

## **Home Performance with ENERGY STAR Program – Former Participating Contractor Survey**

The purpose of the Former Participating Contractor Survey was to gather information from contractors who were no longer enrolled in the NYSERDA Home Performance with ENERGY STAR Program (HPwES) at the end of 2007. 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 inactive HPwES contractors. Inactive contractors were defined as contractors listed as inactive on December 31, 2007 by the program administrator - CSG.

#### *Sample Frame*

Inactive contractors were listed on Exhibit HP-3C of the Monthly Report on NYSERDA's Home Performance Programs for December 2007. That report lists 144 active contractors and 52 inactive contractors. We noted that GreenHomes America by HughesCo was listed as an inactive contractor. However, since the work of that company was continued by Hughesco, we excluded that company from the inactive contractor list, leaving 51 inactive contractors.

#### *Sample Selection*

The HPwES contractor sample frame was stratified into five groups based on the number of HPwES projects completed in 2007, the status of the contractors, and the geographic location of the contractors. Table 1 shows the number of projects completed and the percent of projects completed for each group.

- Large Contractors – These contractors completed 60 or more HPwES projects during 2007.
- Moderate Contractors – These contractors completed 12 to 59 projects during 2007.
- Small Contractors – These contractors complete less than 12 jobs during 2007.
- NYC Contractors – Contractors in the NYC Market that were excluded from the sample.
- Inactive Contractors – These are contractors listed as Inactive in the CSG report.

The Inactive contractor stratum was eligible for interview. The Large, Moderate, and Small contractor strata were surveyed in the Participating Contractor Survey. The NYC contractor stratum was used in the NYC Process Evaluation.

**Table 1 – HPwES Contractor Sample Stratification**

Stratum	Number of HPwES Contractors	Number of HPwES Projects	Percent of HPwES Projects
Large	17	2,978	69%
Moderate	35	914	21%
Small	80	233	5%
NYC	10	68	2%
Inactive	51	108	3%
TOTAL	193	4,301	100%

The survey target was to complete interviews with 50% of the Inactive Contractors. Table 2 furnishes information on the sample size, the targeted number of interviews, and the confidence interval for the overall sample.

**Table 2 – Former Participating Contractors Survey Sample Allocation**

Stratum	Population	Targeted Number of Interviews	90% Confidence Interval
TOTAL	51	26	+/- 11%

## Data Collection

### *Overview of Data Collection Procedures*

The Former Participating Contractors Survey was administered as a telephone interview with the NYSERDA project contact. Sampled contacts 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 respondents received a \$30 incentive for completing the survey.

### *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. Pretests found that the language for certain questions in the questionnaire needed to be improved and several skip instructions required revision.

*Survey Administration*

The survey was fielded in June 2008. Special screening and scheduling calls were made to the sample by a researcher at APPRISE. When the screener identified an eligible contractor, she scheduled an interview with the appropriate contact. Interviewers from Braun Research conducted the interview at the schedule time. Survey administration averaged 31 minutes per completed interview. The survey was in the field for 10 weeks. Table 3 shows the final disposition of the sample.

The project goal was to complete interviews with 26 Former Participating Contractors. However, during the call screening, we found that 16 of the 51 cases in the original sample were not eligible for the survey. 10 of the contractors were no longer in business. All of the remaining ineligible contractors indicated that they still were participating in the HPwES program. We completed 17 interviews with the 35 contractors that were not screened as ineligible.

**Table 3 – Former Participating Contractor Survey Sample Disposition**

Disposition		Number	Percent
Complete	Complete	17	33%
	Partial	0	0%
Contacted	Refused	5	10%
	Not Completed	13	25%
Not Contacted	Quota Met	0	0%
Excluded	Duplicate	0	0%
	Business or contact no longer available	10	20%
	Information not available for business/contact	0	0%
	Not Eligible	6	12%
TOTAL		51	100%

Table 4 shows the number of sampled cases, the number of completed interviews, and the response rate by sample stratum. The overall survey response rate was 54%. The 90 percent confidence interval was +/- 12%.

**Table 4 – Former Participating Contractor Survey Response Rate**

<b>Stratum</b>	<b>Eligible Sample Size</b>	<b>Number of Interviews</b>	<b>Response Rate</b>	<b>Confidence Interval</b>
TOTAL	32	17	54%	+/- 12%

## **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 (two or more), a new code was created. If there were less than two 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.

### *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. Three weights were developed – a participant weight, a production weight, and a projects weight.

- Participant Weight – The same participant weight is computed for all completed interviews in the stratum. The formula for the participant weight (PW) is  $PW = \# \text{ of Eligible Contractors} / \# \text{ of Interviews}$ . [See Table 5]
- Production Weight – The production weight is based on two factors – the stratum factor and the respondent production. The formula for the stratum factor (SF) is  $SF = (\text{Sum of Stratum Production}) * (\text{Eligible Population Rate}) / \text{Sum of Production for Stratum Respondents}$ . The formula for the production weight (PnW) for each respondent is  $PnW = SF * \text{Production}$ . [See Table 6]

- **Projects Weight** – The projects weight is based on two factors – the stratum projects population and the number of respondents. The formula for the stratum project population (SPP) is  $SPP = \text{the sum of } PW * \text{Projects Completed for all respondents in the stratum}$ . The formula for the projects weight (PtW) is  $PtW = SHP / \text{Number of respondents}$ . [See Table 7]

For the 2006 sample, a PPS sample based on project savings was implemented. Since a PPS sample is self-weighting with respect to the measure-of-size variable, the analysis for 2006 used unweighted data. The Production Weight will yield comparable results to the 2006 procedures.

The purpose of the Projects Weight is to allow analysts to compare respondents from the three HPwES surveys - Participant Contractors, Former Participant Contractors, and Nonparticipant Contractors. The Projects Weight for each of those surveys represents the share of all projects in NYS “represented” by this contractor.

**Table 5 – Former Participating Contractor Survey Participant Weights**

Stratum	Population	Number of Interviews	Participant Weight
TOTAL	38	17	2.24

**Table 6 – Former Participating Contractor Survey Production Weights**

Stratum	Stratum Production Total	Respondent Production Total	Stratum Factor	Average Weight
TOTAL	108	5	21.6	6.4

**Table 7 – Former Participating Contractor Survey Projects Weights**

Stratum	Stratum Project Total	Respondents	Weight
TOTAL	14,663	17	862.53