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**Subject** Focus on Energy Evaluation

**Targeted Home Performance with ENERGY STAR®  
Nonparticipant Survey Results**

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**To** Oscar Bloch;  
Public Service Commission of Wisconsin  
**cc** Suzanne Harmelink;  
Wisconsin Energy Conservation Corporation

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**From** Steven Drake and Lark Lee;  
PA Consulting Group

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contributed critical review and analysis

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## Introduction

Targeted Home Performance with ENERGY STAR® (Targeted HPWES), implemented by the Wisconsin Energy Conservation Corporation (WECC), provides weatherization services to eligible households served by participating natural gas and electric providers. The objective of the Targeted HPWES program is to provide Wisconsin residents who have limited incomes and resources with an effective opportunity to increase the energy efficiency, affordability, safety, durability, and comfort of their homes.

Eligible households have incomes just over the income eligibility requirements for the state Weatherization Assistance Program (WAP). In past years, Targeted HPWES income eligibility requirements were between 150 percent and 200 percent of the federal poverty level (FPL). During 2009, income eligibility changed as follows: 150 percent to 250 percent from January to March 2009, 200 percent to 250 percent from March to July 2009, then increased to between 60 percent and 80 percent of state median income<sup>1</sup> in response to the increase in income eligibility for WAP.

To characterize the new eligible population, PA Consulting Group (PA) conducted telephone interviews with eligible households from July 30 through August 16, 2009. PA last conducted nonparticipating customer interviews for Targeted HPWES as part of a baseline study in 2002. Considering the amount of time that has passed since that survey and the change in income eligibility levels, the demographics, attitudes, and energy use of customers targeted for the program may have changed significantly. In addition, barriers and interest in participating in the program may also be different for this population compared to the baseline study. To assess



**focus on energy**<sup>sm</sup>

*The power is within you.*

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<sup>1</sup> Income eligibility is determined by applicants' prior three months of income as opposed to annual income.

these characteristics, PA conducted interviews with nonparticipants—households that have been recently targeted for the program, but have not yet participated.

The nonparticipant survey addresses the following key questions:

- What are the demographic and household characteristics of this population? How do these characteristics compare to the baseline population?
- Are these customers aware of the program, and if yes, how did they learn of the program?
- What is their interest in participation?
- What are the attitudes and actions surrounding energy use in this population?
- Why have households not participated in the program?
- What are some ways the program could try to increase participation?

## Sample

The nonparticipant survey was conducted with customers who may be eligible for Targeted HPWES, but have not yet participated in the program. The state energy assistance program provides WECC a list of households that applied for energy assistance, but did not qualify because they were over the income limits. WECC sent marketing materials to these households informing them about the services Targeted HPWES offers. From this list, WECC supplied PA the customers who have not yet participated in the program. Of these, 281 customers were on record as having a household income of 200 percent FPL or higher (ranging from 200 percent FPL to 278 percent FPL) and therefore most likely to be eligible for Targeted HPWES under the new income guidelines. PA attempted to contact a census of these 281 customers.

From July 30 through August 16, 2009, PA completed interviews with 66 customers. The reader is referred to Appendix A for detailed response rate results and sample information.

It is important to note the limitations of the sample's representativeness of the target population. As the available sample frame consists of households who originally applied for energy assistance, they may be different from the larger eligible population in some relevant ways, such as their knowledge of and interest in assistance programs and the extent to which they are able to utilize available services. In addition, over half of respondents (59 percent) reported that their annual household income was not within Targeted HPWES's income eligible range, based on household size. Of these, all but one respondent who refused said that their income was less than the eligible range. Under current program requirements, these respondents would most likely be eligible for WAP instead of Targeted HPWES. However, considering the fact that lower-income households often move in and out of income ranges as established in an earlier low-income longitudinal study<sup>2</sup>, especially in the context of current

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<sup>2</sup> Lark Lee, Pam Rathbun and Laura Schauer, PA Government Services Inc. *Low-income Public Benefits Evaluation, Year 3 Low-income Program Evaluation—Executive Summary*. October 2004.

economic conditions, we still included these customers in our analysis. We believe comparisons with the 2002 baseline survey are still valid since the 2002 baseline sample also consisted of lists provided to WECC of households that had applied for energy assistance, but were over the income limits. However, in the 2002 baseline survey, customers whose income did not fall within the program requirements at that time were not interviewed, but they were of a similar income range as this year's study because of the lower income eligibility requirements at that time.

Considering these limitations, as well as the limited number of surveys we were able to complete from the available sample, the characterizations and comparisons in this memo should be viewed qualitatively.

## Key Findings

Below are a few key findings from the nonparticipant survey. More detailed survey results are presented later in this report.

- Issues with heating systems were fairly prevalent among nonparticipants as one in five respondents felt that their heating system was not working correctly. Some of the issues mentioned by these respondents included unequal heat distribution throughout the home, cutting out, loud or strange noises coming from the heating system, and insufficient heat supply.
- The majority of customers do not have their heating or cooling system serviced regularly. Nearly half of respondents reported either never having their heating system professionally serviced or only having it serviced when in need of repair.
- About a third of customers are not very knowledgeable about their water heaters. Thirty-eight percent of respondents did not know at what temperature their main water heater was set and 30 percent did not know how old their main water heating water heater was.
- A significant percent of customers feel the energy efficiency or insulation of their home could be improved. Thirty-seven percent surveyed felt their home was not very energy efficient and 42 percent felt their home was poorly insulated.
- Customers appear receptive to energy efficiency improvements. Sixty out of sixty-six respondents reported making at least one energy efficiency improvement to their home in the past two years, with the most prevalent improvement being installing compact fluorescent light bulbs (CFLs). The most prevalent reason for making these improvements was to save money on their utility or water bill.
- Energy bill costs are a high concern for customers. Nearly 90 percent of respondents said that lowering their energy bill costs is very important to them. Over two thirds of customers have set up or discussed setting up a bill payment plan with their utility. This large percentage may be a result of the sample as these households may have applied for energy assistance as a result of contacting their utility about a payment plan.
- There is evidence that awareness of the program has increased considerably since 2002. Twenty-four percent of 2009 respondents had heard of Targeted HPWES

before the survey, up from five percent in the 2002 baseline study. The two main ways customers heard of the program was either from their utility or through Focus.

- Interest in program services is high. Sixty-nine percent of nonparticipants expressed some interest in the services offered by Targeted HPWES, up from 56 percent in 2002. Sixty-one percent said they would be “very interested.” The most frequent reasons for being interested in Targeted HPWES was wanting to reduce utility bills followed by wanting to learn how to save energy.
- Barriers to participation from the survey included not being able to afford the program’s co-payment, uncertainty of program eligibility, and residents not owning the home in which they live. Three respondents said they would not be interested in the program because the co-payment is too high or they could not afford to pay anything toward improvements. Two of these customers said they would be more interested in the program if the program would set up a monthly payment plan or short-term loan.

## Results

### House Characteristics

Table 1 presents a snapshot of the type of residences occupied by nonparticipants. On average, respondents had just over one and a half stories and just over 1,500 square feet of living space. Over one-third of respondents did not know when their home was built. In the cases where respondents did know when their home was built, 61 percent said their home was built before 1970.

**Table 1. General House Characteristics by Type of Ownership**

Characteristic	Rent (N=29)		Own (N=37)		Overall (N=66)				
	N	Statistic	N	Statistic	N	Statistic			
Average number of stories in residence	29	1.66	37	1.54	66	1.59			
Average square footage of residence	6	1,547	16	1,541	22	1,542			
Has living space in basement?	29	31%	37	24%	66	27%			
When residence was built	29	Before 1970	28%	37	Before 1970	49%	66	Before 1970	39%
		1970s	3%		1970s	14%		1970s	9%
		1980s	3%		1980s	14%		1980s	9%
		1990-1994	0%		1990-1994	5%		1990-1994	3%
		1995-1999	0%		1995-1999	0%		1995-1999	0%
		2000s	3%		2000s	5%		2000s	5%
		Don't know	62%		Don't know	14%		Don't know	35%
Number of units in residence	29	Single family	45%	37	Single family	95%	66	Single family	73%
		Two units	52%		Two units	5%		Two units	26%
		Three units	3%		Three units	0%		Three units	2%
Has plans to remodel home or currently remodelling?	29	14%	37	35%	66	26%			

Source: Targeted HPWES Nonparticipant Survey (2009), questions S4, S4a, H1, H2, H3, H4, and H5

Nearly three-quarters of home were single family dwellings. This distribution mirrors the baseline survey, where 74 percent of respondents resided in single family homes and 26 percent lived in two-unit homes.

The vast majority of respondents purchased their electricity from one of four Wisconsin utilities: Alliant Energy, Wisconsin Electric Power Company (We Energies), Wisconsin Public Service Corporation, or Xcel Energy (Northern States Power). Table 2 shows the distribution of respondents' electric utility.

**Table 2. Electric Utility (n=66)**

Electric Utility	Number of Respondents
Wisconsin Electric Power Company	20 (30%)
Xcel Energy	16 (24%)
Wisconsin Public Service Corporation	15 (23%)
Alliant Energy	12 (18%)
Other	3 (5%)

Source: Targeted HPWES Nonparticipant Survey (2009), question S1

Fifty-six percent of respondents were homeowners, while 44 percent rented their residence. The sample for the baseline survey conducted in 2002 consisted of a slightly higher proportion of homeowners (61 percent). The average household size in the sample was 2.95 persons, compared to 2.73 in the baseline sample. On average, respondents reported paying \$598 per month in their mortgage or rent. Table 3 summarizes the demographic information collected from those surveyed and compares these demographics to the 2002 baseline survey, where data is available. In terms of demographics, 2009 and 2002 respondents were similar with the only statistical difference being in the percentage of widowed respondents.

**Table 3. Summary of Sample Demographics and Comparison to 2002 Baseline Survey**

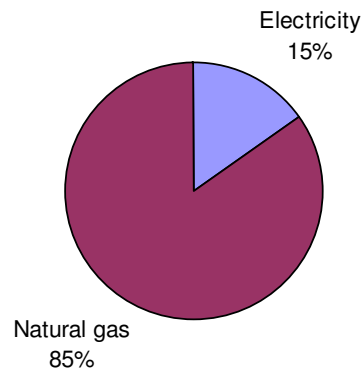
Characteristic	2009 Survey		2002 Baseline Survey			
	N	Statistic	N	Statistic		
Own/rent	66	Own	254	Own	61%	
		Rent		44%	Rent	39%
Average household size	66	2.95 persons	254	2.73 persons		
Highest level of education	65	1st to 11th grade	N/A	N/A		
		12 No diploma				6%
		HS Grad / GED				43%
		Some college				25%
		2-year degree				9%
		Bachelor's				12%
Master's	2%					
Average monthly rent/mortgage	65	\$598	N/A	N/A		
Marital status	66	Married	254	Married	34%	
		Widowed		8%	Widowed	17%
		Divorced		27%	Divorced	26%
		Separated		6%	Separated	2%
		Never married		23%	Never married	21%

Source: Targeted HPWES Nonparticipant Survey (2009) and Targeted HPWES Baseline Survey (2002)

## Heating System

The vast majority of respondents used natural gas as the primary fuel to heat their home, as shown in Figure 1.

**Figure 1. Main Fuel Used to Heat Home (n=66)**



Source: Targeted HPWES Nonparticipant Survey (2009), question S1a

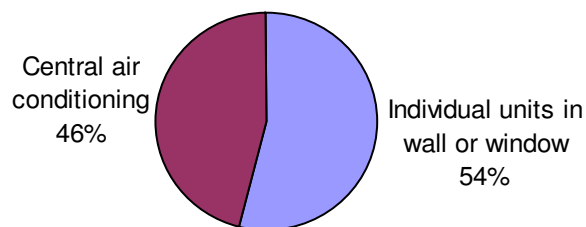
The most common type of heating system mentioned was a central forced-air furnace (70 percent), followed by a water boiler (12 percent). Other systems mentioned include baseboard or resistance heating and a ground-source heat pump. The age of the heating systems varied widely among respondents' homes. Over half of all respondents' reports on the age of their heating system were split on two poles of the survey's scale, with 26 percent less than five years old and 27 percent older than 15 years old. Twenty-six percent of respondents could not tell us how old their heating system was.

Twenty percent of respondents felt that their heating system is not working correctly. Some of issues mentioned by these respondents include unequal heat distribution throughout the home, cutting out, loud or strange noises coming from the heating system, and insufficient heat supply.

When asked how often they have their heating system professionally serviced, the highest proportion of respondents said only when it needs repair (30 percent). Also, five respondents said they never have had their heating system professionally serviced. Interestingly, the second most frequent response was at least once per year (18 percent).

## Air Conditioning System

Fifty out of sixty-six respondents reported having some type of air conditioning system in their home (76 percent). As shown in Figure 2, the majority of customers relied on individual wall or window air conditioning units as their main type of air conditioning system. In addition, over half (16 of 27) of those who relied on individual air conditioning units used only one unit, while the rest all reported having two units.

**Figure 2. Main Air Conditioning Equipment Used in Residence (n=50)**

Source: Targeted HPWES Nonparticipant Survey (2009), question H11

For those with central air conditioning, 16 of 23 respondents knew about how old their system was. Six of these respondents reported that their central air conditioning system was less than five years old, while five were between five and nine years old, four between ten and 15 years, and one system was older than 15 years.

Almost half of respondents who rely on individual wall or window units reported that at least one of their units was less than five years old (13 of 27 responses). Five respondents said one of their units was between five and nine years old, three between ten and 15 years old, and four older than 15 years.

As with heating systems, the highest proportion of respondents with air conditioning, whether central or individual units, reported having their system professionally serviced only when in need of repair (7 out of 23 for central air conditioners and 15 out of 27 for window or wall units). For central air conditioner users, however, the next highest response was at the opposite end of the spectrum, with 6 out of 23 respondents having their air conditioner systems serviced least once per year.

### **Water Heating System**

Overall, respondents appeared to have less knowledge on details about their water heating system than their heating and cooling equipment. PA discovered that a sizeable portion of respondents were unable to answer several of the survey questions related to water heating.

Over 90 percent of respondents said they felt they have adequate hot water (61 of 66). Nearly 90 percent of respondents (58 of 66) had one water heater, while the other eight respondents each had two water heaters in their home (six of these eight lived in duplexes). The vast majority of respondents (83 percent) were also able to tell us what type of fuel used for their water heating system. Of these respondents, 67 percent said their water heaters were gas fueled while 34 percent had electric water heaters.

Further, 49 of 66 respondents were able to specify the type of water heating system in their home. All but one of these respondents reported they had a conventional tank system. Most respondents reported having small or medium sized water heater tanks. Sixteen respondents said that their tank was between 30 and 49 gallons, followed by twelve reporting tanks between 50 and 69 gallons, five with tanks less than 30 gallons, and three with large tanks between 70 and 89 gallons.



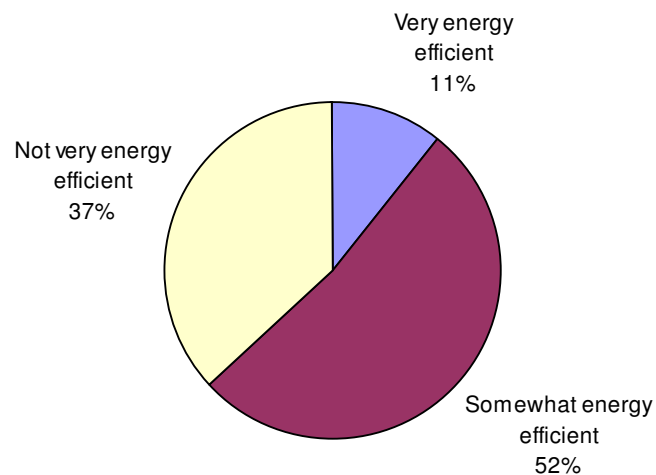
Thirty percent of all respondents did not know the age of their main water heater. Of those who specified their water heater's age, 43 percent said it was less than five years old. The next most frequent age group on the opposite end of our scale, with 24 percent reporting their main water heater was more than 15 years old.

For water heating, a large proportion of respondents were unable to specify at what temperature their water heater is set (38 percent). Over two-thirds (68 percent) of those who did know the temperature setting had their water set at 129 degrees or lower.

### Perception of Home Efficiency

In addition to the physical infrastructure of their homes, PA asked respondents about their perception of the energy efficiency of their home. As shown in Figure 3, only 11 percent of respondents thought their home was very energy efficient. Just over half thought their home was somewhat energy efficient and 37 percent who thought their home was not very energy efficient. These last two groups of respondents noted several reasons why they feel their home is not very energy efficient. The most prevalent reasons related to deficiencies with the home's envelope, with 38 percent saying their home is drafty, does not feel tight, or needs insulation and 36 percent saying they need new windows. Also, 27 percent noted the old age of their home. Additional reasons included having an old furnace, boiler, water heating system, or appliances along with not doing anything to make the home more efficient.

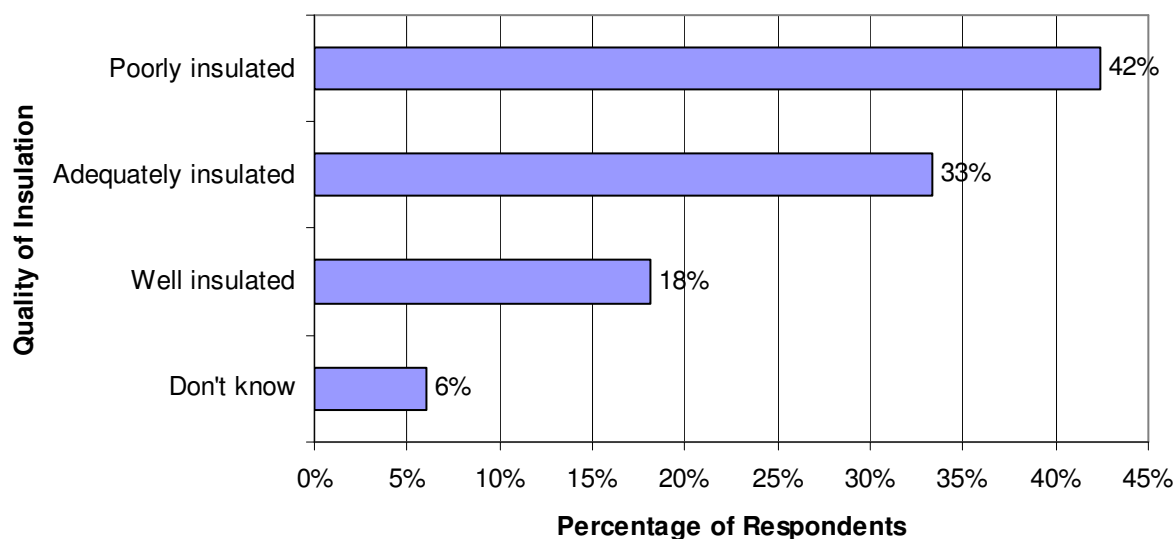
**Figure 3. Perception of Energy Efficiency of Home (n=65)**



Source: Targeted HPWES Nonparticipant Survey (2009), question E2

PA also asked customers how well they think their home is insulated, as improving insulation is a key service of Targeted HPWES. As shown by Figure 4, 42 percent felt their home was poorly insulated, compared to only 18 percent who thought their home was well insulated. This result clearly reveals a perceived need for better insulation among customers who have not participated in the program.



**Figure 4. Perception of the Quality of Insulation in Home (n=66)**

Source: Targeted HPWES Nonparticipant Survey (2009), question H21

Some research in Wisconsin has shown that residential customer's perception of the efficiency of their homes may not always accurately reflect reality. In a 2000 Energy Center of Wisconsin (ECW) study of owner-occupied single-family homes, auditors found that 22 percent of the homes included in the study were inadequately insulated.<sup>3</sup> Of these homes, over half (55 percent) of homeowners thought their home was adequately or well insulated. This finding suggests that many residential customers overestimate the quality of the installation installed in their homes.

### ***Energy Use and Energy Efficiency Actions***

#### **Energy Use**

PA asked nonparticipants a series of questions relating to their household's heating, air conditioning, and water heating energy usage. Table 4 shows the percentage of respondents who have their main heating thermostat turned on and the average temperature setting of those thermostats for different times during the day. On average, respondents set the temperature of their main heating thermostat about two degrees higher during the evening hours compared to during the day and overnight.

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<sup>3</sup> Scott Pigg and Monica Nevius. *Energy and Housing in Wisconsin: A Study of Single-Family Owner-Occupied Homes*. Energy Center of Wisconsin. November 2000.

**Table 4. Average Temperature Setting of Main Heating Thermostat Throughout the Day (n=66)**

	Heating Thermostat Turned On	Heating Thermostat Temperature (°F)
Daytime (7 am to 5 pm)	97%	67.6
Evening (5 pm to 10 pm)	100%	69.7
Overnight (10 pm to 7 am)	100%	67.9

Source: Targeted THPWES Nonparticipant Survey (2009), questions H9a, H9b, and H9c

Respondents with air conditioning reported running their main air conditioning system just over two months per year, on average. Twenty-nine respondents said they set their main system to temperature setting (i.e., high, medium, or low) while 20 respondents said they set their system to a specific temperature. Table 5 shows the percentage of users who typically have their air conditioning turned on and the setting or temperature at which they have their system set. While those who set their system to a specific temperature reported fairly consistent settings throughout the day, respondents using setting levels set their systems higher during the day and lower during overnight.

**Table 5. Setting of Main Air Conditioning System Throughout the Day**

	Air Conditioning Set to Specific Temperature (n=29)		Air Conditioning Set to Temperature Level (n=20)		
	A/C Turned On	Avg. A/C Temperature (°F)	A/C Turned On	A/C Setting	
Daytime (7 am to 5 pm)	97%	70.9	75%	High	40%
				Medium	47%
				Low	13%
Evening (5 pm to 10 pm)	79%	71.0	95%	High	21%
				Medium	63%
				Low	16%
Overnight (10 pm to 7 am)	69%	70.3	65%	High	15%
				Medium	23%
				Low	62%

Source: Targeted HPWES Nonparticipant Survey (2009), questions H15 through H15s\_c

## Energy Efficiency Actions

In addition to how respondents use energy, PA asked if they recently had made any improvements to make their home more energy efficient. Sixty out of sixty-six nonparticipants reported making at least one energy efficient improvement in the past two years.

Overall, the most common improvements were installing CFLs (79 percent) and installing low-flow showerheads or aerators (39 percent). Table 6 shows the proportion of respondents who made various improvements during that time, by those who made improvements through an energy efficiency program and those who have not. Some of the reported improvements seem higher than plausible for the population given average equipment lifetimes. Most prominent are the examples of fifteen percent reporting they had installed a high-efficiency furnace and fourteen percent reporting they had installed a high-efficiency water heater. In past research, we have found customers often do not understand what is meant by “high-efficiency” in terms

of equipment and tend to over report it. Therefore, we believe the following table is most likely biased upward in the percentage of energy efficiency improvements. Even with an upwards bias, it still indicates that customers are fairly receptive to undertaking energy efficiency actions.

**Table 6. Energy Efficiency Actions in Last Two Years**

	Participated in an EE Program (n=14)	Other Respondents (n=52)	Overall (n=66)
Installed and compact fluorescent lightbulb	100%	73%	79%
Installed water saving showerheads or faucet aerators	57%	35%	39%
Purchased and installed a programmable thermostat	50%	25%	30%
Had efficiency of safety of heating, cooling, or water heating equipment checked	36%	29%	30%
Purchased an ENERGY STAR labelled appliance	36%	27%	29%
Had water heater pipe wrap or tank insulation installed	36%	23%	26%
Added insulation to walls, ceilings, attics, or crawlspaces	29%	17%	20%
Installed a high efficiency furnace	36%	10%	15%
Installed a high efficiency water heater	21%	12%	14%
Had an energy assessment of home	36%	6%	12%
Installed a high efficiency window air conditioner	0%	10%	8%
Installed a high efficiency central air conditioner	7%	2%	3%
Installed ENERGY STAR labelled energy efficient windows	7%	2%	3%
Made other energy efficiency improvements	7%	17%	15%

Source: Targeted HPWES Nonparticipant Survey (2009), questions E5a through E5k\_imp

The most frequent reason why respondents made energy efficiency improvements was to save money on their utility or water bill (58 percent). The next most prevalent response was to save energy or water (18 percent). Additional reasons for making improvements included to make their home more comfortable, the existing equipment was not working properly or needed to be replaced, environmental benefits, information from a workshop or program, to address moisture problems, and because others are doing it.

Only six respondents reported not making any energy efficiency improvements in their home in the last two years. Reasons for not making any improvements included not being able to afford improvements, just recently moved, and that they do not own the residence.

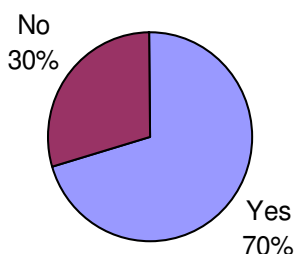
## Utility Bills

PA also asked respondents some questions specifically relating to their energy costs and utility bills. Ninety-eight percent of surveyed households paid directly for their electricity and 94 percent paid directly for heat. These proportions are nearly identical to the baseline survey, where 97 percent paid directly for electricity and 93 percent paid directly for heat. On average, respondents reported \$155 per month in electric costs and \$176 in heating fuel costs during the 2008-2009 winter season. This summer, respondents reported \$106 per month in electric costs, on average.

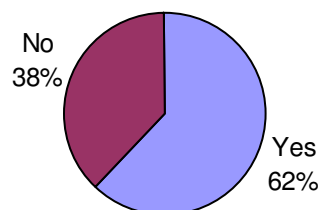
The data suggests that the cost of energy is a significant financial concern for most nonparticipants. The overwhelming majority of respondents (89 percent) said that lowering their energy bill costs was very important to them. In addition, over half of all respondents (55 percent) reported that their household has set up a budget payment plan where their utility costs are evenly distributed across 12 months. Further, one-third of those who had not set up a bill payment plan said that their household has discussed setting up a plan with their utility or fuel provider. As shown in Figure 5, together this proportion is slightly higher than the percentage of customers who reported discussing setting up a bill payment plan in the baseline survey.

**Figure 5. Set Up or Discussed Setting Up Bill Payment Plan with Utility or Fuel Provider**

**2009 Survey, Set Up or Discussed Setting Up Plan (n=66)**



**2002 Baseline Survey, Discussed Setting Up Plan (n=251)**



Source: Targeted HPWES Nonparticipant Survey (2009), questions U2 and U2a; Targeted HPWES Baseline Survey (2002), question Q11

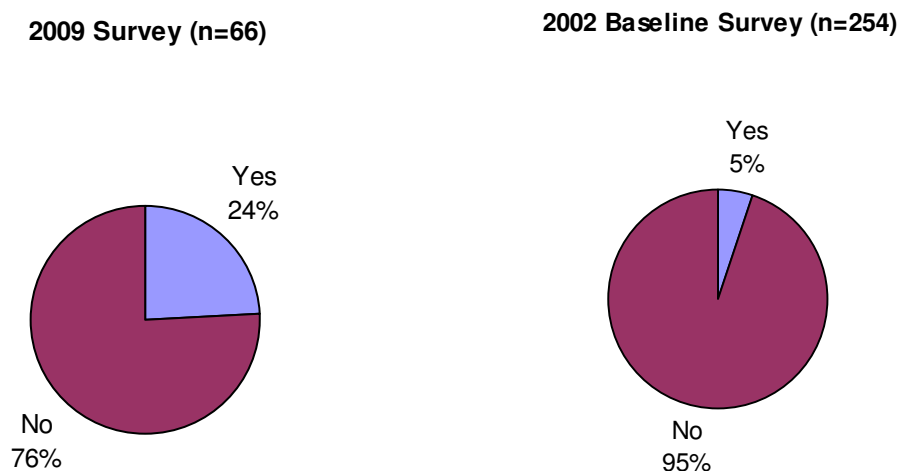
## Program Information

In addition to investigating the household characteristics and energy use within the program target population, the nonparticipant survey sought to characterize awareness of Targeted HPWES, reasons why customers have not participated, and interest in the type of services provided by the program.

### Awareness

Overall, twenty-four percent of all respondents acknowledged that they had heard of Targeted Home Performance with ENERGY STAR<sup>®</sup>. As shown in Figure 6, this proportion is higher than in the 2002 baseline survey, suggesting increased awareness among households.

**Figure 6. Heard of Targeted HPWES**



Source: Targeted HPWES Nonparticipant Survey (2009), question Q1; Targeted HPWES Baseline Survey (2002), question Q2

Respondents who were aware of Targeted HPWES mentioned a variety of sources from which they first heard about the program. While only three respondents reported first hearing of the program through Focus or Targeted HPWES mailings, more respondents reported first learning of the program through either their utility or from Focus than from other sources, such as friends or neighbors. Because of bias in the sample (e.g., those who applied for energy assistance), we are not able to draw any direct conclusions regarding the effectiveness of different marketing channels as multiple venues appear to be playing a role in getting the word out about the program. However, the results do suggest that the word about the program is getting out more effectively than during the first year of the program.

**Table 7. How First Heard of Targeted HPWES (n=16)**

Source	Number of Respondents who Heard of Program
Utility bill insert	3
Mailing/letter/brochure from Focus on Energy	2
Mailing mailing/letter from We Energies	2
Utility company representative	1
Mailing/letter from Targeted HPWES	1
Friend/neighbor/relative	1
Newspaper/radio media	2
Other	2
Don't know	2

Source: Targeted HPWES Nonparticipant Survey (2009), question Q1a

Although we first asked to speak with the named contact person listed from each household in the mailing lists, we were unable to speak with the named contact person for three of the completed interviews. In these cases, we asked to speak with an adult who is knowledgeable about the household's energy bills, energy efficiency actions, and home comfort. As the marketing materials sent by Focus on Energy were not directly addressed to these individuals, one might expect that these individuals have not seen the marketing materials informing them about Targeted HPWES offerings. Still, one of these three respondents had heard of the program and mentioned hearing of the program through a direct mailing from Focus.

### Reasons for Not Participating in Targeted HPWES

Table 8 shows the reasons mentioned by respondents who have heard of the program but have not participated. Respondents noted a variety reasons for why they have not participated in the program including not needing new windows, not being able to afford to pay the co-payment, income is outside the eligible range, being unsure about their eligibility, and just not getting around to participating. None of these individual reasons were mentioned by more than three respondents and therefore should only be viewed anecdotally.

**Table 8. Reason for Not Participating in Targeted HPWES (n=16)**

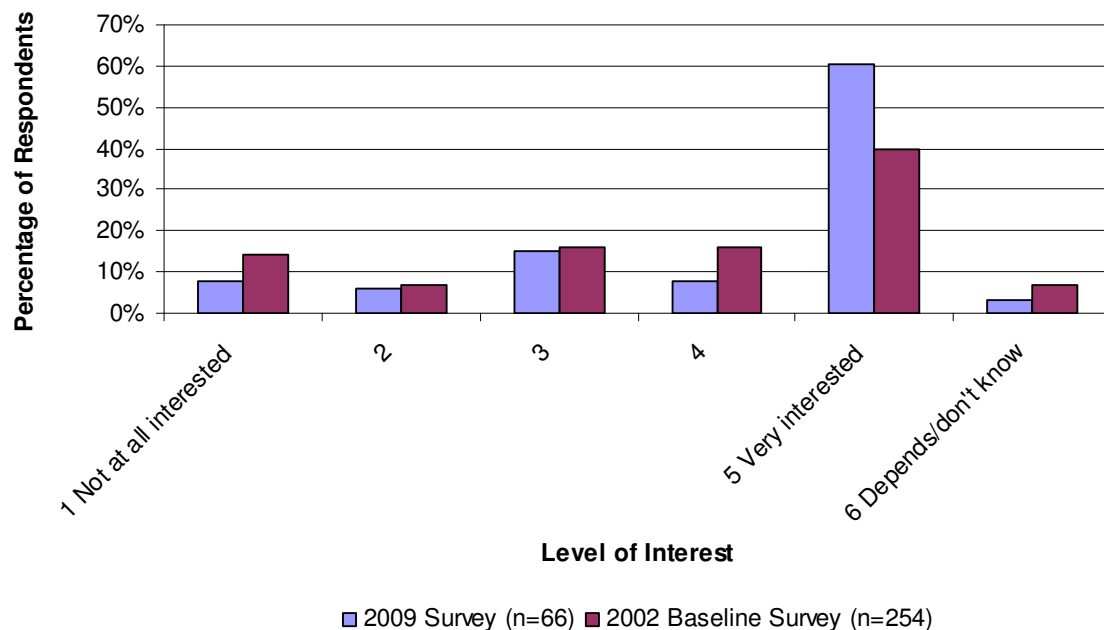
Reason	Number of Respondents who Have Heard of Program but Have Not Participated
Have signed up, waiting	3
Have not gotten around to participating	2
Cannot afford to pay any co-payment	2
Unsure of eligibility	2
Do not need windows	1
Income is over the limit	1
Other	3
Don't know	2

Source: Targeted HPWES Nonparticipant Survey (2009), questions Q1e\_1 to Q1e\_18

### Interest in Participating in Targeted HPWES

Nonparticipants expressed substantial interest in services offered by Targeted HPWES. Sixty-one percent of respondents said they would be very interested in participating in a program like Targeted HPWES and 69 percent of respondents expressed at least some interest. This proportion is higher than in the baseline survey, where 56 percent of respondents expressed some interest in the program.

**Figure 7. Level of Interest in Targeted HPWES**

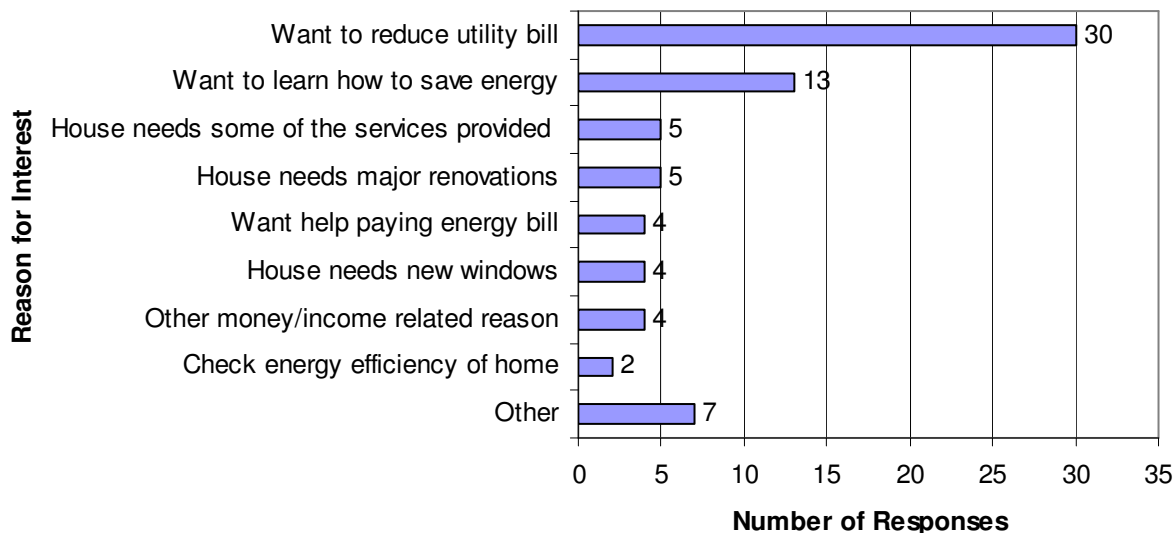


Source: Targeted HPWES Nonparticipant Survey (2009), question Q2; Targeted HPWES Baseline Survey (2002), question Q3

Those who highly rated the importance of lowering their energy bills were more interested in the program. On average, for each additional rating of importance of lowering energy bills (from 1 “not at all important” to 5 “very important”), respondents rated their interest in the program 1.04 points higher. A simple t-test shows this coefficient to be significant at the 0.01 level ( $t = 4.87$ ).

When PA asked interested respondents why they would be interested, two-thirds of respondents mentioned wanting to reduce their energy bill. The second most frequent response was wanting to learn how to save energy. Figure 8 shows the frequency of specific reasons mentioned by interested customers.



**Figure 8. Reasons for Interest in a Program Like Targeted HPWES (n=45)**

Source: Targeted HPWES Nonparticipant Survey (2009), question Q3a

These results show that these customers are primarily interested in programs like Targeted HPWES to help them lower their energy costs. In addition to reducing their utility bill, several respondents noted other reasons relating to saving money or their income. The data also suggests, however, that these customers are interested in learning more about how to save energy. Whether this desire is motivated solely by finances or for other reasons cannot be determined from these data and this could be a topic for future research on this population.

Twenty-one nonparticipants (32 percent) expressed little or no interest in a program such as Targeted HPWES, rating their interest in the program between 1 and 3 or “depends/don’t know.” These respondents noted a wide variety of reasons for not being interested, including thinking their home is already energy efficient, having had a bad experience with a similar program in the past, already participated in a similar program, their house is for sale or foreclosed, had already made energy efficiency improvements, lack of time, and needing more information. None of these responses was mentioned by more than three respondents, so this data should be viewed anecdotally. Table 9 shows the distribution of reasons mentioned by respondents for not being interested in Targeted HPWES. As cautioned previously, none of these individual reasons were mentioned by more than three respondents and therefore should only be viewed anecdotally.

**Table 9. Reasons for Not Being Interested in a Program Like THPES (n=19)**

Reason	Number of Respondents
Don't own residence	3
Cannot pay anything toward home improvements	2
Participated in similar program in the past	2
Have already made improvements of this type	2
Co-payment is too much	1
House is already energy efficient	1
Bad experience with type of program in the past	1
House is for sale or foreclosed	1
Need more information	1
Other	3
Don't know	3

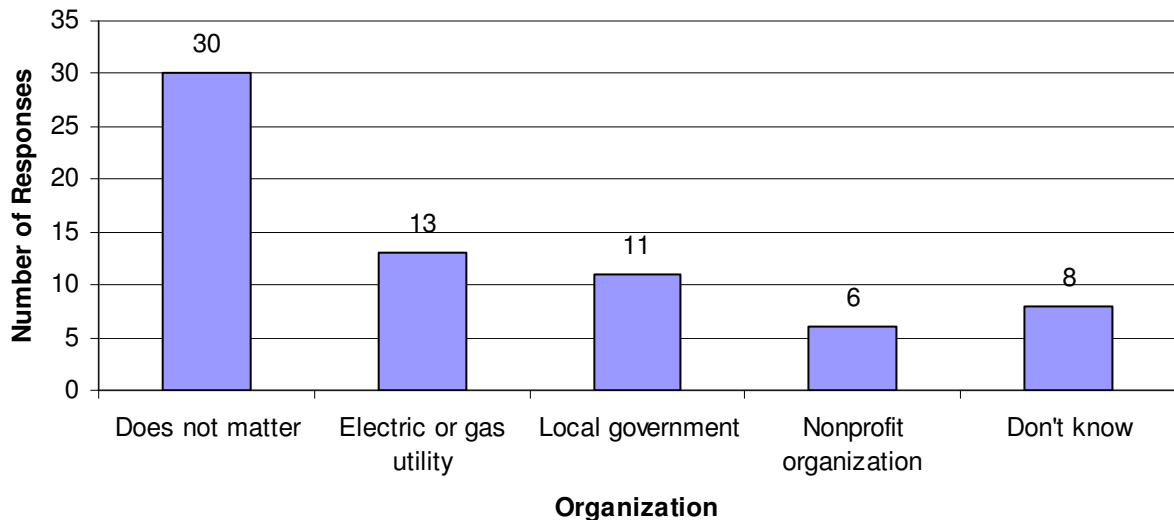
Source: Targeted HPWES Nonparticipant Survey (2009), question Q3b

Three respondents mentioned that the co-payment would be too high or they could not afford to pay anything toward improvements. Notably, two of three said they would be more interested if the program would set up a monthly payment plan or a low-interest, short-term loan to pay off the costs. Offering this option may be one way to increase participation among these types of customers.

### ***Preferred Sources of Energy Saving Information***

Finally, PA asked nonparticipants whether they would prefer to receive information on how to save energy in their home from their utility, local government, a nonprofit organization, or other source. This information could prove valuable in identifying potential allies in marketing Targeted HPWES to promote program participation. Forty-five percent of respondents said that it did not matter to them where they received energy saving information. This lack of preference could stem from a variety of reasons such as not seeing substantial differences between these organizations in providing this type of information, desiring to obtain this type of information regardless of the source, or lack of interest in receiving this type of information.

**Figure 9. Preferred Organizations from which to Receive Information on How to Save Energy (n=66)**



The most prevalent response among organizations listed was electric or gas utilities, followed closely by local government, and nonprofit organizations last. Common reasons for why respondents preferred the organizations they mentioned centered on issues of trust, knowledge, and geographic proximity. Below are a few quotes from respondents on why they preferred to receive energy saving information from the organization they mention:

- Reasons for preferring electric or gas utility:

*“Because [the utility] always come out here. They have to check the meters every day so it’s better to hear from them so I don’t have to run around.”*

*“Because [the utility] is closest to us.”*

- Reasons for preferring local government

*“Because [the local government] in your town and they know what’s going on.”*

*“[The local government] would know more about geographic conditions.”*

- Reasons for preferring a nonprofit organization

*“Past experience, trust.”*

*“They’re not trying to make a buck.”*

These results show that while many customers have no strong preferences for the source of information on how to save energy, some customers do differentiate between the reliability and accessibility of this type of information provided by these different organizations.

## Appendix A

This appendix presents detailed response rate results and sample information. Table A1 summarizes the key outcomes and response rate for the data collection effort.

**Table A1. Key Outcomes and Response Rate**

	Households
Starting sample	281
Bad numbers	73
Refused	59
Language barrier	13
Ineligible - ineligible utility	7
Ineligible - more than five units	3
Ineligible - other	5
Called out (more than six attempts)	55
Completed interview	66
Response rate	23%
Response rate (excluding bad numbers)	32%

Source: Targeted HPWES Nonparticipant Survey (2009)

In many cases, we were unable to contact customers due to non-working phone numbers. PA performed web-based telephone number look-ups for these records, but were unable to find working numbers for 73 out of 281 households (26 percent).

PA spoke with the customer named in the mailing list for 63 out of the 66 interviews (95 percent). In the three cases where the named customer was not available, we asked to speak with an adult who is knowledgeable about the household's energy bills, energy efficiency actions, and home comfort.