

### **New Construction Program – Participating Owner Survey**

The purpose of the Participating Owner Survey was to gather information from building owners who participated in the NYSERDA New Construction Program (NCP). The survey was designed by Summit Blue to contribute to the Market Characterization and Assessment evaluation of the NCP program. Questions were added to the survey to contribute to the Impact Evaluation of the program. The survey was managed by APPRISE Incorporated. Interviews were conducted by Braun Research.

#### **Sample**

##### *Target Population*

The target population for the survey was building owners (or their agents) associated with projects that had participated in the NCP and received incentives through the program. Eligible projects were defined as those that were completed during the time period 9/1/2005 through 12/15/2007. The survey respondent was the individual listed as the NCP program contact in the Buildings Portal data; that individual would have the best information on the participation decision.

##### *Sample Frame*

The sample frame was downloaded from the NYSERDA Buildings Portal. The sample frame consisted of 227 projects that were completed and received NCP incentives during the targeted time period. Eight projects were excluded from the survey because they were part of a special study of the Top 30 Savers being conducted by the Impact Evaluation Team. The remaining 219 projects were included in the sample frame. Because the target respondent was the program contact, the sample frame was transformed so that there were 186 records - one record for each contact. [Note: 18 of the 186 contacts had more than one project.] Information on the number of projects and the aggregate amount of NYSERDA program incentives was added to the contact record.

##### *Sample Selection*

The sample frame was stratified into three groups based on NCP incentive amount.<sup>1</sup> Table 1 shows the number of contacts, the percent of contacts, and the percent of NYSERDA incentives for each stratum.

**Table 1 – Participating Owner Survey Sample Stratification**

<b>Stratum</b>	<b>Number of Contacts</b>	<b>Percent of Contacts</b>	<b>Percent of Incentives</b>
Large	25	13%	62%

<sup>1</sup> The incentive range for the large stratum was \$200,000 or more, for the moderate incentive was \$37,000 to less than \$200,000, and for the small incentive was \$0 to less than \$37,000.

Stratum	Number of Contacts	Percent of Contacts	Percent of Incentives
Moderate	65	35%	33%
Small	96	52%	5%
TOTAL	186	100%	100%

The survey budget allowed for 60 interviews. Two sample allocation alternatives were considered.

- Simple Random Sample (SRS) - A SRS sample would have yielded the smallest confidence interval for statistics for all participants. However, it would have allocated only 7 interviews to the large incentive projects that account for over 60% of the incentives.
- Probability Proportionate to Size (PPS) – A PPS sample with NYSERDA incentive as the measure-of-size would allocate 62% of the sample (36 interviews) to the large incentive group. However, the large incentive group only had 25 population members. Furthermore, only 3 interviews would be allocated to the small incentive group. That would significantly increase the confidence intervals for statistics related to all participants.

The final sample procedure allocated 20 interviews to each stratum. Using that approach, the overall population statistics achieved the target confidence interval (+/- 10% with 90% confidence), and projects with larger incentives also sample at a higher rate. 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 Owner Survey Sample Allocation<sup>2</sup>**

Stratum	Number of Contacts	Number of Interviews	90% Confidence Interval
Large	25	20	+/- 8%
Moderate	65	20	+/- 15%
Small	96	20	+/- 16%
TOTAL	186	60	+/- 10%

## Data Collection

### *Overview of Data Collection Procedures*

<sup>2</sup> At the same time that the NCP Participating Owner Survey was being conducted, the Process Evaluation team was also conducting in depth interviews with NYSERDA program participants in the New York City area. NYSERDA decided to set aside 15 sample cases for the NYC study, 3 from the large stratum, 4 from the moderate stratum, and 8 from the small stratum.

The Participating Owner Survey was administered as a telephone interview with the NYSERDA project contact. Sampled contacts were sent an e-mail notifying them of the data collection effort, including an advance letter from NYSERDA and APPRISE regarding the study. Interviewers from Braun Research conducted the surveys 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 NCP 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 was addressing 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 questionnaire exceeded the target survey length and that the language for certain questions needed to be improved. Survey administration averaged 21 minutes per completed interview.

*Survey Administration*

Interviewers called project contacts between 9 am and 5 pm on weekdays. If they reached the contact’s voice mail, they would leave a message on first contact. After the first contact, they would leave a message every other day. The study was in the field for two 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.

Table 3 shows the final disposition of the sample.

**Table 3 – Participating Owner Survey Sample Disposition**

Disposition		Number	Percent
Complete	Complete	60	65%
	Partial	1	1%
Contacted	Refused	2	2%
	Not Completed	29	31%
Not Contacted	Quota Met	0	0%
Excluded	Duplicate	0	0%
	Business or contact no longer available	1	1%
	Information not available for business/contact	0	0%
	Not Eligible	0	0%

<b>Disposition</b>	<b>Number</b>	<b>Percent</b>
TOTAL	93	100%

Table 4 shows the number of sampled cases, the number of completed interviews, and the response rate by sample stratum.

**Table 4 – Participating Owner Survey Response Rate**

<b>Stratum</b>	<b>Eligible Sample Size</b>	<b>Number of Interviews</b>	<b>Response Rate</b>
Large	22	20	91%
Moderate	31	20	65%
Small	39	20	51%
TOTAL	92	60	66%

## **Data Processing**

### *Coding*

The survey included a number of “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 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 all “Other” responses, the text was reviewed. The coder either 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 (3 or more), a new code was created. If there were less than 3 responses, it was left as “Other.”

### *Data Processing*

The survey data were checked for consistency with the CATI survey instrument, then 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 an incentive weight.

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

For the 2006 sample, a PPS sample based on kWh 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. Since one of the factors that NYSERDA uses to set program incentives is kWh savings, tabulations developed using the incentive weight furnishes statistics that are comparable to those developed for previous NCP surveys. The Market Assessment results presented in this report are weighted according to project incentives.<sup>3</sup>

**Table 5 – Participating Owner Survey Participant Weights**

Stratum	Geography	Population	Number of Interviews	Participant Weight
Large	NYC	6	2	3.0
	Other	19	18	1.06
Moderate	NYC	15	2	7.5
	Other	50	18	2.78
Small	NYC	26	5	5.2
	Other	70	15	4.67
TOTAL		186	60	3.1

**Table 6 – Participating Owner Survey Incentive Weights**

Stratum	Geography	Stratum Incentive Total	Respondent Incentive Total	Stratum Factor	Average Weight
Large	NYC	2,029,385	825,371	2.46	1,014,693
	Other	6,962,005	6,529,629	1.07	386,778
Moderate	NYC	1,362,520	306,694	4.44	681,260

<sup>3</sup> NYSERDA sets program incentives based on the value of both KW and kWh savings for projects. From that perspective, higher incentive projects are of greater value to NYSERDA.

<b>Stratum</b>	<b>Geography</b>	<b>Stratum Incentive Total</b>	<b>Respondent Incentive Total</b>	<b>Stratum Factor</b>	<b>Average Weight</b>
	Other	3,852,483	1,289,994	2.99	214,027
Small	NYC	357,369	161,536	2.21	71,473
	Other	586,176	189,332	3.10	39,078
TOTAL		15,149,938	9,302,556	N/A	252,499