Home Performance with ENERGY STAR Program – Participating Homeowner Survey

The purpose of the Participating Homeowner Survey was to gather information from homeowners who have received HPwES Program incentives. The survey was designed by GDS Associates to contribute to the Market Characterization and Assessment evaluation of the HPwES program. The survey was managed by APPRISE Incorporated. Interviews were conducted by Braun Research.

Sample

Target Population

The target population for the survey was homeowners who received HPwES program incentives during the period from July 1, 2007 to December 31, 2007. The population was limited to that group because the survey asked about the decision to purchase certain energy saving measures. It was perceived that homeowners would not be able to discuss that topic if there were a longer time horizon.

Sample Frame

A list of HPwES projects for the period 1/1/2005 through 12/31/2007 was downloaded from the NYSERDA Comprehensive Residential Information System (CRIS). That data file had 3,806 project records for 2007. That file furnished information on the name of the HPwES contractor, the name and address of the participating homeowner, the amount spent by the homeowner in different measure groups, the incentives received by the homeowner, and the projected energy savings from the project.

CSG furnished a supplemental sample frame file. That file had information on the measures proposed by the contractor and the measures selected by the homeowner.

Sample Selection

The sample frame was stratified into two groups – market rate projects and assisted projects. Market rate customers receive low interest financing or a 10% project rebate. Assisted customers receive a 50% rebate of project costs, as well as low-interest financing. Table 1 shows the number of projects completed and the percent of projects completed for each group.

Table 1 – HPwES Homeowner Sample Stratification

Stratum	Number of HPwES Projects	Percent of HPwES Projects
Market	2,589	68%
Assisted	1,217	32%
TOTAL	3,806	100%

The survey budget allowed for 67 interviews for each stratum. Using that approach, the overall population statistics achieved the target confidence interval (+/- 10% with 90% confidence) for each stratum and for the overall market. Table 2 furnishes information on the sample size by stratum, the confidence interval for each stratum, and the confidence interval for the overall sample.

Table 2 – Participating Homeowners Survey Sample Allocation

Stratum	Population	Targeted Number of Interviews	90% Confidence Interval
Market	2,589	67	+/- 10%
Assisted	1,217	67	+/- 10%
TOTAL	3,806	134	+/- 7%

Data Collection

Overview of Data Collection Procedures

The Participating Homeowners Survey was administered as a telephone interview with the homeowner. Sampled homeowners were mailed an advance letter from NYSERDA and one from APPRISE notifying them of the data collection effort and describing the study. Interviewers from Braun Research conducted the interviews using a computer-assisted telephone interview (CATI) survey instrument.

Survey Instrument

The survey instrument was designed to collect information on key performance indicators identified for the HPwES in the Program Theory and Logic Model. One objective of the survey instrument was to update the time series measurements of market indicators obtained from previous surveys. So, it was important to ensure that questions were consistent with the prior surveys. However, the survey also addressed some new issues of interest to NYSERDA program staff. Those questions, in particular, needed to be pretested to ensure that they collected the required information and used clear and concise language.

The survey was designed to ask the homeowner about 12 measure groups. For each measure group, the CSG file was reviewed and the sample file was precoded to assess which measures had been recommended and which measures had been purchased by the client. Question language was varied depending on the status for each measure.

Survey Administration

The survey was fielded in February 2008. Interviewers called homeowners between 9 am and 9 pm on weekdays and weekends. If they reached the household's voice mail, they left a message on first contact. After the first contact, they left a message every other day. The study was in the field for three weeks. Attempts were made with each project contact at least once per day during the field period. Once the target number of interviews for a stratum was completed, interviewing was discontinued for that stratum. Survey administration averaged 21minutes per completed interview. Table 3a shows the final disposition of the sample for the Market HPwES participants. The estimated response rate for this group was 54%. Table 3b shows the final disposition of the sample for the Assisted HPwES participants. The estimated response rate was 52%.

Table 3a – Participating Homeowner Survey Sample Disposition (Market)

Disposition		Number	Percent
Complete	Complete	75	50%
	Partial	5	3%
Contacted	Refused	9	6%
	Not Completed	51	34%
Not Contacted	Quota Met	0	0%
Excluded	Duplicate	0	0%
	Homeowner no longer available	0	0%
	Information not available for homeowner	10	7%
	Not Eligible	0	0%
TOTAL		150	100%

Table 3b – Participating Homeowner Survey Sample Disposition (Assisted)

Disposition		Number	Percent
Complete	Complete	70	47%
	Partial	11	7%
Contacted	Refused	5	3%
	Not Completed	49	33%
Not Contacted	Quota Met	0	0%
Excluded	Duplicate	0	0%

Disposition		Number	Percent
	Homeowner no longer available	0	0%
	Information not available for homeowner	15	10%
	Not Eligible	0	0%
TOTAL		150	100%

Data Processing

Coding

The survey included many "field-coded" questions. In these questions, the respondent was asked an open-ended question. The interviewer had the choice of coding the response as one (or more, for some questions) of a number of pre-coded categories that were coded from the open-ended responses for the prior survey, or coding the response as "Other" and entering a text string to summarize the response. For each applicable question, staff reviewed each "Other" response and then selected one of the pre-coded responses or made the response eligible for development of a new code. After reviewing all questionnaires, text responses were grouped into categories. If a group represented at least 5% of responses (four or more), a new code was created. If there were less than four responses, it was left as "Other."

Data Processing

The survey data were checked for consistency with the CATI survey instrument. The survey data were combined with the sample frame data. A number of data file formats were developed, including SAS, SPSS, Stata, and Excel. All files were labeled with variable labels and value labels.

The survey started with a series of questions related to the 12 measure groups. Homeowners were asked one of four question series, depending on whether a measure groups was recommended and whether it was purchased. Those questions were coded into a series of analytic variables for each measure group. The specification for that coding is appended to the end of this document.

Weights

Since the survey was stratified and differential sampling rates were applied to each stratum, survey weights were developed and used for analysis of the data. A participant weight was developed for each of the two groups. The same participant weight is computed for all completed interviews in the stratum. The formula for the participant weight (PW) is PW = # of Participants / # of Interviews. [See Table 5] The sum of the participant weights for each stratum represents the number of homeowners that received HPwES incentives of that type during the analysis period - July 1, 2007 to December 31, 2007.

Table 5 – Participating Homeowner Survey Participant Weights

Stratum	Population	Number of Interviews	Participant Weight
Market	1,498	75	19.97
Assisted	530	70	7.57
TOTAL	2,028	145	N/A

For the 2006 sample, a Simple Random Sample was implemented. Since an SRS sample is self-weighting, the analysis for 2006 used unweighted data. The Participant Weight will yield comparable results to the 2006 procedures.

Measure Coding Specifications

For each of the 12 measures, code variables M?a – M?e

M1a – Program Installation (Database)

1. Contractor recommended / purchased
2. Contractor recommended / partially purchased
3. Contractor recommended / not purchased
4. Not Recommended

Specifications – Take direct from survey administration file

M1b – Program Installation (Survey)

1. Contractor recommended / purchased
2. Contractor recommended / partially purchased
3. Contractor recommended / not purchased
4. Not Recommended

Specifications

Code = 1 if [B1a=1] or [B2=8] or [B5=8] or [B9=8]
Code = 2 if [M1a=2] and [B2 NE 8]
Code = 3 if [B1a=2] or [M1a=3 and B5 NE 8] or [B8=1 and B9 NE 8]
Code = 4 if [B8 NE 1]

M1c – Installation and One Year Plans (Survey)

1. Contractor recommended / purchased
2. Contractor recommended / partially purchased / remainder planned through program
3. Contractor recommended / partially purchased / remainder planned outside program.
4. Contractor recommended / partially purchased / remainder not planned
5. Contractor recommended / not purchased / planned through program
6. Contractor recommended / not purchased / planned outside program
7. Contractor recommended / not purchased / not planned
8. Not Recommended

Specifications

Code = 1 if [M1b = 1]
Code = 2 if [M1b = 2] and [B4 = 1, 3]
Code = 3 if [M1b = 2] and [B4 = 2, 4]
Code = 4 if [M1b = 2] and [B4 NE 1, 2, 3, 4]

Code = 5 if [M1b = 3 & B7 = 1, 3] or [B1c = 1 or 3] or [B10a = 1 or 3]
Code = 6 if [M1b = 3 & B7 = 2, 4] or [B1c = 2 or 4] or [B10a = 2 or 4]
Code = 7 if [M1b = 3 & B7 NE 1, 2, 3, 4] and [B1c NE 1, 2, 3, 4] and [B10a NE 1, 2, 3, 4]
Code = 8 if [M1b = 4]

M1d_1, M1d_2, M1d_3 – Why Not Installed

1. Plan to install later
2. Cost of the measure was too high
3. Installed standard efficiency because of cost
4. Did not think measure was higher quality or efficiency
5. Did not see value
6. Materials were not available
7. Contractor recommended against doing measure
8. Other
9. [97] Don't Know
10. [96] Refused
11. [99] Not Applicable

Specifications:

If [M1a = 1] and [M1c = 7], extract codes from B1d
If [M1a = 2] and [M1c = 4], extract codes from B2
If [M1a = 3] and [M1c = 7], extract codes from B5
If [M1a = 4] and [M1c = 7], extract codes from B9
If none of those conditions exist, code = 99

M1e – Installation Plans

1. Same contractor / inside program
2. Same contractor / outside program
3. Different contractor / inside program
4. Different contractor / outside program
5. Other
6. [97]Don't Know
7. [99] Not Applicable

Specifications:

If [M1a = 1] and [B1b=1], extract codes from B1c
If [M1a = 2] and [B3 = 1], extract codes from B4

If [M1a = 3] and [B6 = 1], extract codes from B7
If [M1a = 4] and [B10 = 1], extract codes from B10a
If none of those conditions exist, code = 99