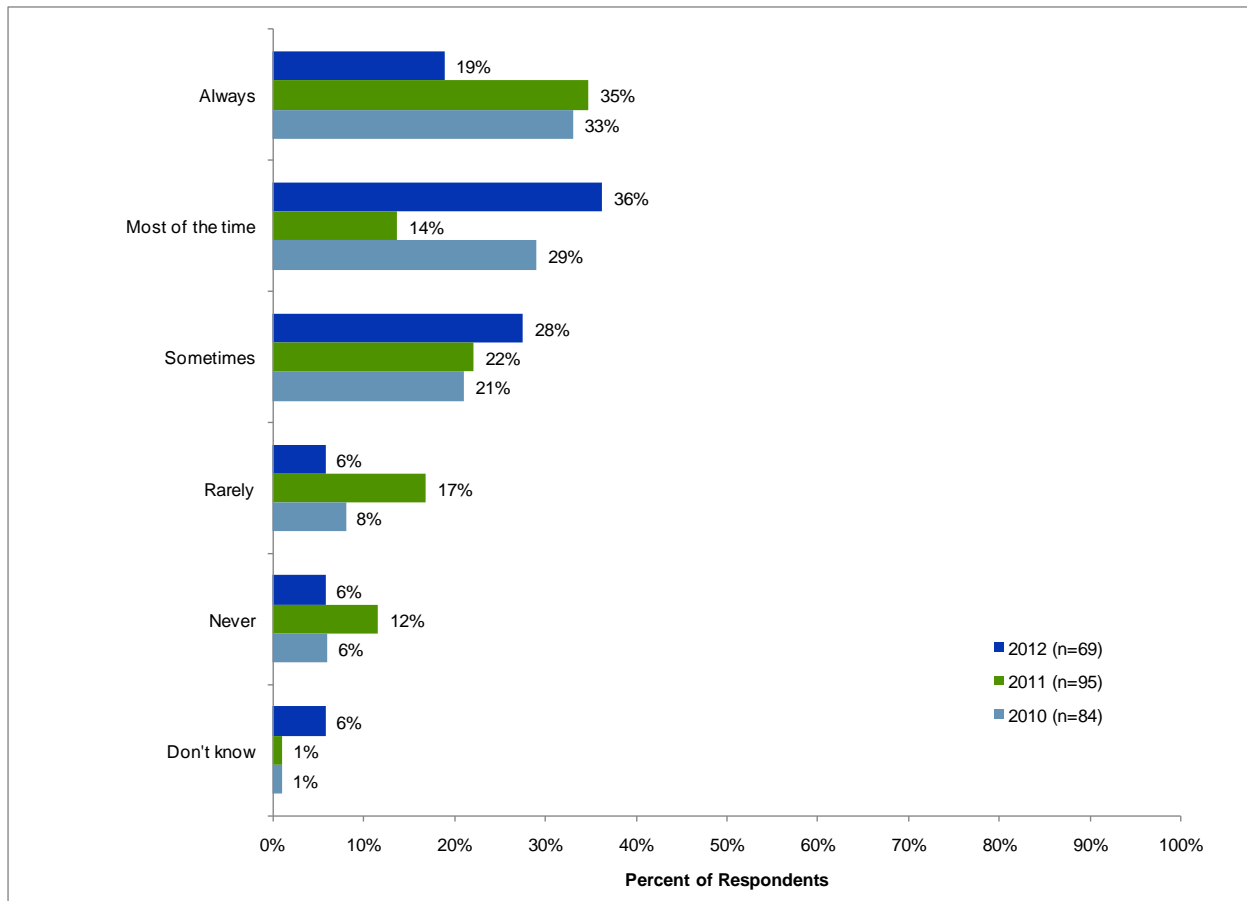


differences are also likely due to company size driving both the measures and the existence of guidelines/energy managers.

- Companies who were affected by the recession (44%) were more likely than those who said they were not affected by the recession (17%) to have informal guidelines.
- Companies who were completely satisfied with the program (71%) were more likely than those not completely satisfied (40%) to report having an energy manager. This finding probably reflects that companies with energy managers have more realistic expectations for the program or the presence of an energy manager makes them more capable of taking full advantage of the program.

The survey asked respondents how frequently their company considers entire life-cycle costs, including fuel use, when purchasing equipment. Choices included “never,” “rarely,” “sometimes,” “most of the time,” and “always.” The 2012 responses differed from those given in previous years (Figure 4-6). Overall, there was a shift toward the middle of the scale (most of the time and sometimes) and away from the endpoints. The sum of the top two responses was about the same in 2012 than in previous years, but the responses for always decreased while the responses for most of the time increased. The number of rarely and never responses also decreased in 2012. Not surprisingly, companies with energy managers (74%) reported always or most of the time more often than those without energy managers (39%).

Figure 4-6. Frequency of Considering Entire Life-Cycle Costs When Purchasing Equipment

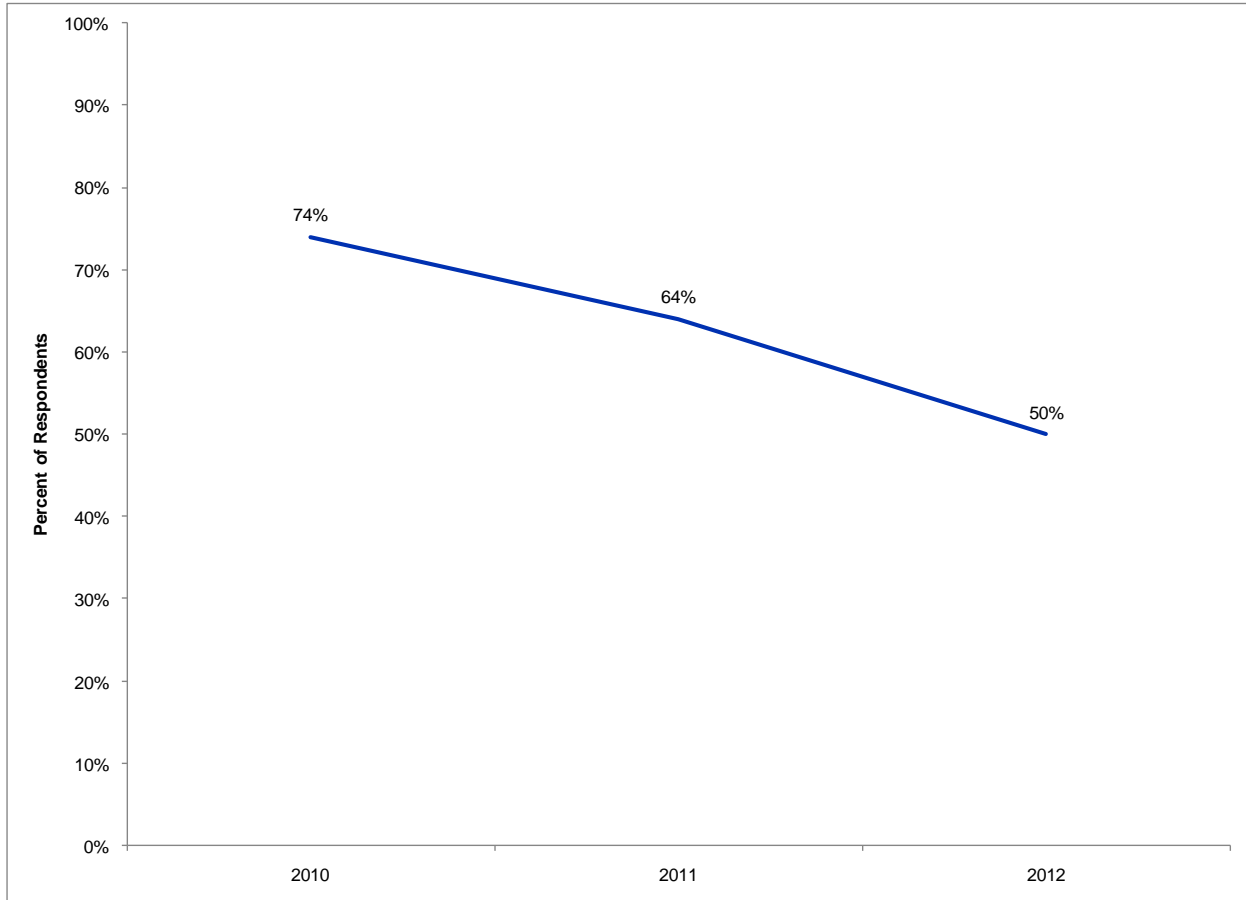


The survey asked respondents if the recent economic downturn affected the way their company makes decisions about the purchase of energy using equipment. Continuing the trend over the last two years, the proportion of respondents who said they were affected by the recession decreased to 50 percent (Figure 4-7).

The survey asked respondents who said they had been affected how the economy affected their equipment purchase and maintenance decisions. About half the respondents who said they were affected by the recession said they did not have enough capital (47%). Other commonly mentioned effects of the recession were to hold off buying equipment (24%), doing more maintenance (24%), and having to consider the budget and affordability more often (18%).



Figure 4-7. Respondents Affected by Recession

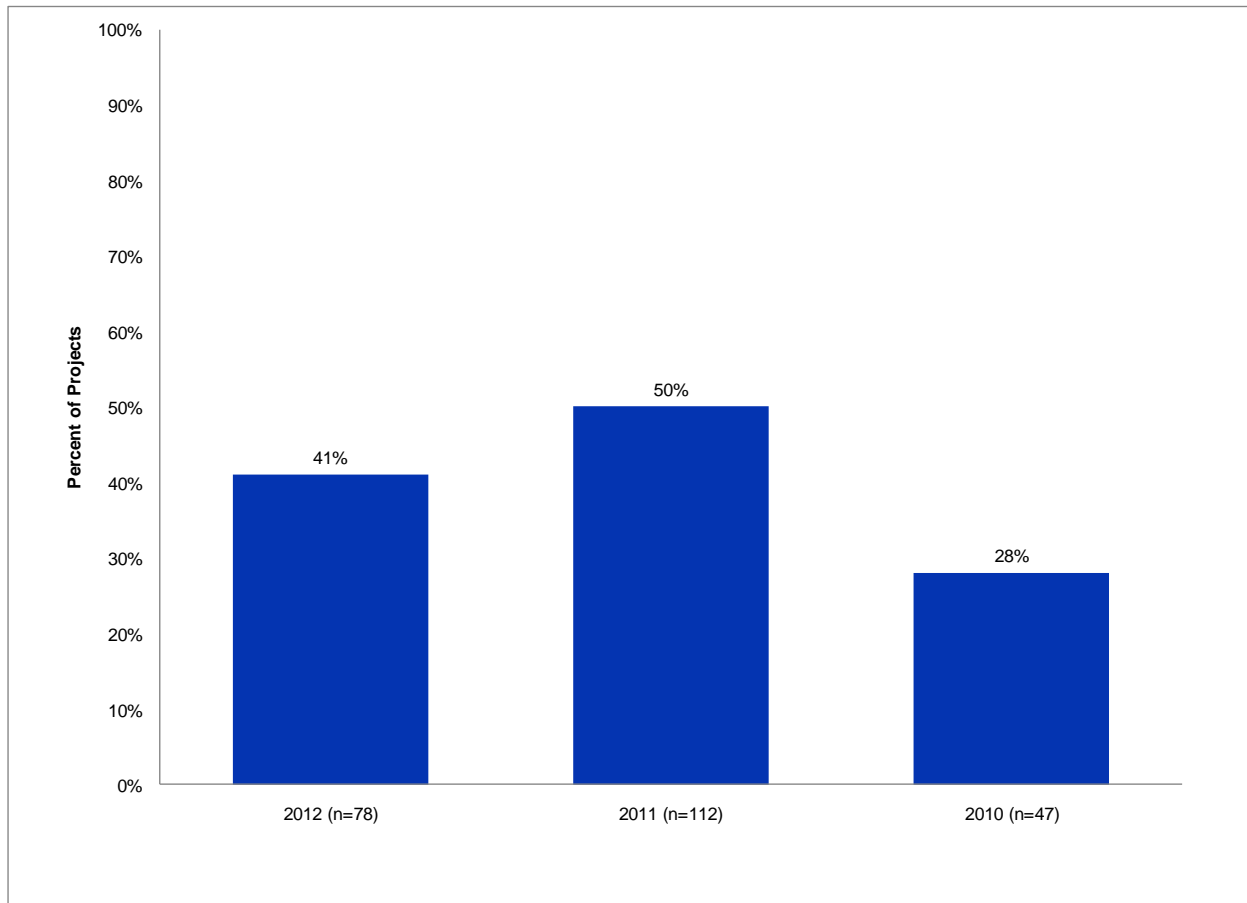


4.3.4 Measure Installation

The survey also asked respondents whether they had previously installed similar energy-efficient measures in any of their other facilities. About one fourth of 2012 respondents said they had a decrease from the previous two years (Figure 4-8). This decrease may have occurred because the program administrators did a better job in 2012 of reaching customers who had never participated before. Interviews with program administrators revealed that they emphasized better outreach in 2012 relative to previous years.



Figure 4-8. Previously Installed Similar Measures



4.3.5 Program Attribution

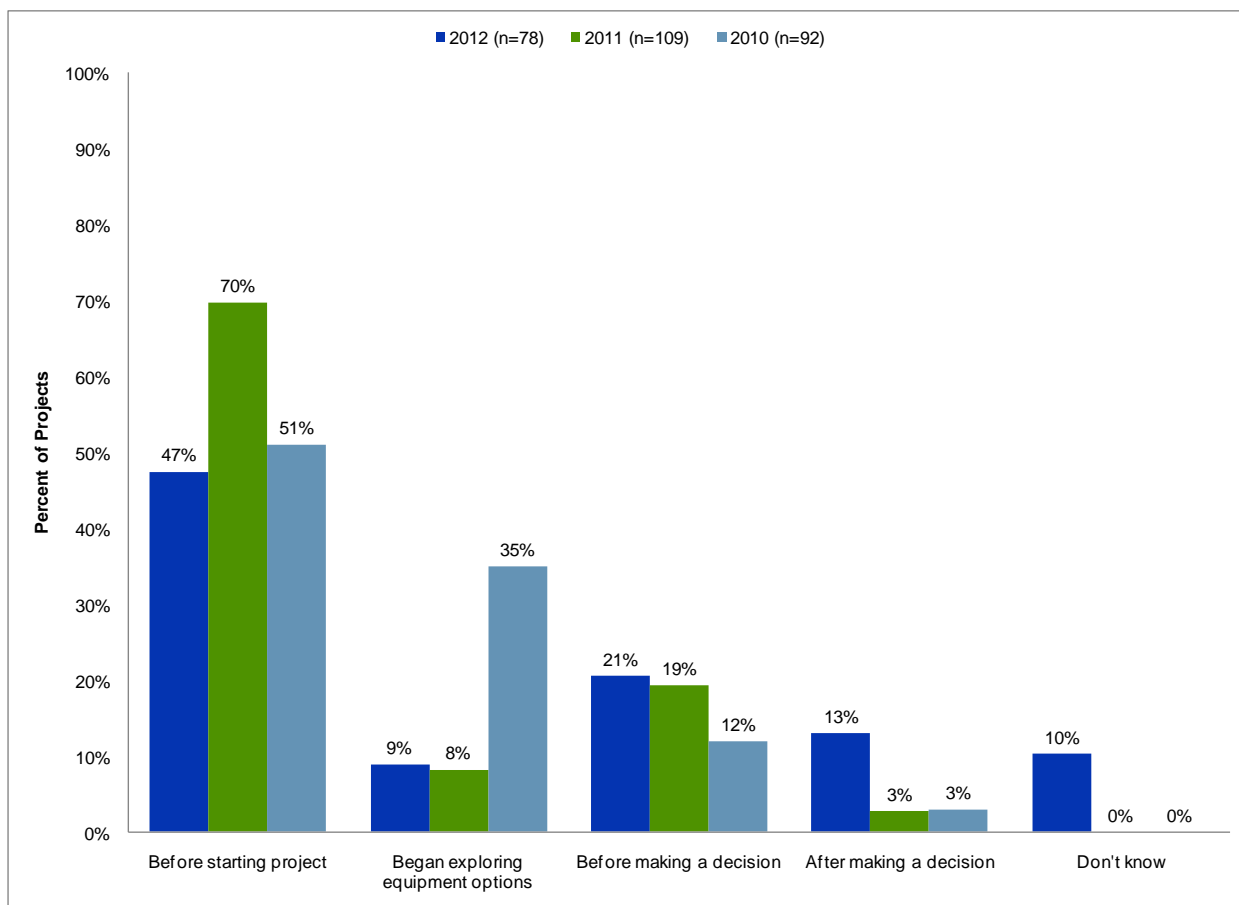
A full net-to-gross analysis is included in the impact evaluation report. However, there were a few process-related questions asked in the survey that shed light on the question of attribution. The survey asked respondents whether they made plans for the equipment purchase or project before hearing about the program incentives. Respondents in 2012 were less likely to say they heard about the program before making a decision and more likely to hear about the program after they made a decision (Figure 4-9). This pattern would suggest a decrease in program attribution for 2012. A decrease in program attribution would also be consistent with the previously described increase in formal requirements for energy efficient equipment.

However, there were several differences in when participants reported hearing about the program depending on measure type. Customers whose projects included measures that were more likely to fall into the custom program (motors, refrigeration, and other) all reported they heard about the program before the project started. Boiler tune-ups and showerheads were the two measures that had the highest



percentage of respondents saying they heard about the program after deciding on the measure. The result for boiler tune-ups may be reflective of planned maintenance and contractors informing companies of the rebates while they were doing the work. The showerhead finding might be caused by companies planning to install showerheads for water conservation purposes and finding out about the rebates afterward. It is also possible that showerhead recipients participated in the direct install program, but to get measures other than the showerheads, and had the installer put the showerheads in after they knew they were an option.

Figure 4-9. When Respondent Heard about Program

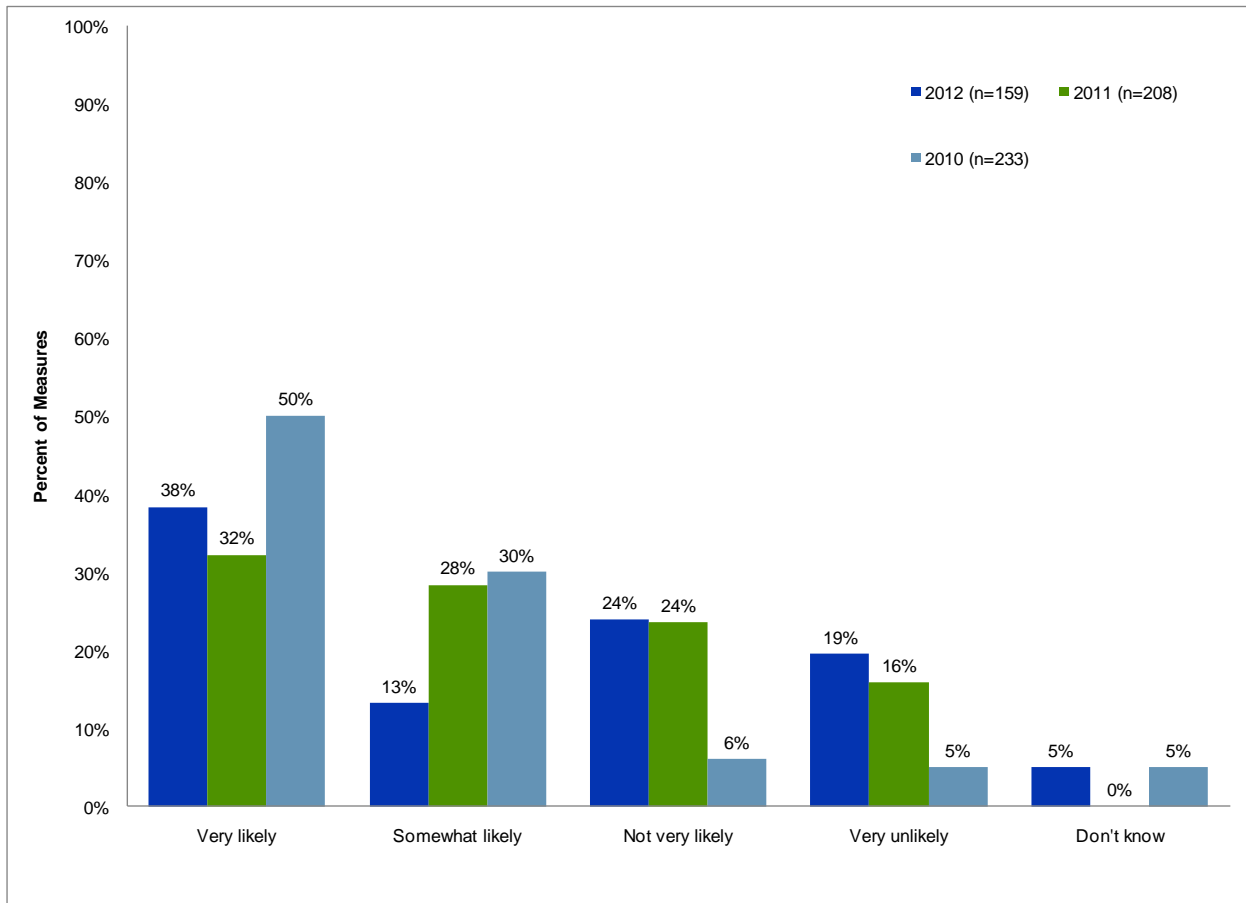


The survey asked respondents how likely it was that they would have installed each measure without program incentives or assistance. Choices included “very likely,” “somewhat likely,” “not very likely,” and “very unlikely.” The likelihood that respondents would have installed the measures without the program decreased a little more in 2012, but not as much as between 2010 and 2011 (Figure 4-10).

This pattern suggests that program attribution should have increased slightly in 2012. However, it is somewhat at odds with the previous finding that respondents tended to find out about the program later in their project cycles in 2012, which would tend to lower attribution.



Figure 4-10. Likelihood of Installing Measure without Program



4.3.6 Satisfaction

The survey asked respondents how satisfied they were with several characteristics of the program, including the rebated equipment, the dollar amount of the rebate, the timeliness of the rebate payment, program applications and paperwork, program requirements, interactions with program staff, and the rebate program as a whole. Respondents answered each question on a five-point scale where five indicated “very satisfied” and one meant “very dissatisfied.” Table 4-1 shows the full range of responses of the 2011 participants.



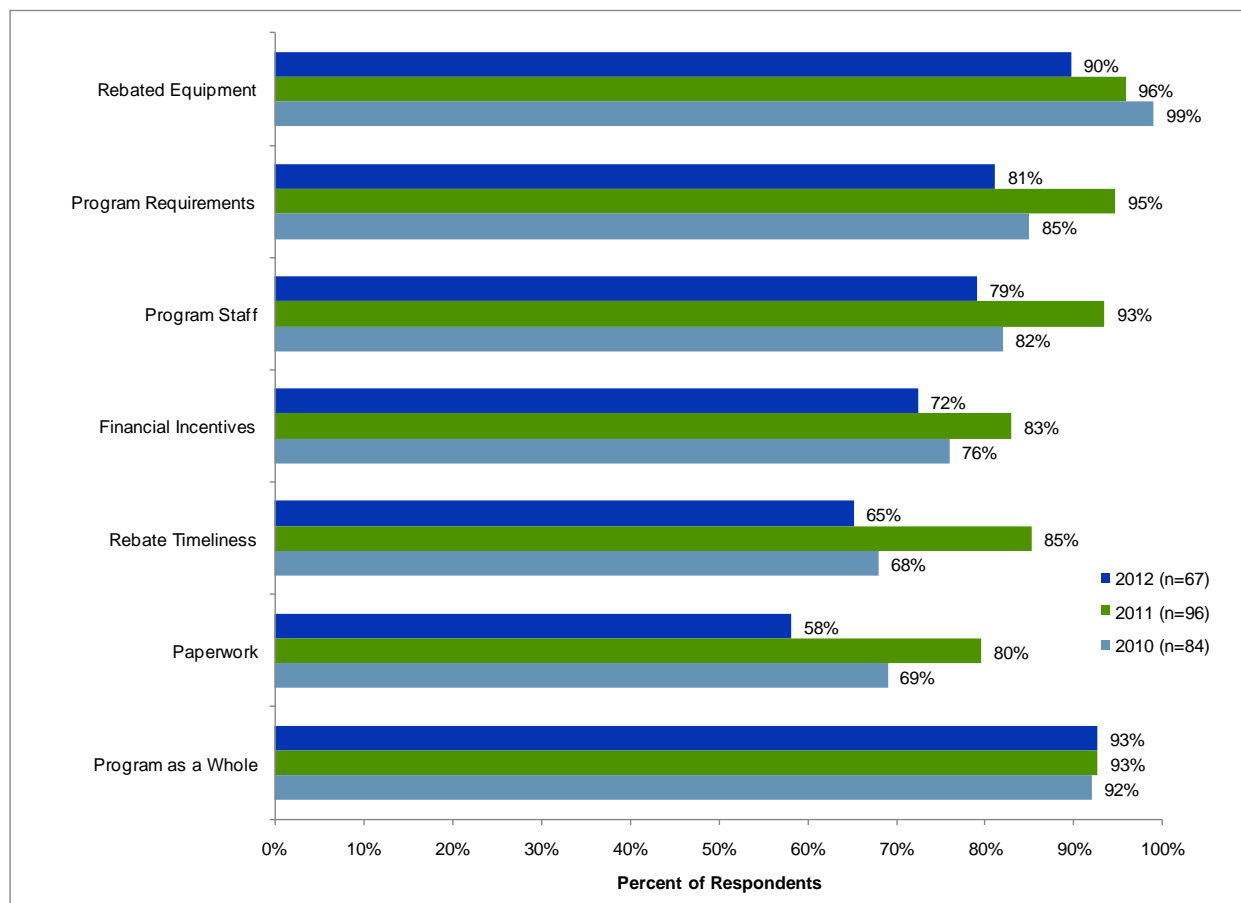
Table 4-1. 2011 Participant Satisfaction with Program Characteristics

	Program Characteristic							
	Rebated Equipment	Program Requirements	Program Staff	Financial Incentives	Paperwork	Rebate Timeliness	Contractor	Program as a Whole
Number of responses	68	69	67	69	67	69	36	68
5 - Very Satisfied	71%	51%	58%	43%	33%	41%	78%	57%
4	19%	30%	21%	29%	25%	25%	17%	35%
3	7%	7%	4%	13%	21%	13%	3%	6%
2	1%	1%	0%	4%	3%	4%	0%	1%
1 - Very Dissatisfied	1%	0%	1%	4%	4%	6%	0%	0%
Don't Know / Refused	0%	10%	15%	6%	13%	12%	3%	0%

Figure 4-11 shows that satisfaction levels with specific program characteristics and the program overall. DNV KEMA usually considers ratings on measures like these above 90 percent to be good, 80 to 90 percent to be acceptable, and less than 80 percent to indicate a need for improvement.

As can be seen in Figure 4-11, satisfaction with every specific program characteristic decreased in 2012, in most cases to levels that DNV KEMA typically considers needing improvement. However, satisfaction with the program as a whole stayed the same in 2012, at a “good” level of 93 percent. This is an odd pattern of results, and it is unclear what could have caused it. There were two major changes in 2012 – bringing program administration in house, and an increased use of direct installs particularly in the hospitality sector. It is possible one or both of these changes caused this pattern, but any factor that adversely affects all of the specific program characteristics should also affect the overall rating.

Figure 4-11. Percent Satisfied with Program Characteristics



There were several statistically significant differences within most of the categories based on various firmographic characteristics:

- *Financial incentives:* Participants whose project ideas came from an internal source (83%) or a contractor, vendor or supplier (91%) were more likely than those whose project ideas came from the utilities (79%) to be satisfied (4 or 5 on the five-point scale) with the program’s financial incentives.
- *Timeliness of rebate payment:*
 - Respondents whose project impetus came from a contractor, vendor, or supplier (82%) were more likely to say they were satisfied with the timeliness of the rebate payment than those whose project impetus came from the utility or program (58%). This finding could reflect that contractors do a better job of setting customer expectations about the rebate payments than the utilities. It is also possible that the contractors assume the rebates will come through and provide their services at reduced costs, and thus carry the burden of the unpaid rebates.



- Respondents whose company has an energy manager (79%) were more likely to say they were satisfied with the timeliness of the rebate payment than those without an energy manager (52%). This probably indicates better expectations or better navigation of the program requirements from companies with energy managers.
- *Program paperwork:*
 - Respondents who received fewer than eight prescriptive measures (67%) were more likely to say they were satisfied with the program paperwork than those who received custom measures or eight or more measures (42%). Some of this difference may be accounted for in the more complex paperwork required of the custom program because it requires pre-approval and an engineering review.
- *Program staff:*
 - Respondents who received fewer than eight prescriptive measures (86%) were more likely to say they were satisfied with program staff interactions than those who received custom measures or eight or more measures (67%). This difference may also be related to the pre-approval process and paperwork requirements for the custom program.
 - Respondents with energy managers (88%) were more likely to say they were satisfied with program staff interactions than those without an energy manager (70%).
 - Respondents who said they were affected by the recession (88%) were more likely to say they were satisfied with their program staff interactions than those who were not affected by the recession (71%).

The survey asked respondents why they were less than satisfied with each program characteristic. For most program characteristics, the surveys only collected one or two answers. The exceptions were timeliness of the rebate payments and program paperwork.

- Reasons provided for the timeliness of the rebate program included: it took three months or longer to receive rebate (33%), the rebate was slow (19%), they were not offered a rebate (10%), or other reasons (29%).
- Reasons provided by respondents who were less than satisfied with the paperwork included: it was complicated (36%), it was lengthy (18%), they did not receive their rebate (9%), and other reasons (23%).

The survey also asked respondents if there was anything the program could do to increase participation and if there were any additional technologies the program should cover. The most commonly provided suggestions included: increasing marketing (35%), increasing communication and being more proactive



(33%), and increasing rebate levels (19%). These are similar to the suggestions made last year. Respondent suggestions from previous years which did not appear this year included: making sure the funding did not run out partway through the year, involving the contractors more, and involving the contractors less. It is possible that these suggestions did not appear this year because the program administrators did a better job with them this year.

Suggestions for additional technologies included a wide spectrum of measures. Each of the following measures was suggested by about half of the respondents: compressors, HVAC, insulation, boilers, computers, refrigeration, solar/renewable energy, motors, kitchen equipment, controls/EMS. Manufacturing or custom and laundry equipment were mentioned by about one-third of the respondents.

5. Findings from Nonparticipant Surveys

5.1 Residential Nonparticipant Results

5.1.1 Summary

The following are some highlights from the survey of 2012 MCAAA nonparticipants:

- *Demographic differences:* The nonparticipants' demographics differ from the participants' in the following ways:
 - Nonparticipants were less likely than participants to own their homes, less likely to live in single-family detached homes, more likely to have one or five (or more) residents, were older, were less educated, and had lower incomes.
 - Nonparticipants were less aware of ENERGY STAR, less concerned with reducing household energy consumption, and less concerned with the environment or global warming.
- Awareness of EU programs:
 - About five percent of the households contacted reported that they had participated in at least one energy efficiency program.
 - Forty percent of the 2012 respondents were aware of the EU programs. This is an increase from the 2011 general population survey when 34 percent of the respondents reported awareness of the EU programs.
 - Utility bill stuffers were the main source of program information for those respondents that were aware of any programs.
 - If looking for information on rebate programs, respondents would prefer to get information from the utility itself, either by calling the utility, checking the utility website, or getting information in a bill stuffer or direct mail.
- Reasons for not participating and barriers to energy efficiency participation
 - The main reason respondents did not purchase CFLs more often was that there was currently no need for additional CFLs. This explanation is reinforced by numerous respondents noting that CFLs are long lasting, thus negating the need to purchase additional bulbs.



- The main reason nonparticipant purchasers of larger equipment (clothes washers, water heaters, HVAC equipment, or dishwashers) did not participate in the rebate programs was because the respondents did not know the rebates were available.
- Almost all respondents who purchased larger equipment purchased equipment that was eligible for the rebates they were aware of.
- Appliance/equipment purchases:
 - CFLs:
 - Almost half of nonparticipants (49%) and ENERGY STAR Products (ESP) program participants (46%) tend to buy light bulbs at home improvement or hardware stores or department stores.
 - Not surprisingly considering the EU program design, the ESP program participants were more likely than nonparticipants to purchase their CFLs from utility meetings, offices, or energy fairs (30% vs. 0%),
 - *Clothes washers and dishwashers*: Nonparticipants were more likely to purchase clothes washers or dishwashers from home improvement or hardware stores than ESP program participants, but less likely than ESP participants to buy clothes washers or dishwashers from department stores or big box retailers.
 - *Efficiency level*: Energy efficiency was the most important characteristic for purchasers of clothes washers, water heaters, and HVAC equipment. It was the second most important characteristic for purchasers of dishwashers. However, an ENERGY STAR rating was one of the least important characteristics for all of the larger equipment.
- Market penetration:
 - Fifteen percent of respondents said their home had no CFLs. Sixteen percent said all of their home’s light bulbs were CFLs.
 - Respondents reported a range of their homes’ major energy using equipment being ENERGY STAR rated, varying from around two-thirds for refrigerators (60%) to about one-third for central air conditioners (33%) and dishwashers (32%).

5.1.2 Evaluation Description

In the 2012 evaluation we conducted a general population CATI survey of 782 residential customers in the MCAA service territories. These general population surveys are sometimes informally referred to as “nonparticipant surveys” because unless a utility’s energy efficiency programs are very active, most of the customers who are surveyed through random digit dial methods will turn out to be nonparticipants. In

addition, DNV KEMA screened out program participants during the sample selection and in the initial survey questions.

The general population survey had three primary objectives:

1. *Assessing the effectiveness of the EU program marketing efforts:*
 - a. Whether the demographics of the participating and nonparticipating customers are different;
 - b. Awareness of EU programs;
 - c. How the program-aware nonparticipants heard about the programs;
 - d. Why program-aware nonparticipants did not participate; and
 - e. Where nonparticipants purchase their appliances and other energy-using equipment.
2. *Understanding the barriers to program participation and EE implementation in general.*
3. *Serving as a comparison group for the Residential Appliance Recycling (RAR) program.:* To find out what people would have done with their refrigerator /freezer in the absence of the program, it's best to ask customers who did not participate in the EU RAR program how they disposed of their old refrigerators /freezers This is because participants in the EU programs (which we used as a comparison group in the 2010 evaluation when we did not have a general population survey) may be different (more enviro-friendly, etc.) than the general population and therefore may not be the most ideal comparison group. This comparison is detailed in the Impact Evaluation Report.

5.1.3 Methodology

The Residential General Population survey was intended to gather information about households within the territories of participating EU utilities that had not participated in any of the rebate programs. The utilities could provide contact information for customers who participated in the programs, but not for nonparticipants. To acquire a nonparticipating population base, DNV KEMA contracted Relevate to provide all residential phone numbers for the zip codes within the territories of the EU utilities.

The CATI survey covered the following topics:

- Program awareness;
- Sources of information about energy efficiency programs;
- Recent purchases of energy using equipment;
- Energy efficiency actions taken;
- Energy attitudes; and
- Demographics.



Participants were stratified based on the peninsula (upper, lower) they were in based on zip code. Results are weighted based on the number of participants in the population strata divided by the number of completed surveys.

5.1.4 Characterizing the Nonparticipants

This section describes nonparticipant demographics and knowledge and attitudes. It compares these to the participants. For comparisons to participants, DNV KEMA computed a weighted average of all respondents who answered the same questions in the Appliance Recycling, ENERGY STAR Products, HVAC, Online Audits, and Audit and Weatherization surveys. This section also has a description of the ENERGY STAR-rated equipment nonparticipants reported owning.

5.1.4.1 Demographics

The survey asked several questions about nonparticipants' demographics. Table 5-1 summarizes the results. Relative to participants, nonparticipants were more likely to be older, less likely live in single-family detached homes and to own their own homes, were less educated, and had lower incomes.



Table 5-1. Nonparticipant and Participant Demographics

	Non-participants	Participants	Sig. Difference
Home Ownership	n=782	n=1734	
Own	88%	94%	Yes
Rent	9%	5%	Yes
Home Type	n=782	n=1732	
Single-family detached	83%	88%	Yes
Other	15%	10%	Yes
Number of Residents	n=782	n=1730	
1 Resident	21%	16%	Yes
2 Residents	43%	46%	No
3 Residents	14%	14%	No
4 Residents	10%	10%	No
5+ Residents	8%	11%	Yes
Respondent Age	n=782	n=1734	
18-34	5%	10%	Yes
35-54	25%	30%	Yes
55 or older	70%	52%	Yes
Education	n=782	n=1734	
High school diploma, GED, or less	37%	28%	Yes
Trade or technical school	5%	4%	No
Some college	22%	18%	Yes
Four year college degree	18%	27%	Yes
Some graduate school or advanced degree	10%	19%	Yes
Income	n=782	n=1734	
Less than \$20,000	12%	9%	Yes
\$20,000-\$49,999	24%	31%	Yes
\$50,000-\$74,999	11%	16%	Yes
\$75,000 or more	15%	19%	Yes
Refused	34%	25%	Yes

Note: Reported differences are statistically significant at the 90% confidence level. In most cases, the confidence of the tests was substantially higher due to the large n's.

5.1.4.2 Energy Efficiency Knowledge and Attitudes

The survey also included a battery of questions about nonparticipants' energy efficiency knowledge and attitudes. All participant surveys contained the same battery of questions for comparisons. Table 5-2 shows the comparison. Relative to participants, nonparticipants were less aware of ENERGY STAR, much less concerned with reducing household energy consumption, and less concerned with the environment or global warming.



Table 5-2. Nonparticipant and Participant EE Knowledge/Attitudes

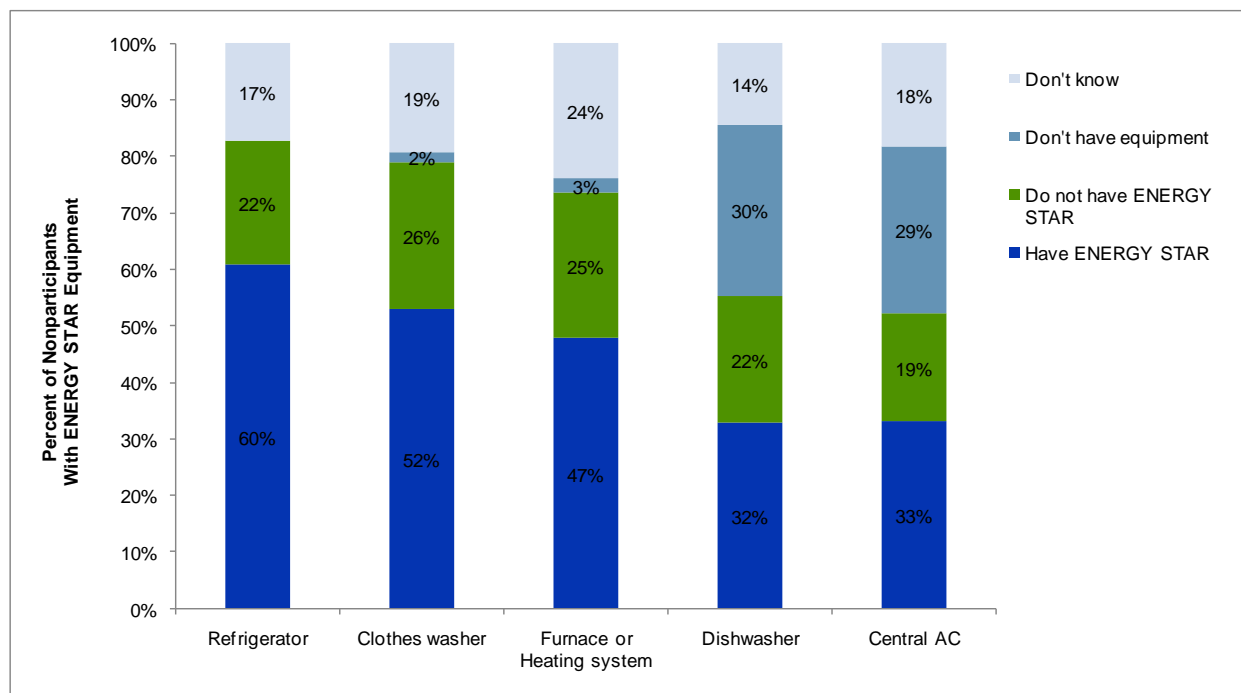
	Nonparticipants	Participants	Sig. Difference
ENERGY STAR Awareness	n=782	n=1406	
Yes	63%	74%	Yes
Concern w/Reducing Household Energy Consumption	n=782	n=1406	
Not at all concerned	16%	5%	Yes
Somewhat concerned	42%	32%	Yes
Very concerned	39%	63%	Yes
Don't know/Refused	4%	1%	Yes
Reason for Concern	n=631	n=1337	
Cost of energy/reduced energy bill	91%	90%	No
Environment/Global warming	22%	27%	Yes
Power availability/reliability	6%	3%	Yes
Dependence on foreign oil	3%	1%	Yes
Other	0%	14%	Yes
Don't know	3%	0%	Yes

Note: Reported differences are statistically significant at the 90% confidence level. In most cases, the confidence of the tests was substantially higher due to the large n's.

5.1.4.3 ENERGY STAR Equipment

The nonparticipant survey included a battery of questions about what type of ENERGY STAR rated equipment the respondents owned. Over half the respondents said they had an ENERGY STAR refrigerator (60%). About half of the respondents said they had an ENERGY STAR clothes washer (52%) or home heating system (47%). About a third said their home's central air conditioner (33%) or dishwasher (32%) were ENERGY STAR rated (Figure 5-1). Compared to 2011, ENERGY STAR appliance share increased for refrigerators (60% vs. 50%), clothes washers (52% vs. 47%), HVAC systems (47% vs. 36%), and central air conditioners (33% vs. 25%, while staying comparable for dishwashers (32% vs. 34%). Note that DNV KEMA typically finds that respondents over-estimate affirmative answers by ten percent or more on questions such as these, so the actual rate of ENERGY STAR penetration is probably lower than reported here.

Figure 5-1. ENERGY STAR Equipment Ownership



There were several statistically-significant differences depending on respondent demographics or housing characteristics. Across all ENERGY STAR appliances types, the owners of ENERGY STAR equipment were more likely to be home owners, frequent purchasers of CFLs, recent appliance purchasers, and aware of the ENERGY STAR program compared to those who had not purchased ENERGY STAR equipment. For most of the ENERGY STAR appliance types, the ENERGY STAR equipment owners also tended to be better educated, have higher incomes, be more aware of energy efficiency programs, and be more likely to be living in the Lower Peninsula than those who did not own such equipment.

- Refrigerator:
 - *Home ownership:* Respondents who owned their homes were more likely (62% of respondents) than renters (47%) to say they had an ENERGY STAR refrigerator.
 - *CFL purchasing frequency:* Respondents who always purchase CFLs (66%) or who sometimes purchase them (61%) were more likely than those who never purchased CFLs (50%) to say they had an ENERGY STAR refrigerator.
 - *Most recent appliance purchase:* Respondents who purchased at least one appliance since 2008 were more likely (64%) than those who did not purchase an appliance (56%) to say they had an ENERGY STAR refrigerator.



- *ENERGY STAR awareness*: Respondents who were aware of ENERGY STAR were more likely (66%) than those not aware of ENERGY STAR (50%) to say they had an ENERGY STAR refrigerator.
- Clothes washer:
 - *Income*: Respondents with incomes of \$50,000 or more were more likely (63% of respondents) than those who did not report income (50%) or with incomes less than \$50,000 (47%) to have an ENERGY STAR clothes washer.
 - *Home ownership*: Respondents who owned their homes (55%) were more likely than renters (38%) to say they had an ENERGY STAR clothes washer.
 - *Energy efficiency program awareness*: Respondents who were aware of an energy efficiency program were more likely (59%) than those unaware (46%) to say they had an ENERGY STAR clothes washer.
 - *CFL purchasing frequency*: Respondents who always purchase CFLs (59%) or who sometimes purchase them (53%) were more likely than those who never purchased CFLs (40%) to say they had an ENERGY STAR clothes washer.
 - *Most recent appliance purchase*: Respondents who purchased at least one appliance since 2008 were more likely (60%) than those who did not purchase an appliance (45%) to say they had an ENERGY STAR clothes washer.
 - *ENERGY STAR awareness*: Respondents who were aware of ENERGY STAR were more likely (60%) than those not aware of ENERGY STAR (38%) to say they had an ENERGY STAR clothes washer.
 - *Concern about reducing home energy use*: Respondents who were concerned with reducing their home's energy use were more likely (55%) than those not concerned (45%) to say they had an ENERGY STAR clothes washer.
- Heating system:
 - *Energy efficiency program awareness*: Respondents who were aware of an energy efficiency program were more likely (51% of respondents) than those unaware (43%) to say they had an ENERGY STAR heating system.
 - *Geographic location*: Respondents who live in the Lower Peninsula were more likely than (48%) those in the Upper Peninsula (42%) to say their heating system was ENERGY STAR.



- *Income*: Respondents with incomes of \$50,000 or more were more likely (57%) than those with less income (44%) or who did not report income (44%) to have an ENERGY STAR heating system.
- *Home ownership*: Respondents who owned their homes were more likely (51%) than renters (25%) to say they had an ENERGY STAR heating system.
- *CFL purchasing frequency*: Respondents who always purchase CFLs were more likely (54%) than those who sometimes purchase them (46%) or those who never purchased them (41%) to say they had an ENERGY STAR heating system.
- *Most recent appliance purchase*: Respondents who purchased at least one appliance since 2008 were more likely (52%) than those who did not purchase an appliance (43%) to say they had an ENERGY STAR heating system.
- *ENERGY STAR awareness*: Respondents who were aware of ENERGY STAR were more likely (51%) than those not aware of ENERGY STAR (41%) to say they had an ENERGY STAR heating system.
- **Dishwasher:**
 - *Education*: Respondents with a four year degree or more (40%) or some college (36%) were more likely than those with a high school degree or less (23%) to have an ENERGY STAR dishwasher.
 - *Income*: Respondents with incomes of \$50,000 or more (39%) or who did not report income (38%) were more likely than those with less income (22%) to have an ENERGY STAR dishwasher.
 - *Home ownership*: Respondents who owned their homes were more likely (35%) than renters (8%) to say they had an ENERGY STAR dishwasher.
 - *Energy efficiency program awareness*: Respondents who were aware of an energy efficiency program were more likely (36%) than those unaware (29%) to say they had an ENERGY STAR dishwasher.
 - *CFL purchasing frequency*: Respondents who always purchase CFLs or who sometimes purchase them were more likely (35% of respondents for each group) than those who never purchased CFLs (23%) to say they had an ENERGY STAR dishwasher.



- *Most recent appliance purchase:* Respondents who purchased at least one appliance since 2008 were more likely (38%) than those who did not purchase an appliance (28%) to say they had an ENERGY STAR dishwasher.
- *ENERGY STAR awareness:* Respondents who were aware of ENERGY STAR were more likely (39%) than those not aware of ENERGY STAR (22%) to say they had an ENERGY STAR dishwasher.
- Central air conditioner:
 - *Geographic location:* Respondents who live in the Lower Peninsula were more likely (35%) than those in the Upper Peninsula (22%) to say their central air conditioner was ENERGY STAR.
 - *Energy efficiency program awareness:* Respondents who were aware of an energy efficiency program were more likely (37%) than those unaware (28%) to say they had an ENERGY STAR central air conditioner.
 - *Education:* Respondents with a four year degree or more (41%) were more likely than those with some college (32%) or with a high school degree or less (30%) to have an ENERGY STAR central air conditioner.
 - *Income:* Respondents with incomes of \$50,000 or more were more likely (45%) than those who did not report income (29%) or with less income (28%) to have an ENERGY STAR central air conditioner.
 - *Home ownership:* Respondents who owned their homes were more likely (36%) than renters (10%) to say they had an ENERGY STAR central air conditioner.
 - *Most recent appliance purchase:* Respondents who purchased at least one appliance since 2008 were more likely (38%) than those who did not purchase an appliance (27%) to say they had an ENERGY STAR central air conditioner.
 - *ENERGY STAR awareness:* Respondents who were aware of ENERGY STAR were more likely (37%) than those not aware of ENERGY STAR (26%) to say they had an ENERGY STAR central air conditioner.

5.1.5 Program Participation and Awareness

The survey contained several questions about whether respondents had heard of or participated in any energy efficiency programs.



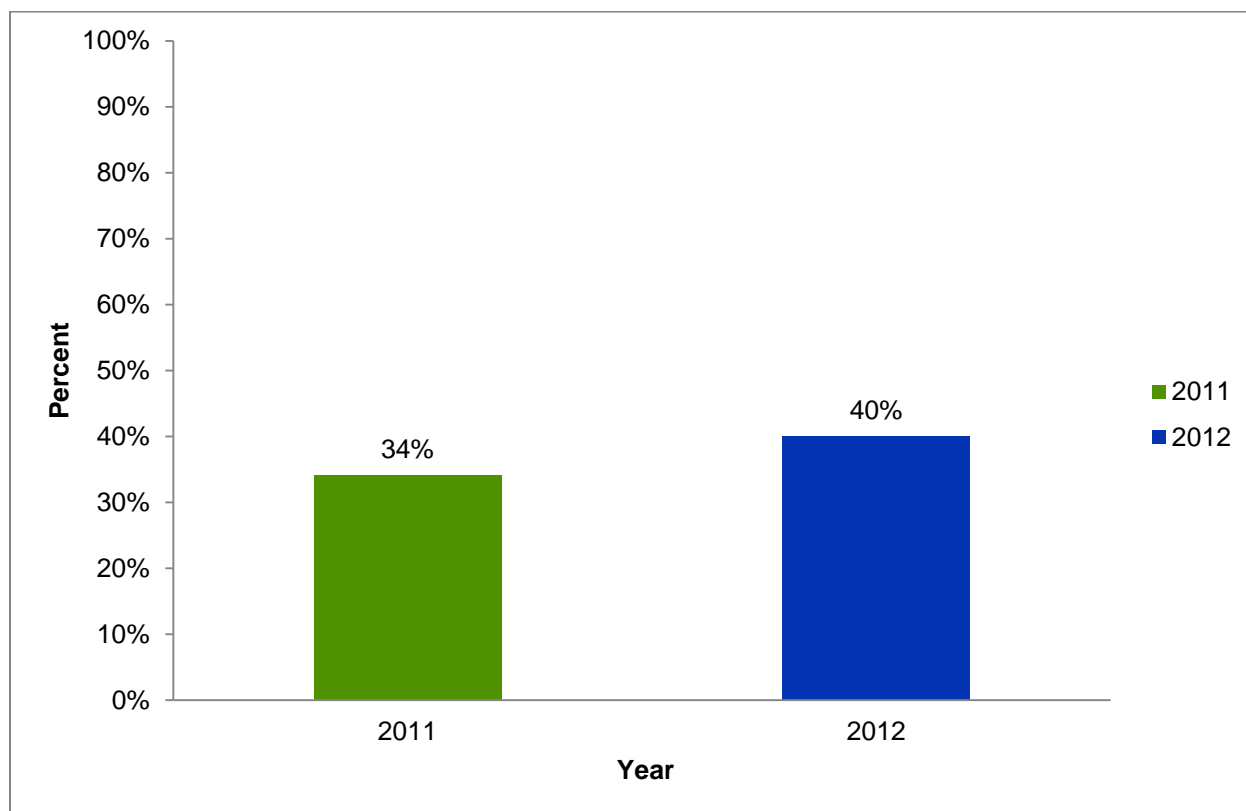
5.1.5.1 Program Participation

As explained in the methodology section, respondents who said they had participated in programs were dropped from the rest of the survey. However, we can report the proportion of those we surveyed who said they had participated in at least one energy efficiency program. About five percent of the households who RA was able to contact reported that they had participated in at least one energy efficiency program.

5.1.5.2 Program Awareness

The survey asked nonparticipants if they had heard of the Efficiency UNITED (EU) programs that provide rebates/discounts for energy efficient equipment. There was an increase in nonparticipant awareness in the EU program in 2012 (40%) compared to 2011 (34%; Figure 5-2).

Figure 5-2. EE Program Awareness



There were several statistically-significant differences among the demographic or housing characteristics of those respondents who were aware of the EU programs and those who were not. The EU-aware respondents were more likely to be home owners, to be better educated, to be recent appliance purchasers, and to be aware of ENERGY STAR than the respondents who were not aware of the EU programs. The following bullets show these differences:



- *ENERGY STAR awareness:* Respondents who were also aware of ENERGY STAR were more likely (45% of respondents) than those not aware of ENERGY STAR (32%) to say they were aware of the EU programs.
- *Education:* Respondents with a four year degree or more were more likely (45%) than those with a high school degree or less (36%) to say they were aware of the EU programs.
- *Home ownership:* Respondents who owned their homes were more likely (42%) than renters (23%) to say they were aware of the EU programs.
- *Most recent appliance purchase:* Respondents who purchased at least one appliance since 2008 were more likely (44%) than those who did not purchase an appliance (36%) to say they were aware of the EU programs.

There were also several statistically-significant differences among the demographic or housing characteristics of those respondents who were aware of utility-sponsored rebate program and those who were not. The respondents who were aware of the utility-sponsored rebate programs were more likely to be home owners, to be recent appliance purchasers, to be frequent CFL purchasers, to be aware of the ENERGY STAR brand, and to be located in the Lower Peninsula of Michigan than their counterparts who were not aware of these utility-sponsored rebate programs. The following bullets show these differences:

- *ENERGY STAR awareness:* Respondents who were also aware of ENERGY STAR (41%) were more likely than those not aware of ENERGY STAR (28%) to say they were aware of utility-sponsored rebate programs.
- *Geographic location:* Respondents who live in the Lower Peninsula were more likely (37%) than those in the Upper Peninsula (30%) to say they were aware of utility-sponsored rebate programs.
- *Home ownership:* Respondents who owned their homes were more likely (37%) than renters (23%) to say they were aware of utility-sponsored rebate programs.
- *Most recent appliance purchase:* Respondents who purchased at least one appliance since 2008 were more likely (40%) than those who did not purchase an appliance (36%) to say they were aware of utility-sponsored rebate programs.
- *Frequency of CFL purchases:* Respondents who sometimes purchase CFLs were more likely (38%) than those who always purchase CFLs (30%) to say they were aware of utility-sponsored rebate programs.

For respondents who said they were aware of a utility-sponsored rebate program, the survey asked a follow-up question about what specific rebates the respondents were aware of. Table 5-3 summarizes



respondent awareness of specific programs. The appliance recycling rebates were the best-known types, followed by HVAC and CFL rebates. Other rebates were less well-known.

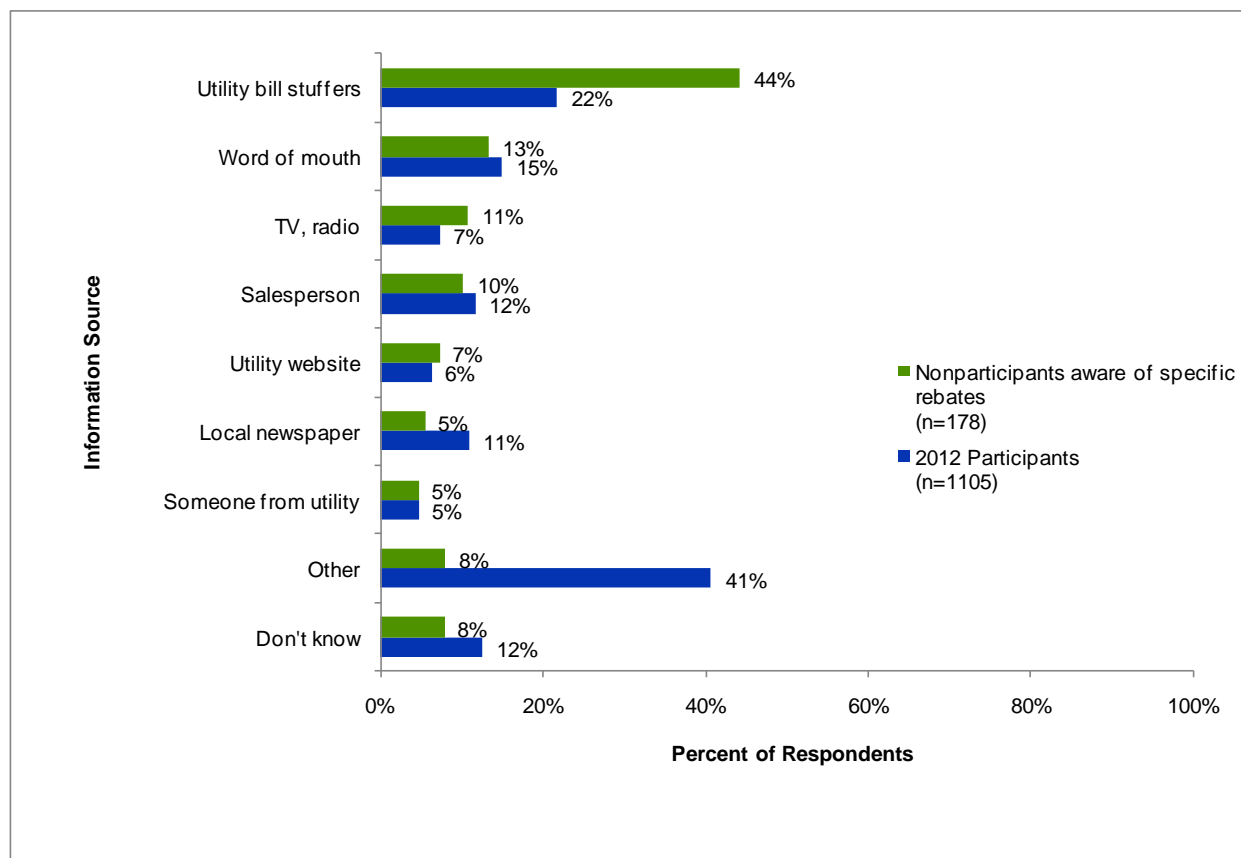
Table 5-3. Awareness of Specific Rebates

Specific Program	Percent of Rebate Aware (n=272)	Percent of All Respondents (n=782)
Recycling Refrigerators or Freezers	19%	7%
Furnaces or Boilers	19%	6%
CFLs	12%	4%
None	12%	4%
Clothes washers	7%	2%
Central air conditioners	7%	2%
Energy Efficient Appliances	6%	2%
In-person energy audits	5%	2%
Dishwashers	4%	2%
Bill Discount	4%	1%
Windows and Doors	3%	1%
Clothes dryers	3%	1%
Kits with several different items	3%	1%
Pipe wrap/Pipe insulation	3%	1%
Online energy audits	3%	1%
Gas	2%	1%
Attic or wall insulation	2%	1%
Thermostat	2%	1%
Water heater	2%	1%
Smart Power Strips	2%	1%
Faucet aerators	1%	0%
Air sealing/Weather stripping/Caulking	1%	0%
Showerheads	1%	0%
Other	1%	0%
Don't know	22%	8%

5.1.5.3 Sources of Information

The survey asked any respondent who was aware of a specific rebate program where they got information about those programs. Figure 5-3 compares the nonparticipant and 2012 participant responses. For nonparticipants, utility bill stuffers were the most popular source of program information, followed by word of mouth, TV or radio and salespersons where the equipment was purchased. Even though participants were much less likely to cite bill stuffers compared to nonparticipants, participants were about as likely to mention word of mouth, TV/radio, salespeople, utility website, local newspaper and utility contact as sources of program information.

Figure 5-3. Information Sources – Program Aware



Note: Totals exceed 100% because multiple answers were accepted. Other responses included: state/national newspapers, community events or local schools, non-utility Internet sites, workplace, direct mail not included in bill, government and uncategorized other responses.

There were several statistically-significant differences depending on customer characteristics:

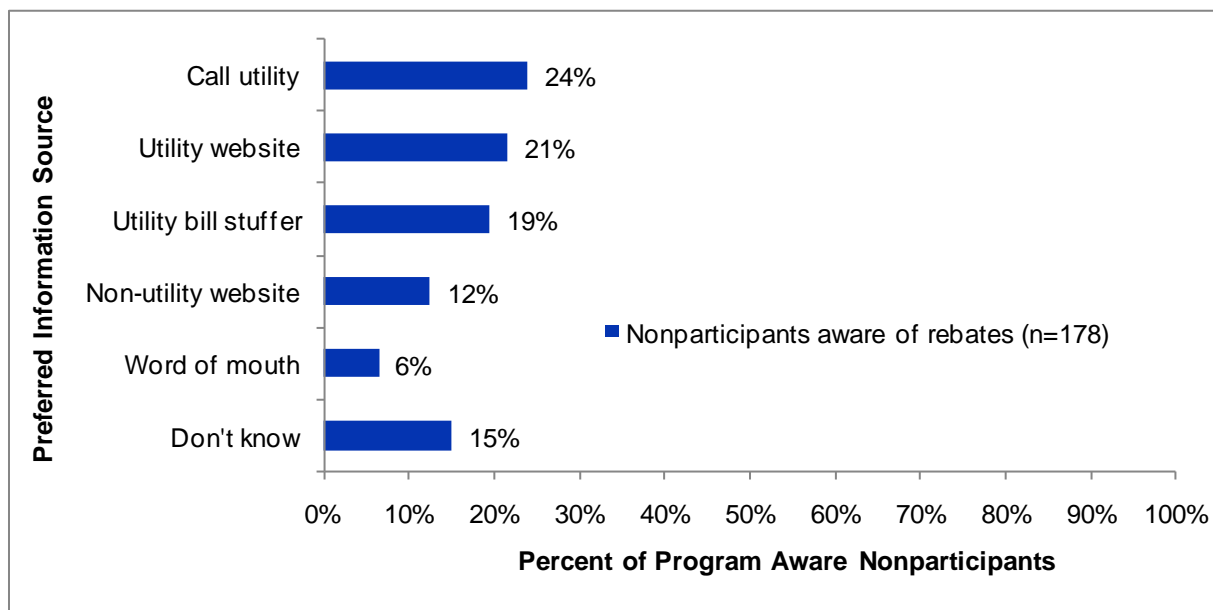
- **Education:** Respondents with high school diplomas or less were more likely (55% of respondents) than those with four year degrees or more (38%) or some college (37%) to cite utility bill stuffers as a source of program information.
- **Income:**
 - Respondents who did not report income were more likely (51%) than those with \$50,000 or more income (33%) to cite utility bill stuffers as a source of program information.
 - Respondents reporting income were more likely (16%) than those who did not report income (2%) to cite TV/radio as a program information source.



- Gender:
 - Women were more likely (54%) than men (34%) to cite utility bill stuffers as a source of program information.
 - Men were more likely (18%) than women (4%) to cite word of mouth as a source of program information.

The survey further asked if the nonparticipants were looking for information about rebate programs, which information sources they would prefer. Results are summarized in Figure 5-4. The most common answer provided by nonparticipants is that they would call their utility (24%). Other common answers included a utility website (21%), utility bill stuffers (19%), and non-utility websites (12%).

Figure 5-4. Preferred Information Sources – Program Aware



Note: Total exceeds 100% because multiple answers were accepted. Other answers included: retail store, newspaper, government agency, and product manufacturer.

There were several statistically significant differences in preferred information sources depending on respondent characteristics:

- Education:
 - Respondents with or a four year degree or more education were more likely (28%) than those with a high school diploma or less (15%) to say they would look at the utility website for information.

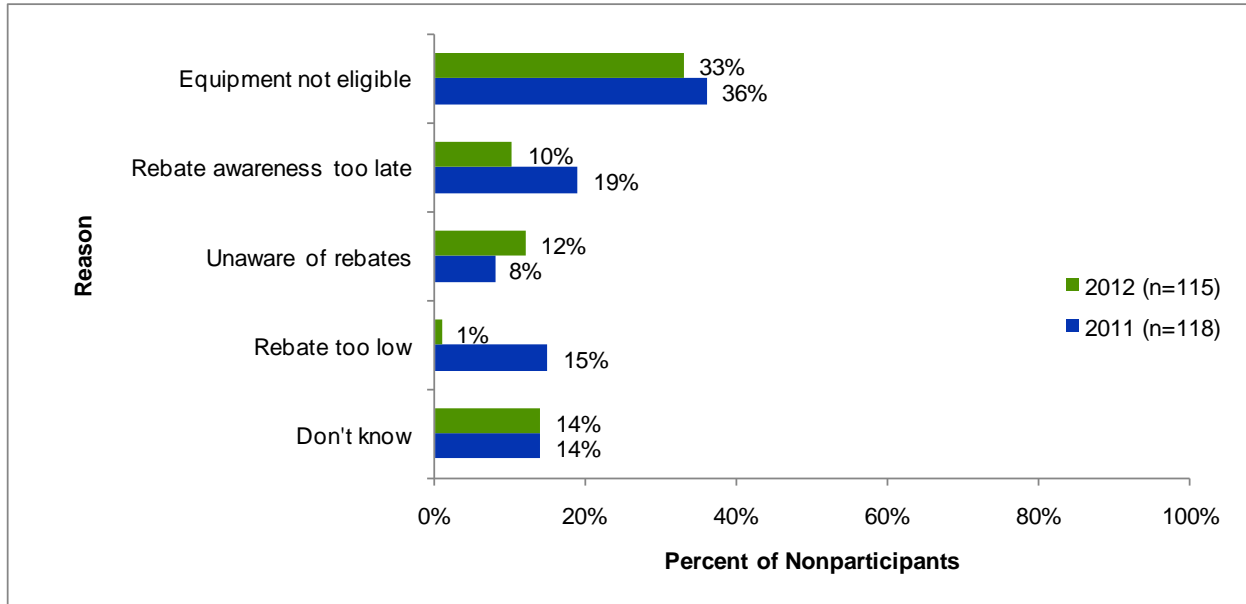


- Respondents with some college (19%) or a four year degree or more education (18%) were more likely than those with a high school diploma or less (7%) to say they would look at non-utility websites for information.
- **Income:**
 - Respondents with incomes of \$50,000 or more were more likely (29%) than those who did not report income (18%) to prefer getting information from the utility website.
 - Respondents with incomes of \$50,000 or more were more likely (28%) than those who did not report income (9%) or with less than \$50,000 (4%) to prefer getting information from non-utility websites.
- **Gender:** Men (17%) were more likely than women (9%) to prefer getting information from non-utility websites.
- **ENERGY STAR awareness:**
 - Respondents aware of ENERGY STAR were more likely (26%) than those unaware (9%) to say they prefer to get information from the utility website.
 - Respondents aware of ENERGY STAR were more likely (15%) than those unaware (6%) to say they prefer to get information from non-utility websites.
- **Energy reduction concern:** Respondents who were concerned with reducing their home's energy use were more likely (22%) than those not concerned (10%) to prefer getting information from utility bill stuffers.
- **CFL purchase frequency:** Respondents who sometimes purchase CFLs were more likely (23%) than those who always purchase CFLs (11%) to prefer getting information from utility bill stuffers.

5.1.6 Barriers to Participation

The survey asked nonparticipants who were aware of any rebate program why they did not participate. Similar to 2011, the most common answer was that the equipment purchased was not eligible for rebates. However, there is a decrease from the 2011 general population survey when 19% of respondents reported being aware of the rebate too late (vs. 10% in 2012) and 15% of respondents indicated the rebate was too low (vs. 1% in 2012). Figure 5-5 shows the comparison between responses in 2011 and 2012.

Figure 5-5. Reason for Not Participating



There were several statistically significant differences based on respondent characteristics:

- *Geographic location:* Lower Peninsula residents were more likely (13% of respondents) than Upper Peninsula residents (3%) to say they did not currently need any new appliances.
- *Education:*
 - Respondents with some college or were more likely (51%) than those with a four year degree or more education (21%) to say the equipment they purchased was not eligible for rebates.
 - Respondents with a four year degree or more education were more likely (21%) than those with a high school diploma or less (7%) to not be aware of rebates.
- *Income:* Respondents with incomes less than \$50,000 were more likely (17%) than those with more income (4%) to not be aware of rebates.
- *Gender:*
 - Men were more likely (19%) than women (5%) to not be aware of rebates.
 - Men were more likely (17%) than women (6%) to say they did not currently need any new appliances.

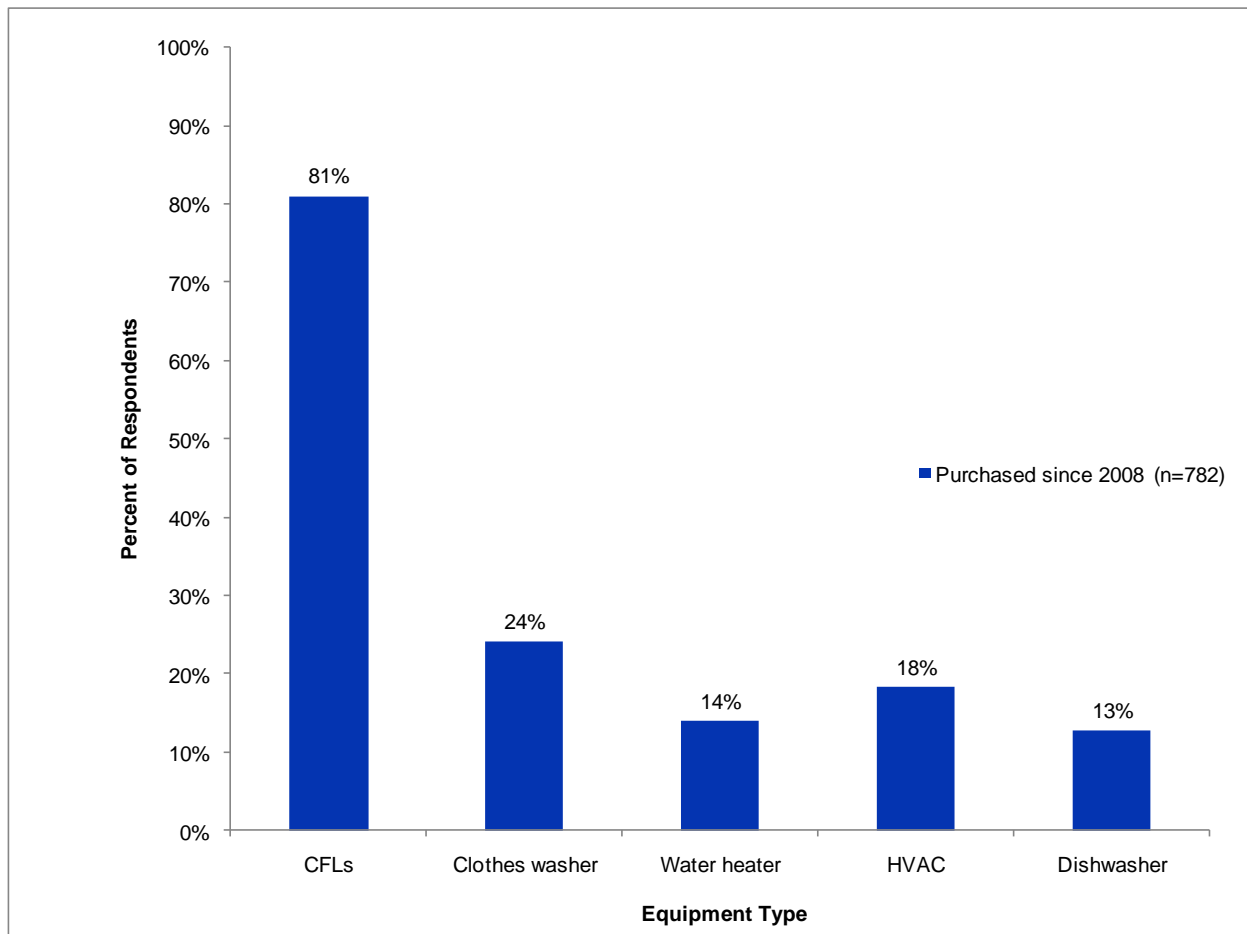


- **ENERGY STAR awareness:** Respondents aware of ENERGY STAR were more likely (13%) than those unaware (4%) to say they didn't find out about the program until too late.

Appliance purchases: Respondents who did not purchase at least one appliance since 2008 were more likely (40%) than those who did purchase an appliance (23%) to say their equipment did not qualify for the rebate.

The survey asked respondents several questions about whether they purchased any energy using equipment since 2008. The survey asked respondents who purchased equipment whether they were aware of rebates at the time of purchase, and whether they purchased rebate eligible equipment. Most (81%) of the respondents purchased CFLs and less than one quarter purchased clothes washers, water heaters, HVAC equipment, or dish washers (Figure 5-6). Details about the purchase location, information sources, and important characteristics are covered Section 5.1.7.

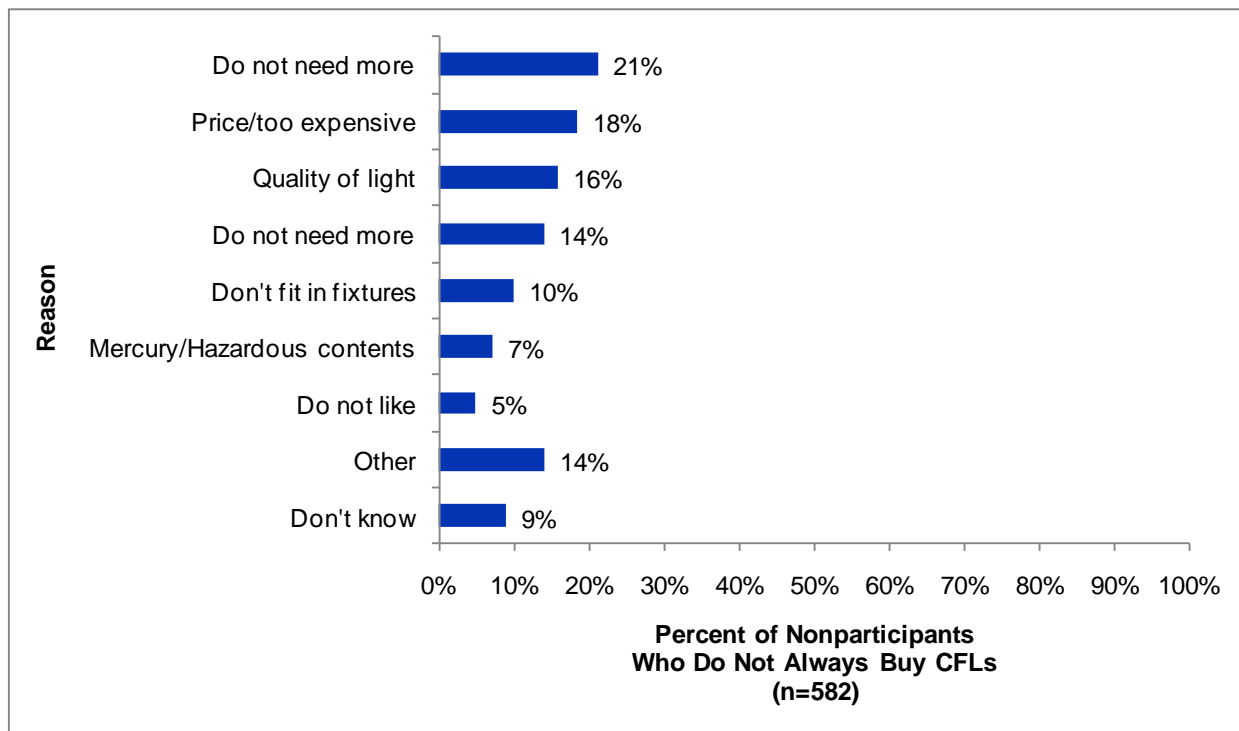
Figure 5-6. Equipment Purchases





For respondents who did not say they always purchase CFLs, the survey asked why they did not always purchase CFLs. The most common answer was that they do not need more (21%, were too expensive (18%), followed by quality of light (16%), do not need more (14%), don't fit in fixtures (10%) and other reasons (Figure 5-7).

Figure 5-7. Reason CFLs not Purchased



Note: Other reasons included: look ugly in fixtures burn out too quickly, someone else purchases for me, sometimes needs a different type of light for specific use, take too long to run , not available in stores, flicker, switching to LED lights, and other uncategorized answers.

For respondents who purchased any of the other types of equipment (clothes washers, water heater, HVAC equipment, or dishwashers) the survey asked them whether there were rebates available at the time of the purchase, who offered the rebates, whether they purchased a rebate eligible unit, and if not, why not. Most respondents reported that rebates were not available at the time they purchased equipment, and almost all respondents who said a rebate was available took advantage of it. Contractor or retailer rebates for clothes washers and water heaters were common. Federal government rebates for water heaters and HVAC equipment were common, and manufacturer rebates were common for dishwashers. Very few respondents mentioned a utility rebate (from either their own or another utility) was available at the time of purchase (Table 5-4).



Table 5-4. Rebate Availability, Use, and Offerer

	Equipment Purchased			
	Clothes Washer (n=189)	Water Heater (n=114)	HVAC (n=107)	Dishwasher (n=101)
Rebates Available	21%	4%	29%	19%
Purchased Eligible Rebate	87%	100%	89%	80%
Rebate Offered By:				
Contractor/Retailer	21%	57%	13%	13%
Local government	20%	0%	0%	0%
Manufacturer	20%	0%	6%	48%
Federal government	19%	0%	36%	0%
Electric or gas utility	1%	0%	19%	3%
ENERGY STAR	1%	0%	4%	3%
Other	1%	0%	0%	7%
Another utility	0%	0%	4%	0%
Utility	0%	0%	2%	0%
Don't know	17%	43%	17%	26%

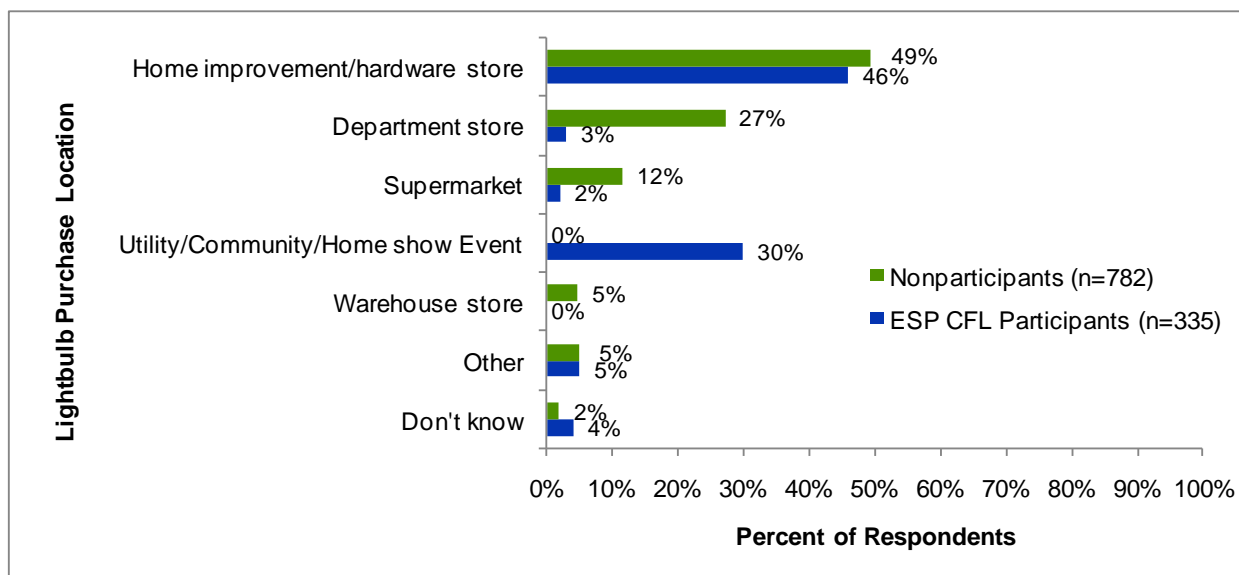
5.1.7 Equipment Purchases

The survey asked a series of questions about whether nonparticipants had purchased any major energy using equipment since 2008. If they did, the survey went into a series of questions about where they bought that equipment, what information sources they used when researching that equipment, which features were important and most important, whether they remembered any rebates for the equipment when they purchased it, and if they purchased rebate-eligible equipment.

5.1.7.1 Light Bulb Purchases

The survey asked respondents where they typically shop for light bulbs (not necessarily CFLs). Figure 5-8 compares their answers to the locations where 2011 ENERGY STAR Program (ESP) participants purchased their CFLs. The most common location nonparticipants purchased light bulbs were home improvement or hardware stores (49%) or department stores (27%). Supermarkets (12%) were also common locations. Similar to nonparticipants, the majority of 2012 ESP CFL purchasers (46%) purchased CFLs from home improvement or hardware stores. In contrast to nonparticipants, almost a third of ESP CFL purchasers (30%) bought CFLs at event outings (e.g., utility, community, and/or home shows).

Figure 5-8. Light Bulb Purchase Location



Note: Other responses included: discount/\$1 dollar stores, big box retailers, drug stores, over the Internet and non-categorized other locations.

There were several statistically significant differences in CFL purchase locations depending on respondent characteristics:

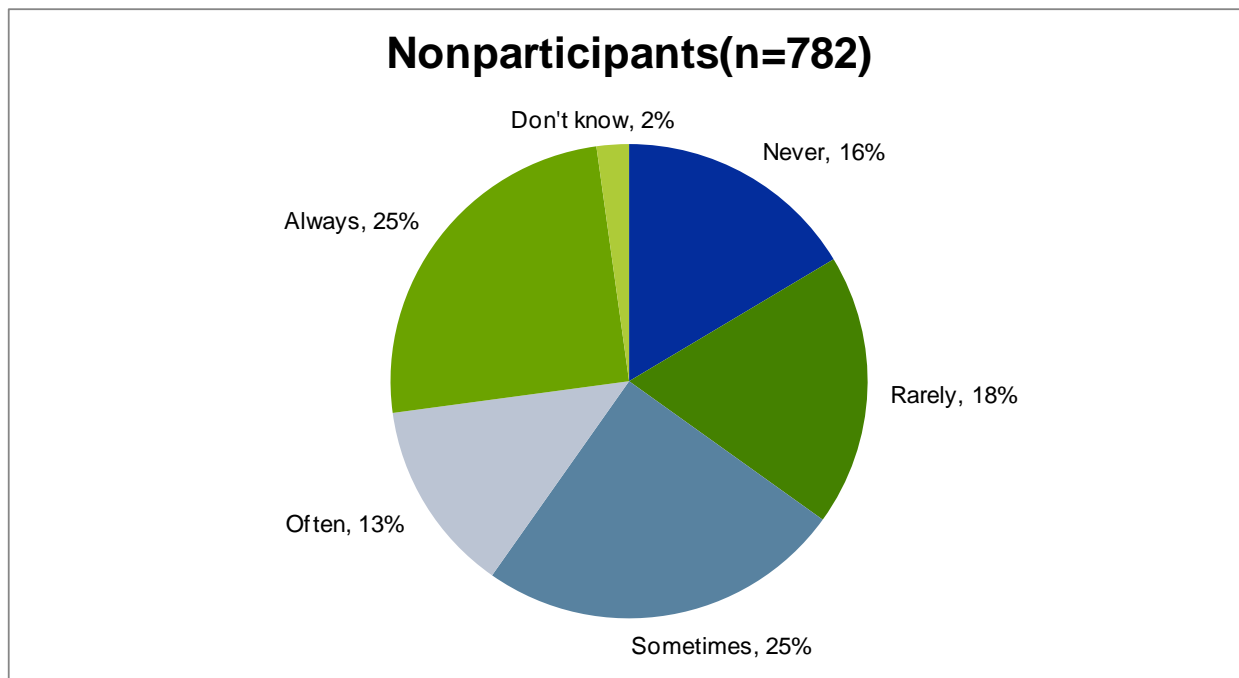
- **Geographic location::**
 - Lower Peninsula residents were more likely (13% of respondents) than Upper Peninsula residents (7%) to say they purchase CFLs from the supermarket.
 - Upper Peninsula residents were more likely (42%) than Lower Peninsula residents (24%) to say they purchase CFLs from the department store.
- **Program awareness:** Respondents who were not aware of at least one rebate program were more likely (33%) than those with awareness (22%) to purchase CFLs from department stores.
- **Income:**
 - Respondents with incomes of \$50,000 or more were more likely (63% of respondents) than those with incomes less than \$50,000 (44%) or who did not report income (44%) to purchase CFLs at home improvement or hardware stores.
 - Respondents with incomes less than \$50,000 (31%) or who did not report income (29%) were more likely than those with incomes \$50,000 or more (20%) to purchase CFLs at department stores.
- **Education:**



- Respondents with a four year degree or more were more likely (59%) than those with a high school degree or less (44%) to purchase CFLs at home improvement or hardware stores.
- Respondents with some college (31%) or those with a high school degree or less (30%) were more likely than those with a four year degree or more (22%) to purchase CFLs at department stores.
- *Home ownership:* Owners were more likely than renters to purchase CFLs at home improvement or hardware stores (52% vs. 27%).
- *Gender:* Men were more likely than women to purchase CFLs at home improvement or hardware stores (58% vs. 43%) and less likely to purchase them at department stores (23% vs. 30%) and the supermarket (15% vs. 7%).
- *ENERGY STAR awareness:* Respondents aware of ENERGY STAR were more likely (53%) than those unaware (43%) to purchase CFLs at home improvement or hardware stores and less likely to purchase CFLs at department stores (33% vs. 24%).
- *CFL purchase frequency:* Respondents who always purchase CFLs were more likely (60%) than those who sometimes purchase them (48%) or never purchase them (41%) to purchase CFLs at home improvement or hardware stores and less likely (6%) to purchase CFLs at department stores than those who sometimes purchase them (14%) or never purchase them (13%)

Next, the survey asked nonparticipants how often they purchased CFLs. Responses were fairly evenly divided between the available choices of never, rarely, sometime, often, and always (Figure 5-9).

Figure 5-9. CFL Purchase Frequency

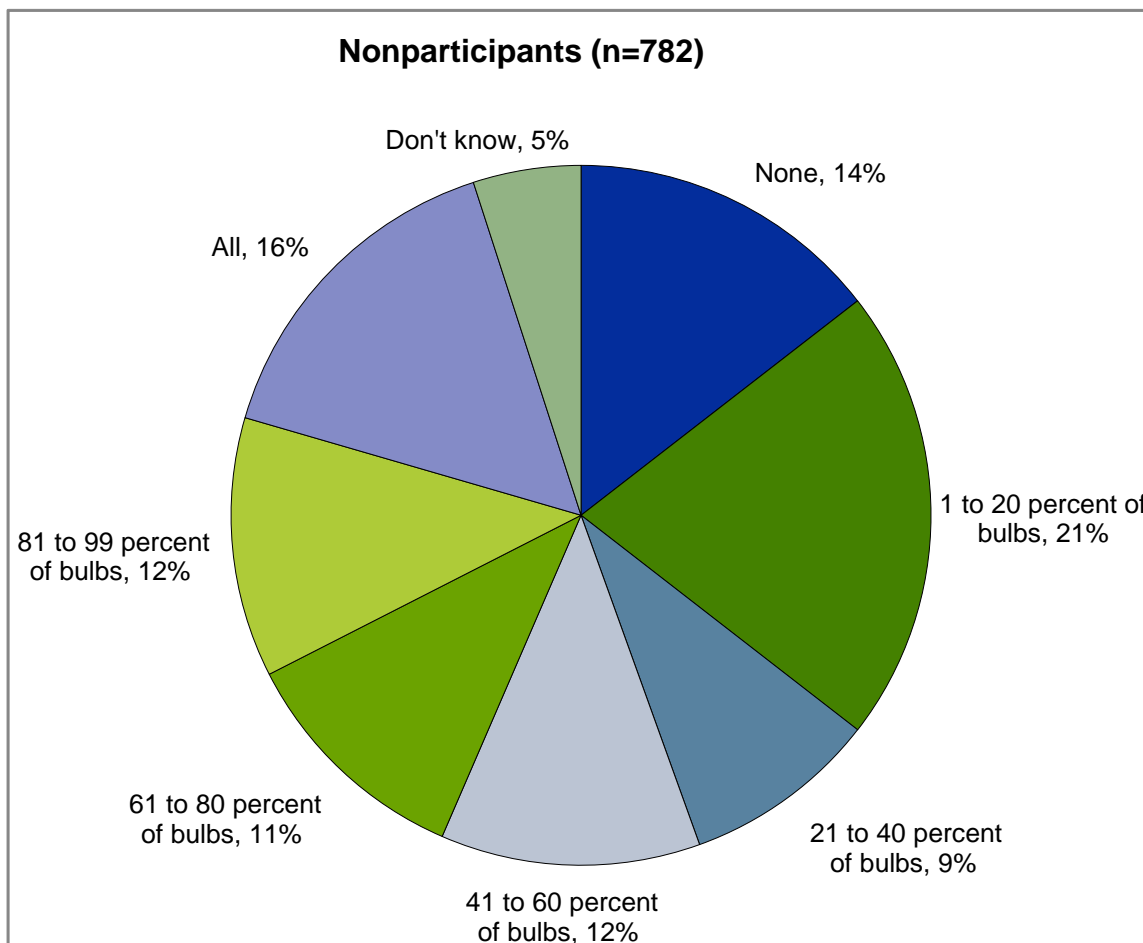


Education, income, appliance purchases, ENERGY STAR awareness, and energy reduction concerns were associated with the frequency of purchasing CFLs:

- *Education:* Respondents with some college (48%) or a four year college degree or more education (44%) were more likely than those with high school diplomas or less (30%) to say they often or always purchase CFLs.
- *Income:* Respondents with incomes of \$50,000 or more were more likely (43%) than those with who did not report income (35%) to say they often or always purchase CFLs.
- *Appliance purchases:* Respondents who purchased at least one appliance since 2008 were more likely (44%) than those who did purchase an appliance (33%) to say they often or always purchase CFLs.
- *ENERGY STAR awareness:* Respondents aware of ENERGY STAR were more likely (43%) than those not aware (29%) to say they often or always purchase CFLs.
- *Energy reduction concern:* Respondents with an energy reduction concern were more likely (41%) than those without an energy reduction concern (26%) to say they often or always purchase CFLs.

The survey asked all respondents what percent of the bulbs in their homes are CFLs. About 14 percent said none, another 16 percent said all. The other proportions were fairly evenly represented (Figure 5-10).

Figure 5-10. Percent of CFL Bulbs in Home



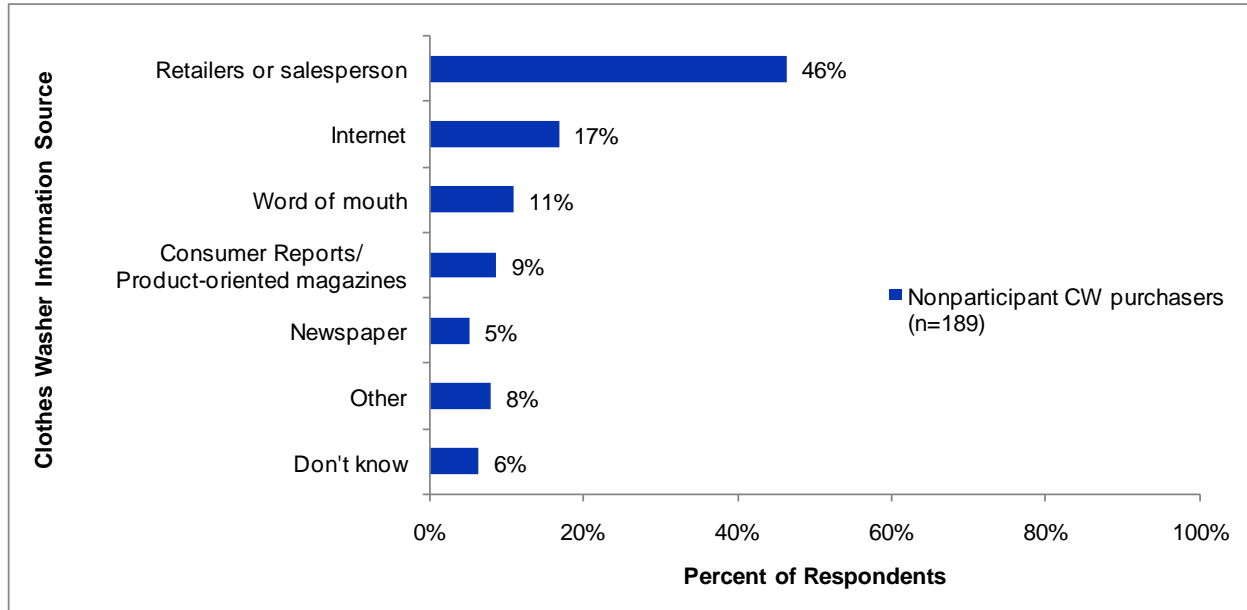
There were several statistically significant differences depending on respondent characteristics:

- *Gender:* Women were more likely than men to say that none of their home’s bulbs were CFLs (16% vs. 12%).
- *Home ownership:* Home owners were less likely than renters to say all of their bulbs were CFLs (15% vs. 25%).

5.1.7.2 Clothes Washer Purchases

About 24 percent of the nonparticipants said they had purchased a clothes washer since 2008. The most commonly-mentioned source of product information was retailers or salespeople (46%). The Internet (17%) and word of mouth (11%) were also common sources of information (Figure 5-11).

Figure 5-11. Clothes Washer Information Sources



Note: Total exceeds 100% because multiple answers were accepted. Other answers included: shopped around for best deal, other magazines, television, and electric or gas utility.

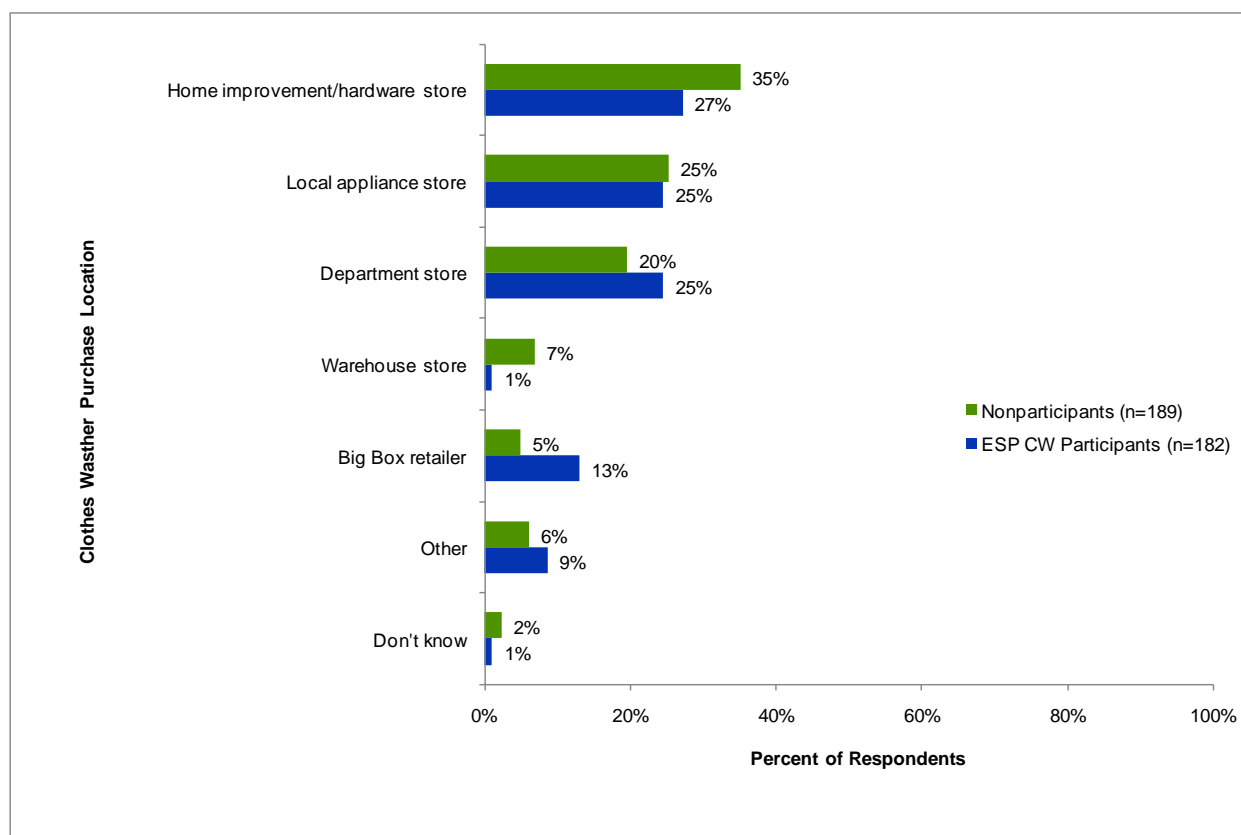
There were several statistically-significant differences depending on respondent characteristics:

- **Education:**
 - Respondents with some college (57%) or those with a high school degree or less (50%) were more likely than those with a four year degree or more (34%) to get clothes washer information from a retailer or salesperson.
 - Respondents with a four year degree or more (28%) or some college (21%) were more likely than those with a high school degree or less (6%) to get clothes washer information from the Internet.
- **Income:** Respondents with incomes of \$50,000 or more were more likely (23%) than those who did not report income (12%) to get clothes washer information from the Internet.
- **Gender:** Men were more likely (22%) than women (12%) to get clothes washer information from the Internet.
 - **ENERGY STAR Awareness:** Respondents who were aware of ENERGY STAR were more likely (24%) than those unaware of ENERGY STAR (1%) to get clothes washer information from the Internet but less likely to get information from a retailer or salesperson (40% vs. 62%).

- *Energy reduction concern:* Respondents who were concerned with reducing their home’s energy use were more likely (19%) than those not concerned (5%) to get clothes washer information from the Internet

Nonparticipants tended to purchase clothes washers at home improvement or hardware stores (35%), local appliance stores (25%), or department stores (20%). Compared to ESP participants, nonparticipants were less likely to purchase clothes washers at department stores or big box retailers, and more likely to purchase them at warehouse stores (Figure 5-12).

Figure 5-12. Clothes Washer Purchase Location



There were several statistically significant differences depending on respondent characteristics:

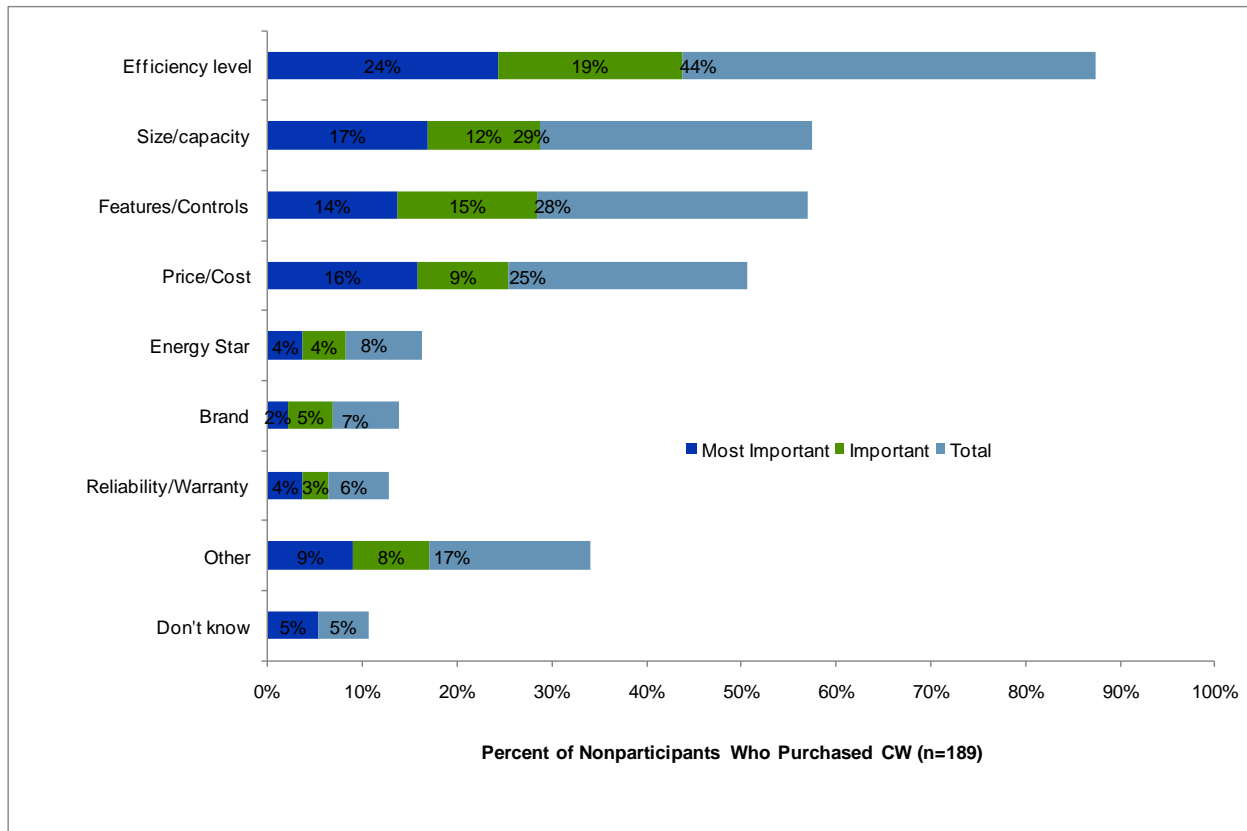
- *Geographic:* Lower Peninsula residents were more likely (39%) than Upper Peninsula residents (17%) to purchase clothes washers from a home improvement or hardware store and less likely from a local appliance store (21% vs. 46%).
- *Education:* Respondents a four year degree or more were more likely (28%) than those with some college (12%) to purchase clothes washers from a department store.
- *Income:*



- Respondents with incomes of \$50,000 or more (8%) or who did not report income (21%) were more likely than those with less than \$50,000 (10%) income (44%) to purchase clothes washers from a department store.
- Respondents with who did not report income were more likely (31%) than those incomes of \$50,000 or more (17%) to purchase clothes washers from a department store.
- *CFL purchase frequency*: Respondents who never purchase CFLs were more likely (41%) than those who sometimes purchase CFLs (13%) to purchase clothes washers from a department store.
- *Energy reduction concern*: Respondents unconcerned with reducing their home's energy use were more likely (41%) than those concerned (23%) to purchase clothes washers from a local appliance store.

When asked which clothes washer features were important to them, most nonparticipants said efficiency level (44%). Efficiency level was also the most common most important feature (24%). Other features commonly mentioned as important were size (29%), features or controls (28%), and price (25%), (Figure 5-13). Despite efficiency level being clearly the most important feature, only eight percent of nonparticipants mentioned ENERGY STAR as an important feature. This suggests ignorance about ENERGY STAR.

Figure 5-13. Clothes Washer Important Features

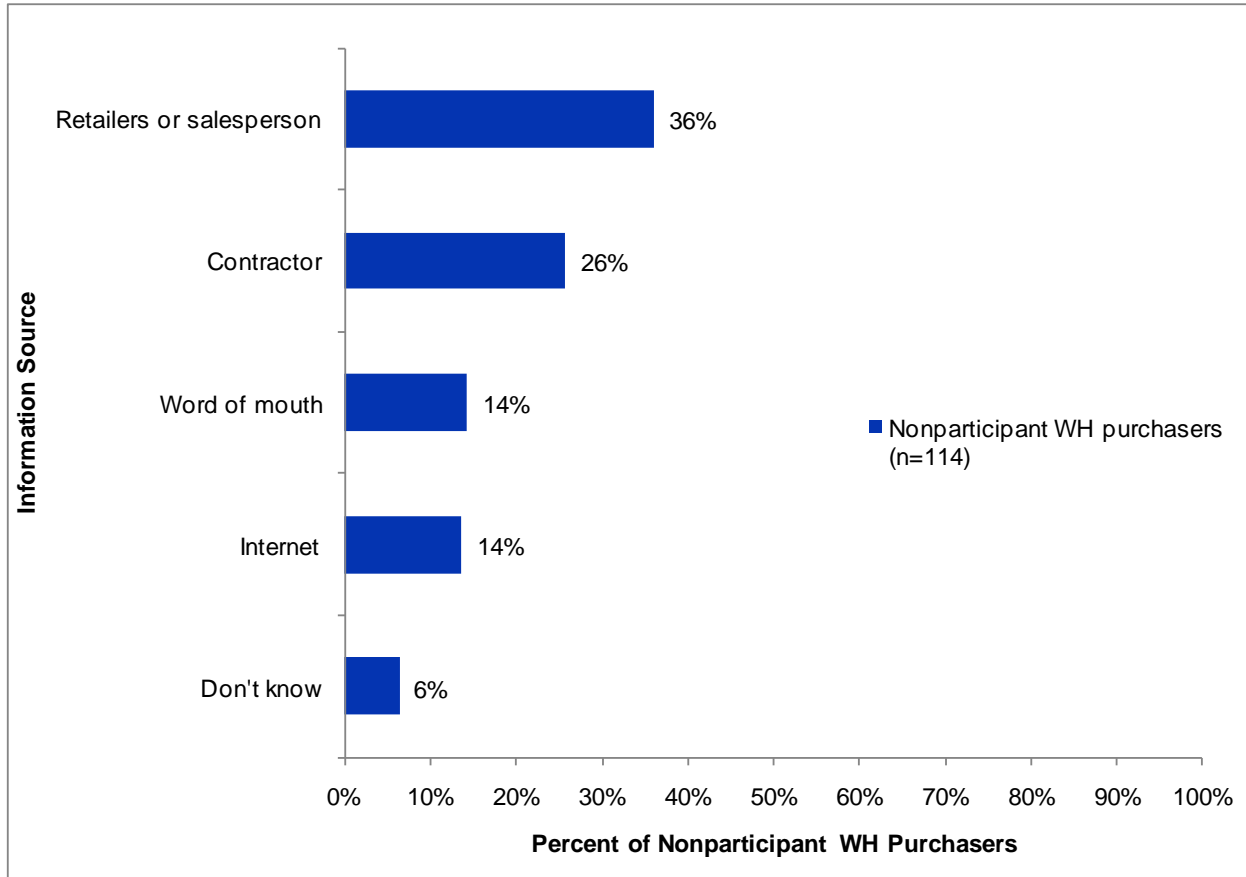


Note: Total exceeds 100% because multiple answers were accepted. Other answers included: quality, noise, operating cost, rebates, and uncategorized other answers.

5.1.7.3 Water Heater Purchases

The nonparticipant survey asked about water heater purchases, even though water heaters were no longer eligible for rebates in 2011. About 18 percent of nonparticipants said they had purchased a water heater since 2008. Figure 4-14 shows that nonparticipant water heater purchasers tended to get information about what to purchase from retailers or salespeople (36%) or contractors (26%).

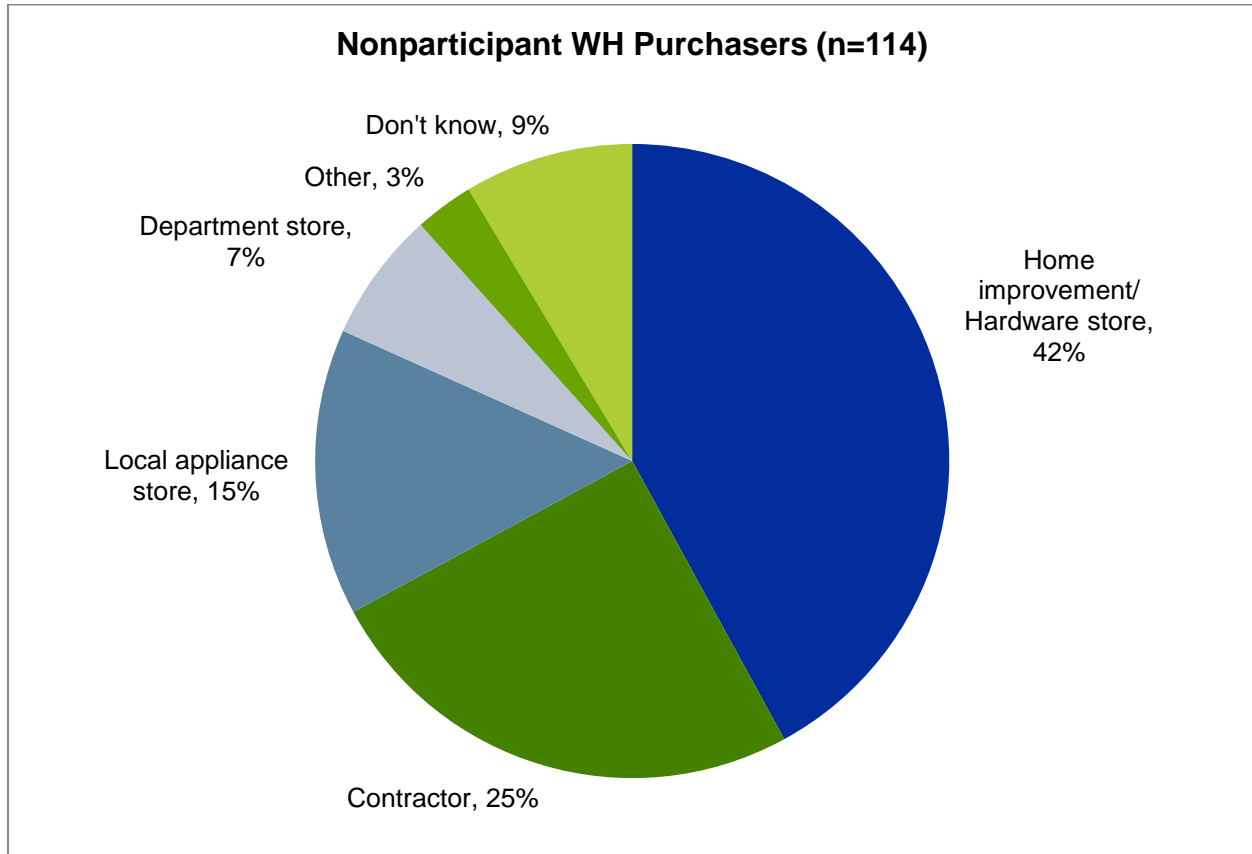
Figure 5-14. Water Heater Information Sources



Other answers included: consumer magazines and unspecified other sources.

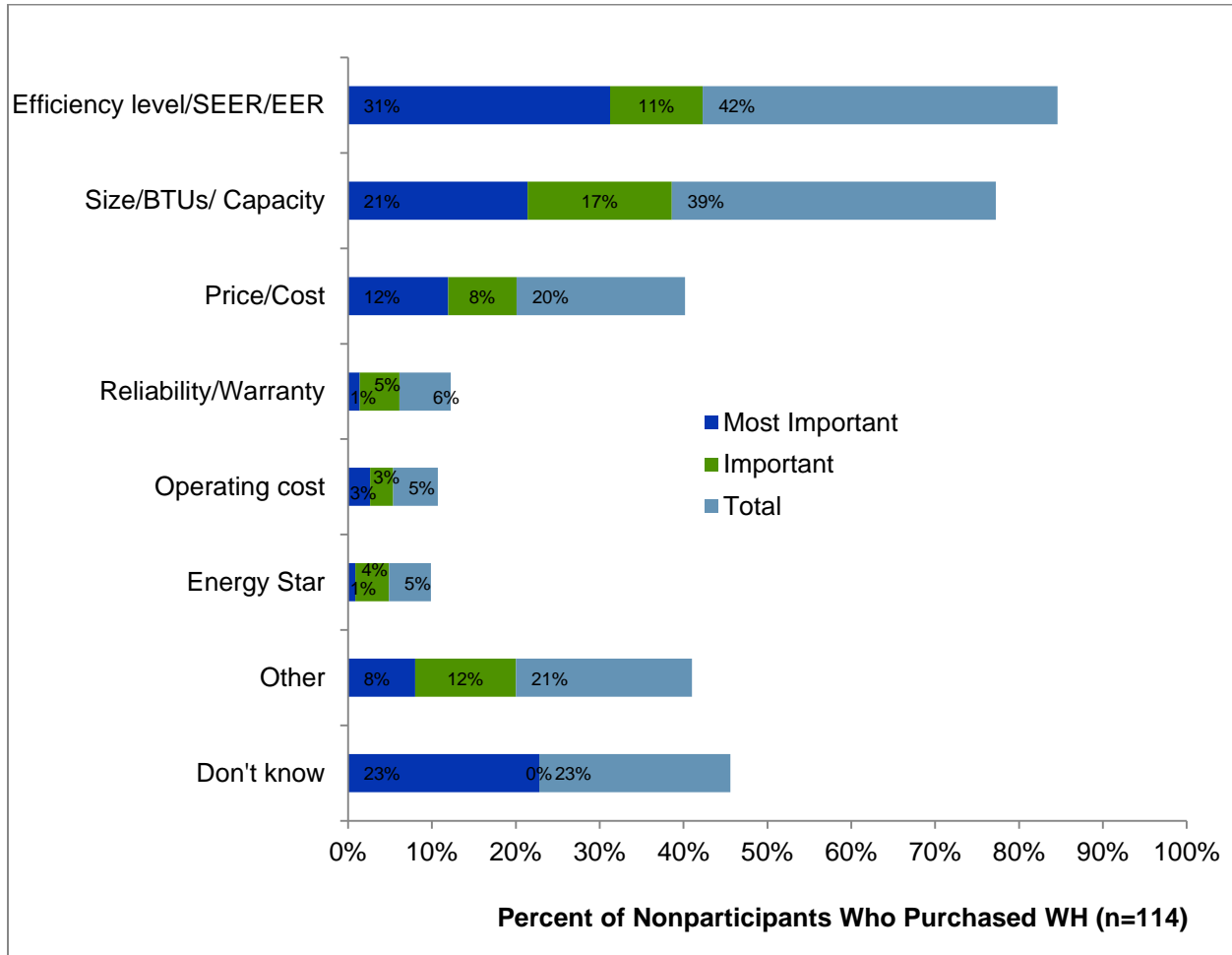
The most common locations where non-respondents purchased water heaters were home improvement or hardware stores (42%). Other purchase locations were contractors (25%), local appliance stores (15%), and department stores (7%; **Figure 5-15**). Water heaters were not rebated in 2011, so there are no comparisons possible to rebate program participants.

Figure 5-15. Water Heater Purchase Location



Efficiency was the most important water heater feature for nonparticipants. Forty-two percent mentioned it as an important feature, and 31 percent said it was the most important feature. Not far behind was size. Thirty-nine percent said size was important, and 21 percent said it was the most important feature. Price was also an important feature (20% important, 12% most important).

Figure 5-16. Water Heater Important Features

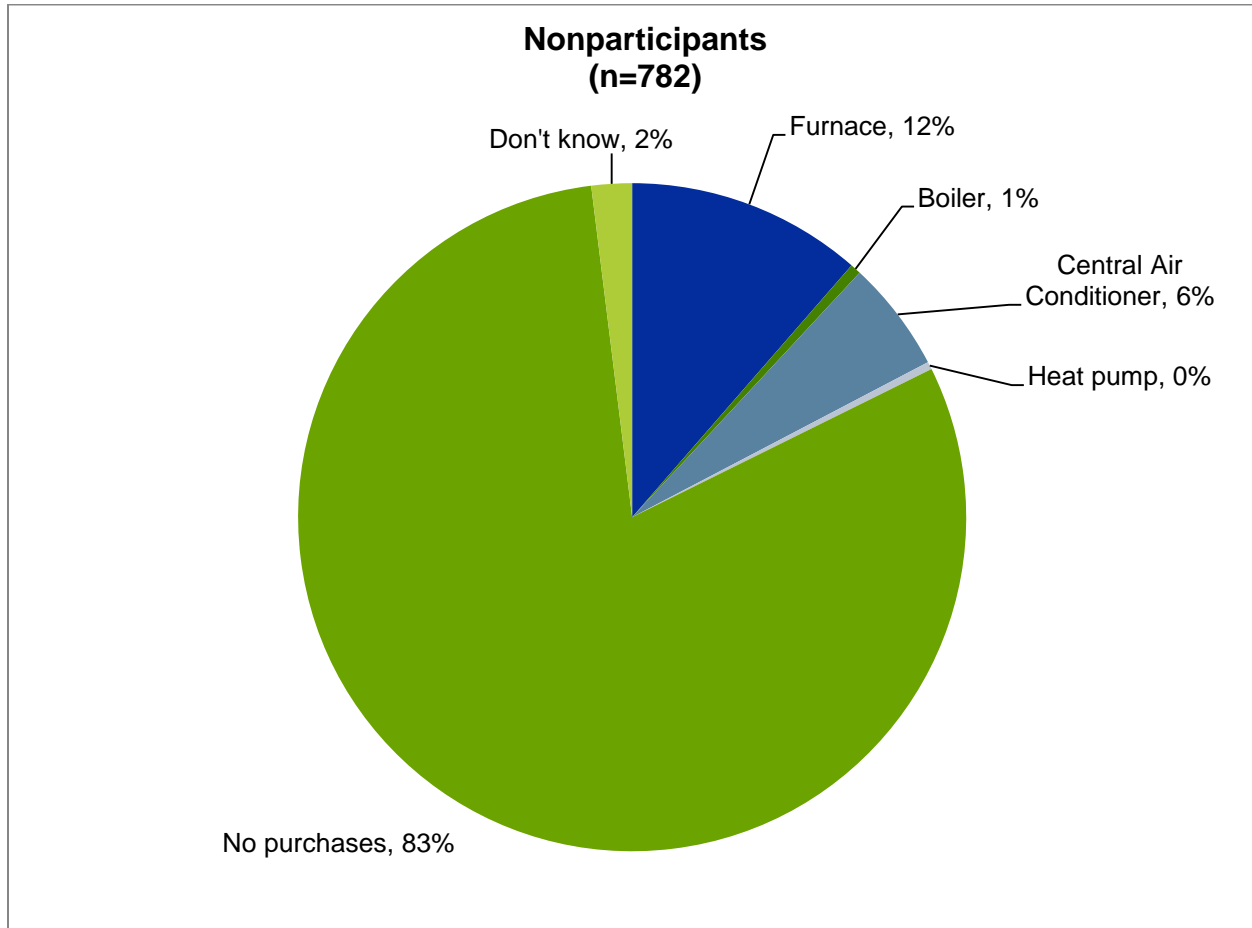


Note: Total exceeds 100% because multiple answers were accepted. Other answers included: type of energy used-gas/electric, salesperson/contractor recommendation, brand, consumer magazine/online recommendation, easy installation, and uncategorized other answers.

5.1.7.4 HVAC Purchases

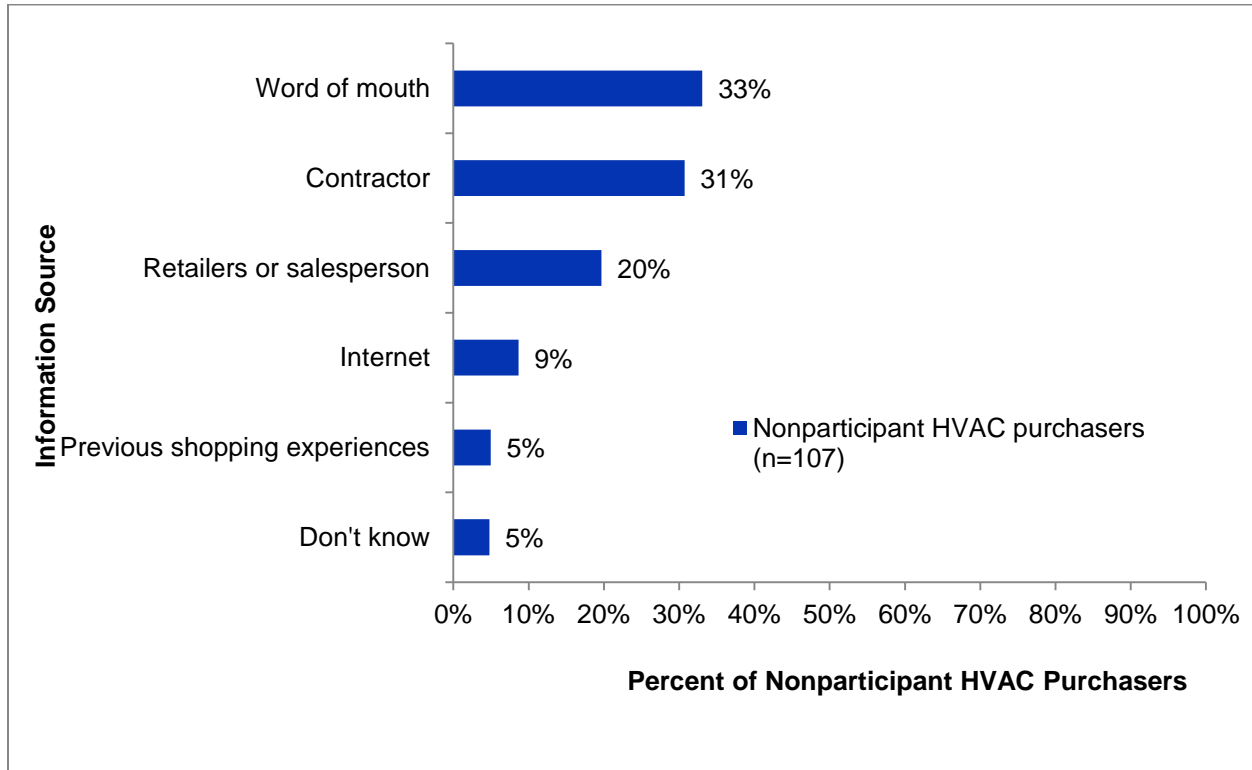
Most (83%) nonparticipants did not purchase a new HVAC system since 2008. Those that did were most likely to purchase a furnace (Figure 5-17). Because so few respondents purchased HVAC equipment, and furnaces were the most commonly-purchased equipment, this section aggregates all the findings for the different types of HVAC equipment.

Figure 5-17. HVAC Type Purchased



Word of mouth (33%) was the most commonly-mentioned source of information about HVAC equipment. Contractors (31%) and retailers/salespeople (20%) were also common answers (Figure 5-18).

Figure 5-18. HVAC Information Source



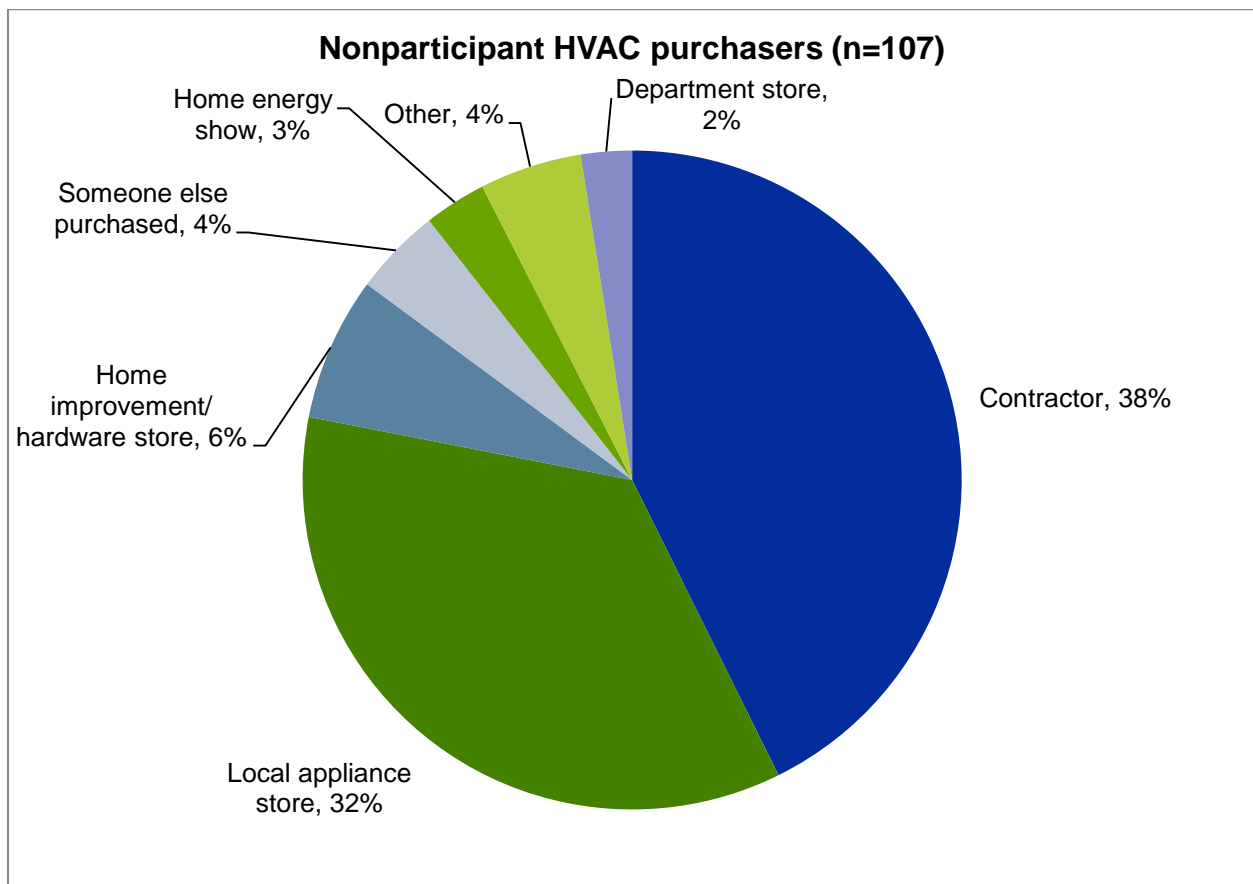
Note: Total exceeds 100% because multiple answers were accepted. Other answers included: Manufacturer; Consumer Reports or related magazines, electric/gas utility, other magazines newspaper, and other uncategorized responses.

There were several statistically significant differences depending on respondent characteristics:

- **Income:**
 - Respondents with incomes of \$50,000 or more were more likely (53% of respondents) than those with income less than \$50,000 (28%) or those who did not report income (14%) to get HVAC equipment information from contractors.
 - Respondents with incomes of \$50,000 or more (29%) or those who did not report income (25%) were more likely than those with less than \$50,000 income (10%) to get HVAC information from a retailer or salesperson.
- **Program awareness:** Respondents aware of a rebate program were more likely than those unaware to get HVAC equipment information from a retailer or salesperson (26% vs. 12%).

- *CFL purchase frequency:* Respondents who always purchase CFLs were more likely (47%) than those who sometimes purchase CFLs (21%) to get HVAC equipment information from contractors.
- *Energy reduction concern:* Respondents unconcerned with reducing their home’s energy use were more likely (55%) than those concerned (28%) to get HVAC information from contractors.
- The most common source of HVAC purchases was contractors (38%). Local appliance stores were also common (32%) and a noticeable portion (11%) of the nonparticipants who purchased HVAC equipment since 2008 did not know or remember where they got it (Figure 5-19). Note, the 2011 HVAC rebate program evaluation did not ask about purchase location, so no comparisons to program participants are possible.

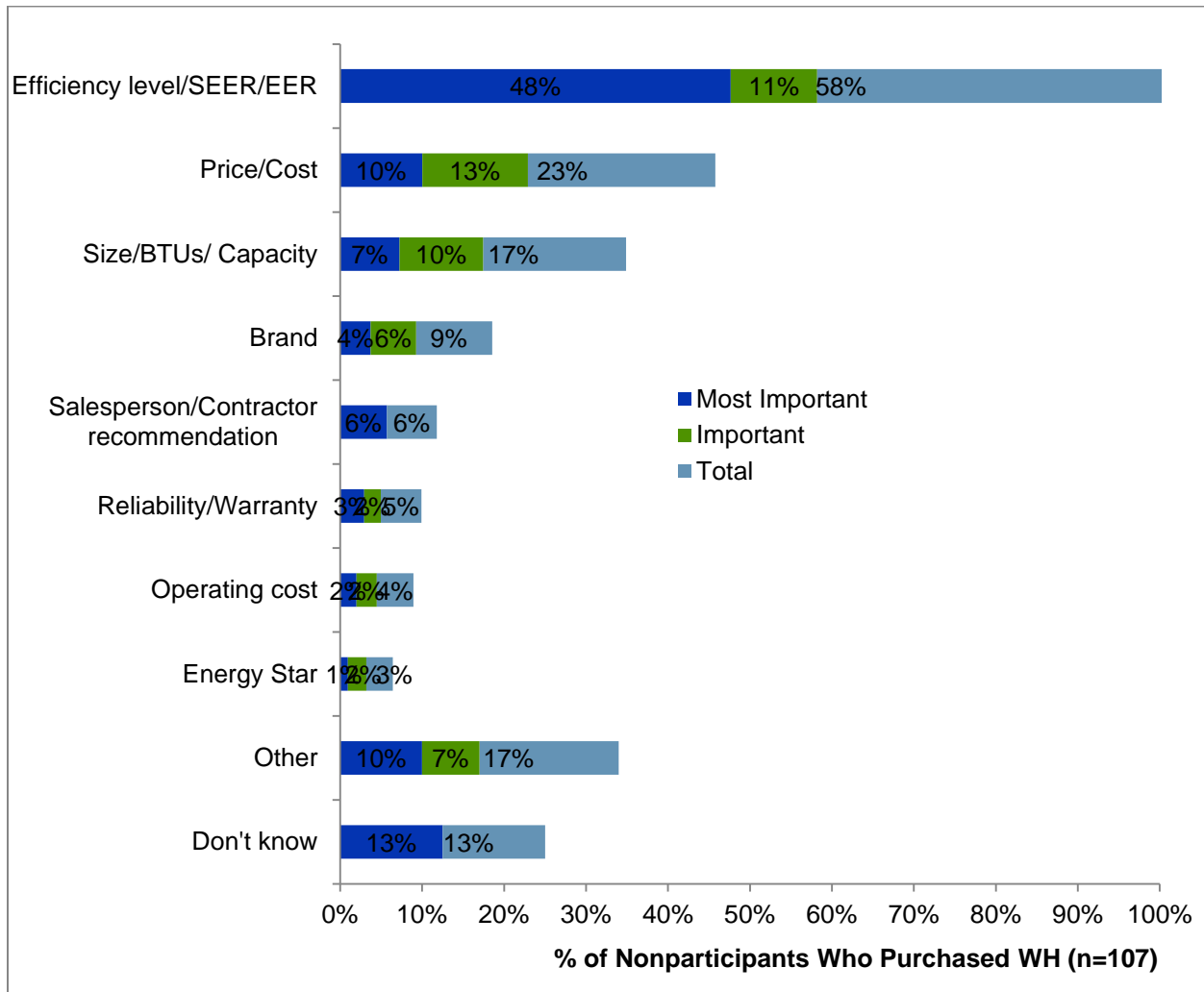
Figure 5-19. HVAC Purchase Location



Efficiency was the most commonly-mentioned important feature (58%). It was also the most commonly-mentioned of the “most important” features (48%). The only other features of major importance were

price (23%) and size (17%). Despite efficiency being the most important feature, few respondents (3%) mentioned ENERGY STAR as being important (Figure 5-20).

Figure 5-20. HVAC Important Features



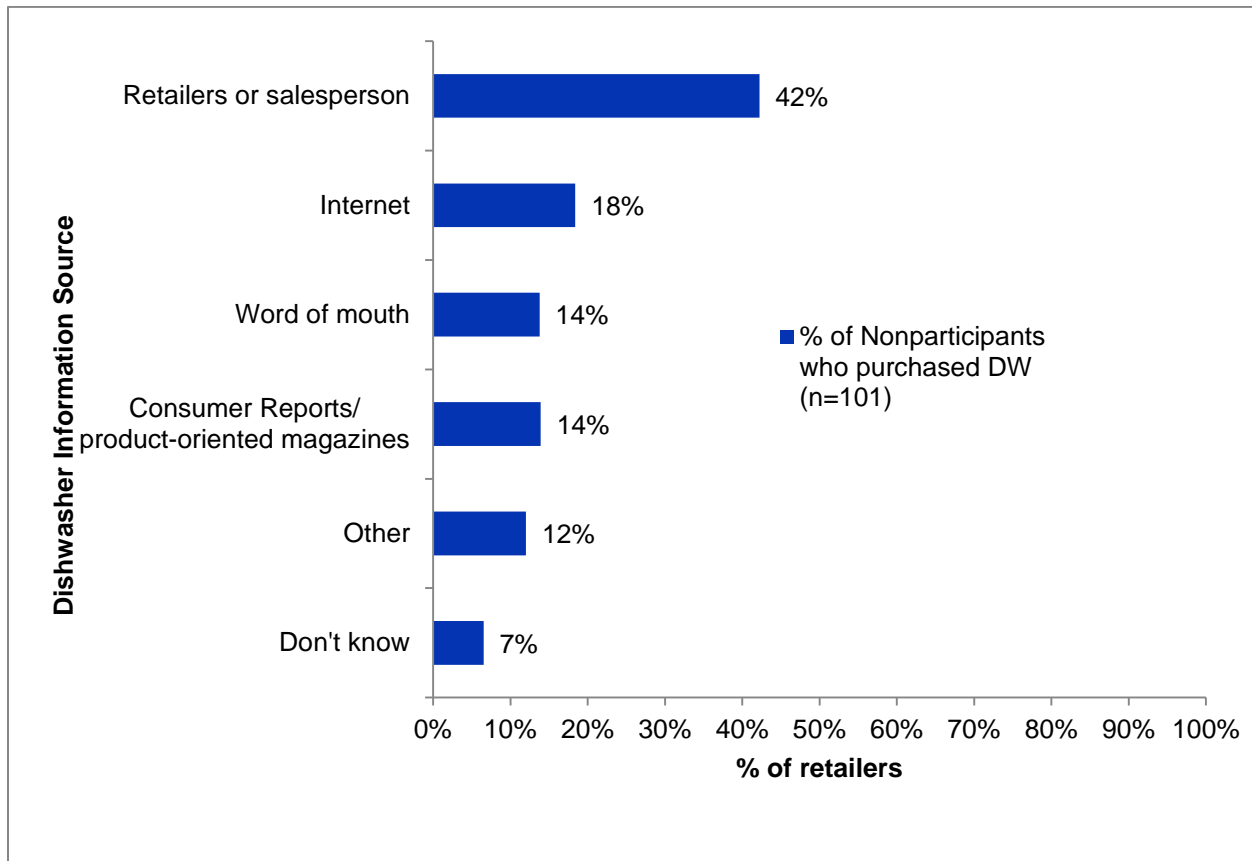
Note: Total exceeds 100% because multiple answers were accepted. Other answers included: type of energy used-gas/electric, ease of repair, safety, has to fit/work with existing equipment, and uncategorized other answers.

5.1.7.5 Dishwasher Purchases

The survey asked nonparticipants whether they had purchased a dishwasher since 2008. About thirteen percent had. For those nonparticipants who purchased a dishwasher, the survey further asked them where they got information about which one to buy, where they bought it, and what were the important features of it.

The majority of nonparticipants got information about what to purchase from a retailer or salesperson (42%). Internet (18%), word of mouth (14%), and Consumer Reports or related magazines (14%) were also common answers (Figure 5-21).

Figure 5-21. Dishwasher Information Sources



Note: Total exceeds 100% because multiple answers were accepted. Other answers included: contractors, newspapers, past experience, manufacturers, radio, and uncategorized other answers.

There were several statistically-significant differences depending on respondent characteristics.

- Education:
 - Respondents with a four year college degree or more education were more likely (19%) than those with some college (6%) to get information about dishwashers from Consumer Reports or other product-oriented magazines.
 - Respondents with a high school diploma or less were much more likely (80%) than those with some college (44%) or a four year degree or more education (34%) to get information from retailers or salespeople.



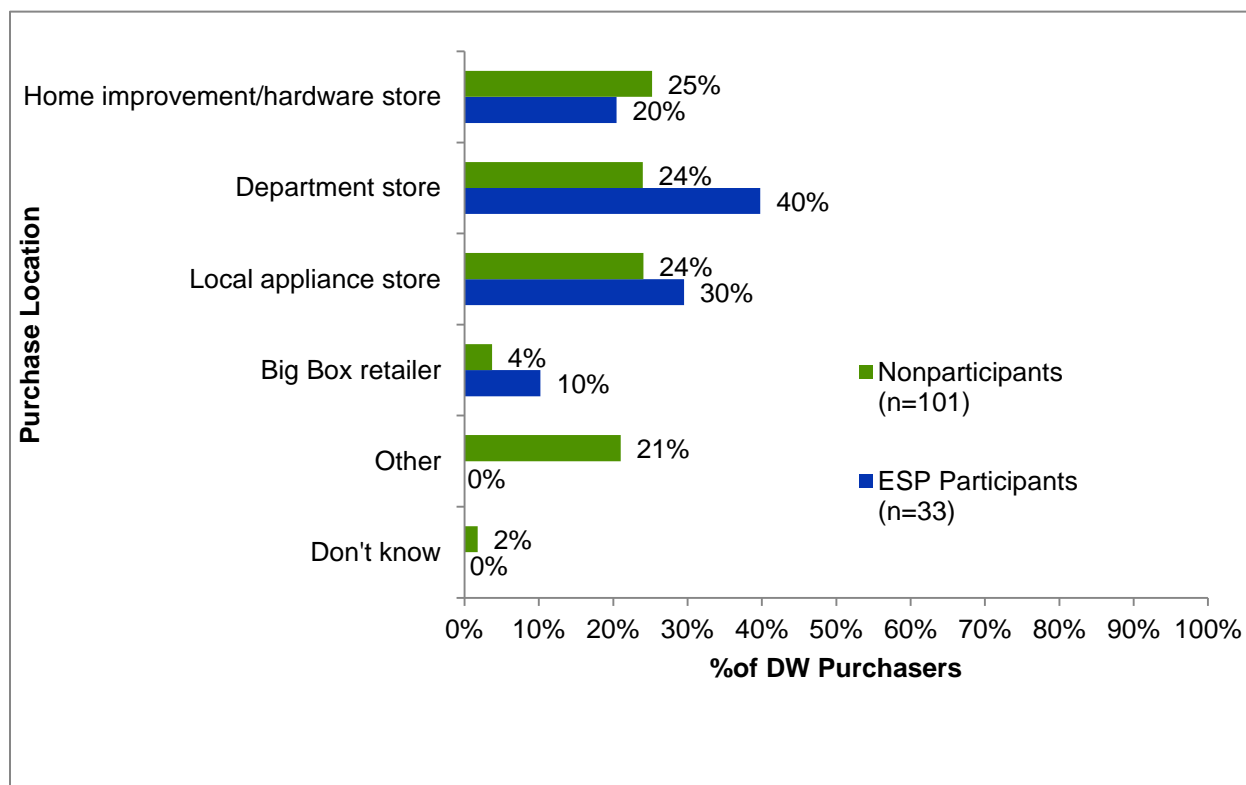
- Respondents with some college (26%) or a four year degree or more (23%) were more likely than those with a high school degree or less (3%) to get information from the Internet.

- Income:
 - Respondents who did not report income were more likely (24%) than those with \$50,000 or more income (4%) to get information about dishwashers from Consumer Reports or other product-oriented magazines.

 - Respondents with incomes less than \$50,000 were more likely (58%) than those who did not report income (34%) to get information about dishwashers from retailers or salespeople.

Nonparticipants most commonly purchased their dishwashers at home improvement or hardware stores (25%), department stores (24%), and local appliance stores (24%). Compared to ESP program participants, nonparticipants were more likely to purchase dishwashers at home improvement or hardware stores, and less likely to purchase them at department stores, local appliance stores, or big box retailers (Figure 5-22).

Figure 5-22. Dishwasher Purchase Location





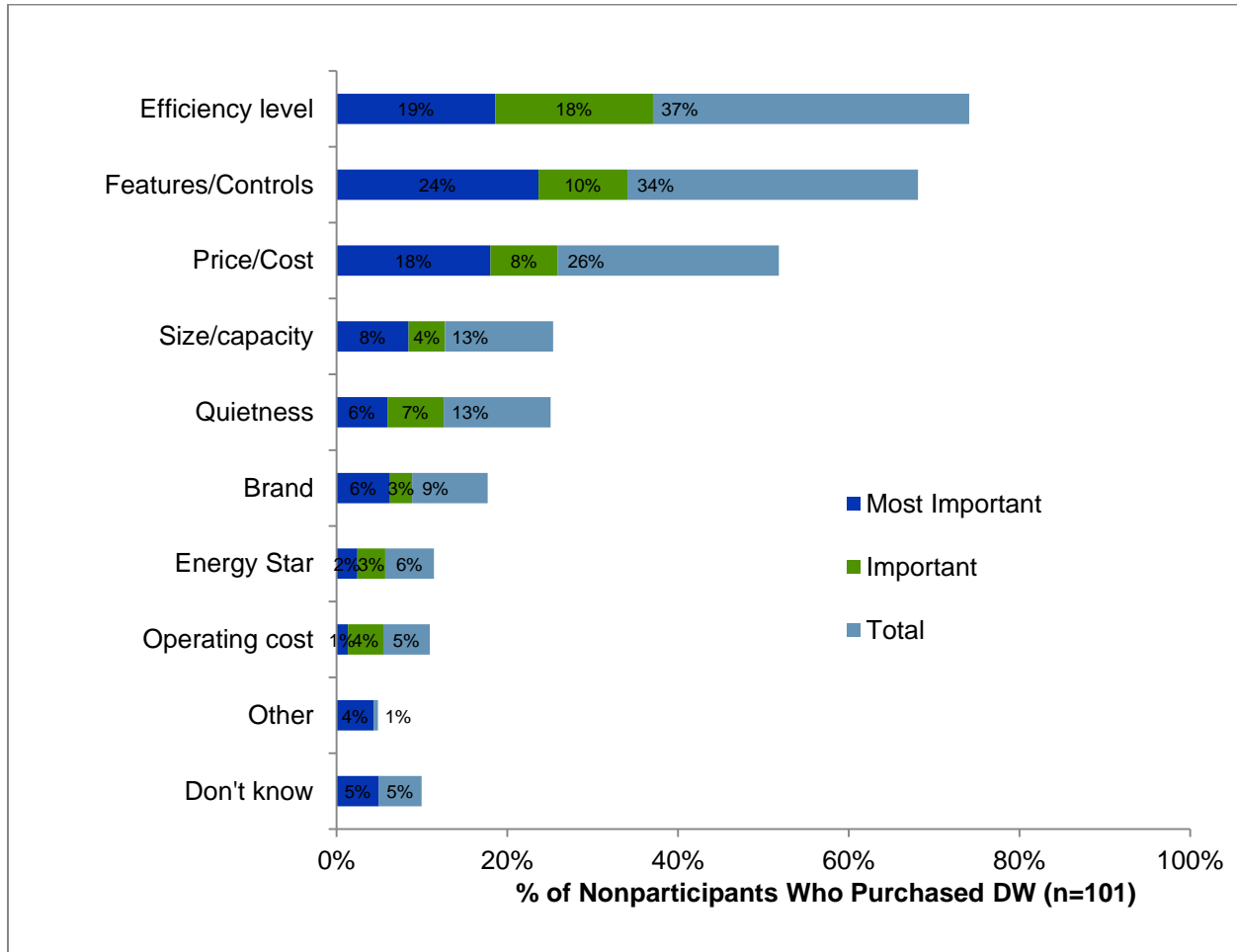
Note: Other responses included: warehouse stores, manufacturers, Internet, mail order catalogs, contractors, rentals and uncategorized other responses.

There were several statistically-significant differences depending on respondent characteristics.

- Department store:
 - Respondents with a four year degree or more were more likely (32%) than those with a high school degree or less (12%) to purchase a dishwasher at a department store.
 - Men were more likely (38%) than women (14%) to purchase a dishwasher from a department store.
- Local appliance store:
 - Respondents who live in the Upper Peninsula were more likely (43%) than those in the Lower Peninsula (20%) to purchase a dishwasher from a local appliance store.
 - Respondents who were aware of rebate programs were more likely (32%) than those unaware (13%) to purchase a dishwasher at a local appliance store.
 - ENERGY STAR-aware respondents were more likely (30%) than the unaware (9%) to purchase a dishwasher from a local appliance store.

Nonparticipants most often mentioned efficiency (37%), features and controls (34%), and price (26%) as an important dishwasher features.. Features and controls were the most commonly-mentioned most important feature (24%; Figure 5-23).

Figure 5-23. Dishwasher Important Features



Note: Total exceeds 100% because multiple answers were accepted. Other answers included: color, reliability/warranty, salesperson/contractor recommendation, and uncategorized other answers.

There were several statistically significant differences depending on respondent characteristics.

- Efficiency:
 - *Education:* Respondents with a four year degree or more were more likely (46%) than those with some college (21%) to say that the efficiency was an important feature for dishwashers.
 - *Income:* Respondents with incomes of \$50,000 or more were more likely (45%) than those with less income (27%) to say that efficiency was an important feature.



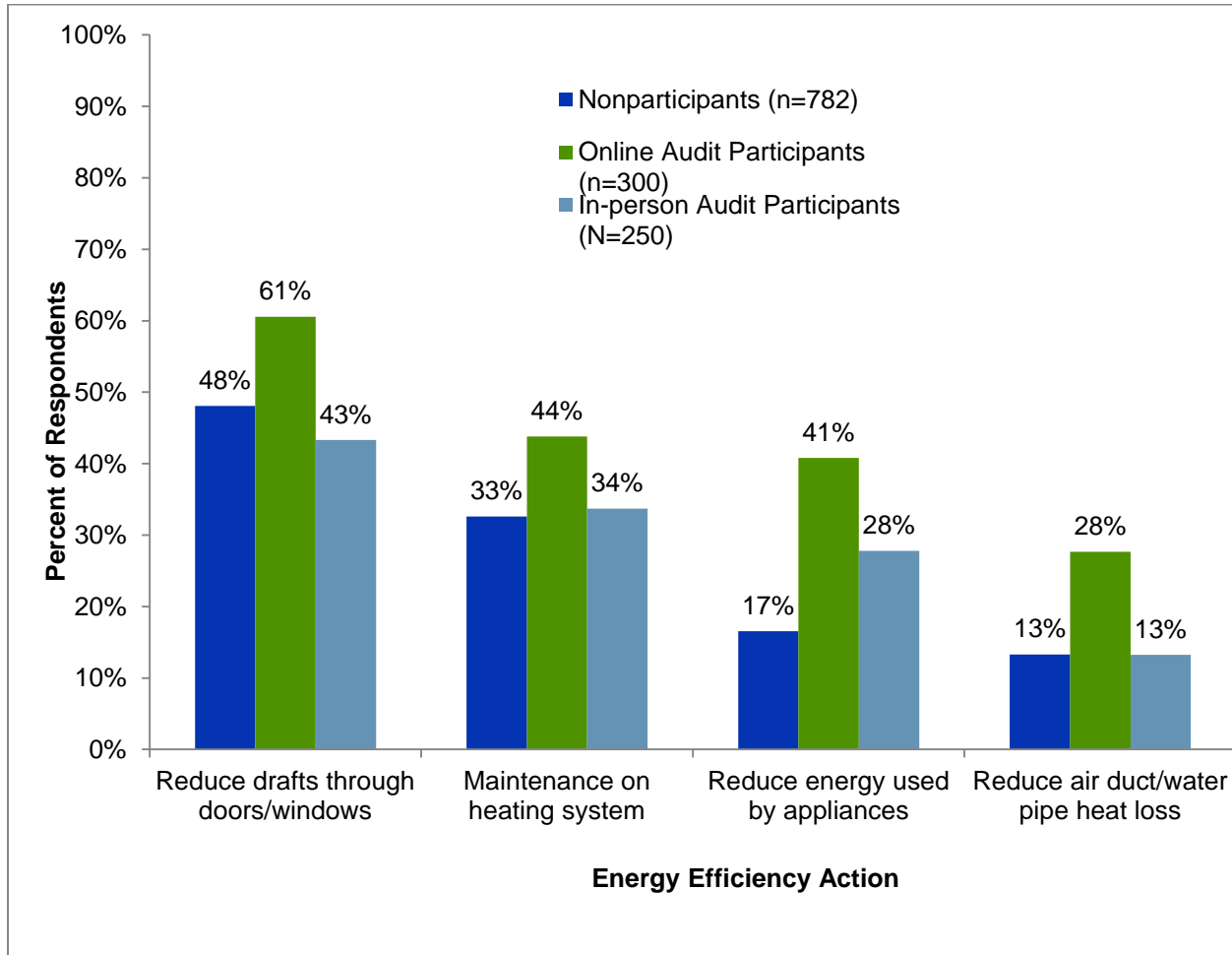
- *Energy reduction concern:* Respondents concerned with reducing their home energy use were more likely than those not concerned to say efficiency was an important characteristic (41% vs. 11%).
- **Features and Controls:**
 - *CFL purchase frequency:* Respondents who sometimes purchase CFLs were more likely (44%) than those who always purchase CFLs (24%) or never purchase them (17%) to say features and controls was an important characteristic for dishwashers.
 - *ENERGY STAR awareness:* Respondents who were aware of ENERGY STAR were more likely (40%) than those not aware of ENERGY STAR (17%) to say features and controls was an important feature.
- **Price:**
 - *Gender:* Men were more likely (37%) than women (18%) to say that price was an important characteristic for dishwashers.

5.1.8 Energy Efficiency Actions

The survey asked a series of questions to assess whether nonparticipants had taken any energy-efficiency-related actions in the last two years. First, it asked a series of high-level questions to determine categories of actions that nonparticipants could have taken. If a respondent answered yes to a category, the survey asked about whether the respondent had done any of a larger list of more specific actions. DNV KEMA took these actions from the list recommended in the Online Audits and In-person Audits available through the program. This section provides comparisons to both sets of audit participants.

Less than half (48%) of the nonparticipants said they took any actions to reduce drafts coming in through their doors or windows. About one-third (33%) said they performed maintenance on their home's main heating system. Less than one-fifth (17%) said they took actions to reduce the amount of energy their home appliances use, and only 13 percent said they did anything to prevent heat loss in their air ducts or water pipes. Online Audit participants were more likely to take actions in all categories. Nonparticipants indicated taking about the same percentage of energy efficiency actions as In-person Audit participants, with the exception of reducing energy used by appliances (17% vs. 28%) (Figure 5-24).

Figure 5-24. Energy Efficient Actions



When looking at the more specific actions (Table 5-5), the most common energy efficiency actions taken by nonparticipants were to get their heating system tuned by a professional (20%), caulk (16%), replace furnace or heat pump filters (14%) install weather stripping (13%), and install new doors and windows. In comparison to nonparticipants, both online and in-person audit participants were more likely to set back thermostat temperature, insulate hot water pipes, replace/clean dryer vents, and replace non-working parts of furnaces/heat pumps. The few exceptions were that audit participants were more likely to replace furnace/heat pump filters, insulate hot water pipes, or replace dryer vents.



Table 5-5. Specific Energy Efficient Actions

Action	Nonparticipants (n=782)	Online Audits (n=300)	In-person Audits (n=250)
Had furnace or boiler tuned-up by a professional	20%	19%	11%
Caulked windows or doors	16%	21%	15%
Replaced furnace or heat pump filter	14%	36%	15%
Installed weather stripping on windows or doors	13%	26%	22%
Installed new doors and windows	11%	17%	19%
Added plastic to windows	9%	18%	15%
Set back thermostat temperature	7%	31%	17%
Installed new insulation	7%	9%	5%
Insulated hot water pipes	6%	40%	22%
Lowered water heater temperature	5%	22%	10%
Installed sweeps under your door	5%	13%	10%
Added window shades or curtains	5%	15%	7%
Insulated air ducts	4%	10%	6%
Replaced or cleaned dryer vent	3%	26%	22%
Used clothesline to dry clothes	2%	17%	7%
Installed damper or internal seal on chimney	2%	8%	9%
Insulated attic access doors	2%	11%	7%
Increase refrigerator or freezer temperature	2%	12%	5%
Added weather stripping to attic access doors	2%	6%	3%
Replace non working parts of furnace/heat pump	1%	19%	17%
Sealed air ducts	1%	11%	13%
Installed a new threshold	1%	4%	3%
Installed a water heater blanket	1%	5%	1%
Added occupancy or daylight sensors to lights	1%	5%	0%