

ENERGY STAR Homes Program – Nonparticipating Builder Survey

The purpose of the Nonparticipating Builder Survey was to gather information from builders who did not participate in the NYSEDA ENERGY STAR Homes Program (ESH). The survey was designed by GDS Associates to contribute to the Market Characterization and Assessment evaluation of the ESH program. The survey was managed by APPRISE Incorporated. Interviews were conducted by Braun Research.

Sample

Target Population

The target population for the survey was active residential builders who have not participated in the ESH program. Active builders are defined as those construct 1-4 family homes. Nonparticipant builders are those that have never built an ESH home. The survey respondent was the company contact in the data vendor's database. If no contact name was provided, interviewers ask to speak with someone at the company "who is familiar with the company's energy-related building practices."

Sample Frame

The primary sample frame for the survey was a D&B file of builders in NYS (excluding Nassau and Suffolk counties). The target SIC codes were 15210000 (single family construction), 15219901 (new construction, single family homes), 15219902 (prefabricated single family construction), and 15219903 (townhouse construction). The sample frame was purchased from Genesys Sampling and included 10,114 records.

Sample Selection

The sample frame was stratified into three groups based on the value of construction reported by D&B. Table 1 shows the builder strata. Large builders were those who ranked in the top 50 builders. Moderate builders were those who reported between \$500,000 and \$4.5 million in construction value. Small builders were those who reported between \$100,000 and \$500,000 in construction value.

Table 1 – Nonparticipating Builder Sample Stratification

Stratum	Number of Builders	Total Construction Value (millions)	Percent of Construction Value
Large	50	\$1,530	45%
Moderate	993	\$1,165	34%
Small	3,450	\$711	21%
TOTAL	4,493	3,406	100%

The survey budget allowed for 75 interviews. The final sample procedure allocated 25 interviews to the Large stratum, 25 interviews to the Moderate stratum, and 25 interviews to the Small stratum. Using that approach, the overall population statistics achieved the target confidence interval (+/- 9% with 90% confidence) and builders with a greater market share were sampled at a higher rate. Table 2a furnishes information on the estimated population by stratum, the sample size by stratum, the confidence interval for each stratum, and the confidence interval for the overall sample.

Table 2a – Nonparticipating Builder Survey Sample Allocation

Stratum	Estimated Population (D&B)	Targeted Number of Interviews	90% Confidence Interval
Large	50	25	+/- 12%
Moderate	993	25	+/- 16%
Small	3,450	25	+/- 16%
TOTAL	4,493	75	+/- 9%

A large percentage of the sample cases downloaded from D&B were not eligible for the survey. Some were program participants. Others did not construct 1-4 family housing. Still others were no longer in business. During the field period, the sample allocation had to be changed to meet the total survey quota. Table 2b furnishes information on the estimated population by stratum, the sample size by stratum, the confidence interval for each stratum, and the confidence interval for the overall sample.

Table 2b – Nonparticipating Builder Survey Completions

Stratum	Estimated Population (Survey)	Targeted Number of Interviews	90% Confidence Interval
Large	13	10	+/- 12%
Moderate	411	40	+/- 12%
Small	1,979	26	+/- 16%
TOTAL	2,403	76	+/- 9%

Data Collection

Overview of Data Collection Procedures

The Nonparticipating Builder 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 Instrument

The survey instrument was designed to collect information on key performance indicators identified for the ESH 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 needed to be improved and several skip instructions required revision.

One instrument was used for both the nonparticipating and former participating builders; the instrument was tested carefully to ensure that each type of builder was asked the appropriate set of questions. The grouping of positive and negative pre-coded responses in lengthy response lists also improved questionnaire administration.

Survey Administration

Interviewers called project contacts between 9 am and 5 pm on weekdays. If they reached the contact'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 one month. 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 16 minutes per completed interview. Table 3 shows the final disposition of the sample.

Table 3 – Nonparticipating Builder Survey Sample Disposition

Disposition		Number	Percent
Complete	Complete	76	7%
	Partial	20	2%
Contacted	Refused	89	8%
	Not Completed	469	45%
Not Contacted	Quota Met	0	0
Excluded	Duplicate	0	0
	Business or contact no longer available	227	22%
	Information not available for business/contact		
	Not Eligible	169	16%

Disposition	Number	Percent
TOTAL	1,050	100%

Table 4 shows the number of eligible cases, the number of completed interviews, and the response rate by sample stratum. The overall survey response rate was 24%.

Table 4 – Nonparticipating Owner Survey Response Rate

Stratum	Eligible Sample Size	Number of Interviews	Response Rate
Large	6	4	67%
Moderate	193	47	24%
Small	115	25	22%
TOTAL	314	76	24%

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 (coded from the open-ended responses for the prior surveys), 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 three or more responses, a new code was created. If there were less than three 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. Two weights were developed – a participant weight and a homes weight.

- Participant Weight – The same participant weight is computed for all completed interviews in the stratum. The formula for the participant weight (PW) is $PW = \# \text{ of Eligible Builders} / \# \text{ of Interviews}$. [See Table 5]
- Homes Weight – The homes weight is based on two factors – the stratum homes population and the number of respondents. The formula for the stratum homes population (SHP) is $SHP = \text{the sum of } PW * \text{Homes Constructed for all respondents in the stratum}$. The formula for the homes weight (HW) is $HW = SHP / \text{Number of respondents}$. [See Table 6]

For the 2006 sample, a PPS sample based on the share of the market 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 Homes Weight will yield comparable results to the 2006 procedures.

Table 5 – Nonparticipating Builder Survey Participant Weights

Stratum	Eligible Population	Number of Interviews	Participant Weight
Large	13	10	1.30
Moderate	411	40	10.28
Small	1,979	26	76.10
TOTAL	2,403	76	N/A

Table 6 – Nonparticipating Builder Survey Home Weights

Stratum	Stratum Home Total	Respondents	Weight
Large	1,608	10	160.75
Moderate	2,581	40	64.53
Small	4,338	26	166.83
TOTAL	8,527	76	112.19