



## **Energy Efficiency / Demand Response Plan: Plan Year (6/1/2011-5/31/2012)**

### **Evaluation Report: Small Business Energy Savings Evaluation**

**FINAL**

**Presented to  
Commonwealth Edison Company  
Nicor Gas**

June 12, 2013

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## E. Executive Summary

### E.1 Evaluation Objectives

This report covers the impact and process evaluation of the Small Business Energy Savings (SBES) Program in the first year of delivery<sup>1</sup>, which is electric program year 4 (EPY4) and gas program year 1 (GPY1). The program provides natural gas energy efficiency measures to Nicor Gas, Peoples Gas, and North Shore Gas customers, and electric measures to ComEd customers. Nexant Inc. implements the program for customers served by ComEd and Nicor Gas. Nicor Gas sub-contracted the administration of the program to Wisconsin Energy Conservation Corporation (WECC). Franklin Energy Services implements and administers the program for customers served by ComEd and Peoples Gas or North Shore Gas. This evaluation report covers the total ComEd electric impacts from all of the gas service territories, the gas impacts for Nicor Gas, and the process evaluation for the Nexant-delivered ComEd/Nicor Gas program. A separate report covers the impact and process evaluation of the ComEd/Peoples Gas/North Shore Gas program delivered by Franklin Energy.

The objectives of the SBES Program evaluation are to quantify gross and net savings impacts for the program, determine key process-related program strengths and weaknesses, and identify ways the program can be improved.

The purposes of the impact evaluation are to determine the gross impacts and the net impacts of the program, review the reasonableness of the default values, and determine if the SBES Program met its program goals.

The purposes of the process evaluation are to develop a complete understanding of how the program works, comprehensively review program marketing and outreach materials, and identify potential barriers to program participation. In addition, the process evaluation studies the marketing materials, tracking systems, and process forms for the overall purpose of program improvement and evaluates customer and trade ally satisfaction with the program.

### E.2 Evaluation Methods

The impact analysis included an engineering review of savings assumptions, verifying that the tracking system properly implemented calculations of ex-ante savings from deemed and custom inputs; an analysis of participating customer telephone survey data to verify participation and gather site-specific measure data; an engineering review of project documentation at the measure level for a sample of projects; and on-site visits for a small sample of projects to verify that invoiced equipment was installed.

The process analysis was conducted following completion of the telephone surveys of program participants. Process data were analyzed from trade ally interviews, participant surveys, program manager interviews, and implementer interviews to identify the most defensible conclusions and recommendations. Free-ridership was calculated algorithmically based on survey self-report data. The analysis relied on interview results from participating customers supported by data collected through in-depth trade ally interviews. The

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<sup>1</sup> There was a limited pilot in the previous year, but the pilot was not evaluated.

existence of spillover was examined using survey self-report data and trade ally estimates of customer spillover.

This program has not been evaluated before and so according to the NTG Framework,<sup>2</sup> the Net-to-Gross ratio (NTGR) is to be applied retroactively. The program falls under the following condition from the NTG Framework: *“For existing and new programs not yet evaluated, and previously evaluated programs undergoing significant changes — either in the program design or delivery, or changes in the market itself<sup>3</sup> — NTGRs established through evaluations would be used retroactively, but could also then be used prospectively if the program does not undergo continued significant changes.”*

### ***E.3 Key Evaluated Parameters and Participation Metrics***

The key evaluated parameters for the ComEd and Nicor Gas EPY4/GPY1 SBES Program are shown in Table E- 1 and Table E- 2, respectively.

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<sup>2</sup> “Proposed Framework for Counting Net Savings in Illinois.” Memorandum March 12, 2010 from Philip Mosenthal, OEI, and Susan Hedman, OAG.

<sup>3</sup> An example of a market change might be where baseline efficiencies have increased significantly and the likely free riders are growing substantially because of it.



**Table E- 1. Program Parameters for the ComEd EPY4 SBES Program**

Parameter	Value	Deemed or Evaluated?	Source Notes
Free-ridership Rate from Customer Participant Data	0.17	Evaluated	Evaluation of EPY4 participants with electric saving projects
Free-ridership Rate from Trade Ally Data	0.05	Evaluated	Interviews with EPY4 trade allies
Program Free-ridership Rate	0.05	Evaluated	Evaluation analysis
Participant Spillover Rate	0.00	Evaluated	Evaluation of EPY4 participant responses. Participant spillover rate was 0.003 and rounded to zero.
Non-Participant Spillover Rate	0.00	Evaluated	Interviews with EPY4 trade allies
Evaluation Research Findings NTGR	0.95	Calculated	NTGR = 1- Program Free Rider rate + Participant Spillover rate + Non-Participant Spillover Rate
Quantity	Varies	Evaluated	Ex-ante quantities for the primary sample were verified by CATI survey, and by file review and on-site verification for a subset of the CATI respondents.
Ex Ante Gross Savings per Unit	Varies		<i>PY4 Deemed Values, Appendix A</i> , implementer calculations for water saving measures and vending/cooler misers
Verified Gross Savings per Unit	Varies	Evaluated	Evaluation analysis, using <i>PY4 Deemed Values, Appendix A</i> , and implementer calculations except where noted.
Research Findings Gross Savings per-Unit	Varies	Evaluated	Evaluation analysis, using CATI lighting hours of use, CATI reported quantities, and <i>PY4 Deemed Values, Appendix A</i> , and implementer calculations except where noted.
Verified Realization Rate on Ex-Ante Gross Savings	1.03	Calculated	Calculated from sampled EPY4 measures.
Research Findings Realization Rate on Ex-Ante Gross Savings <sup>4</sup>	0.86	Calculated	Calculated from sampled EPY4 measures.

<sup>4</sup> Details on the research findings for gross realization are provided in Appendix 5.2.3.

**Table E- 2. Program Parameters for the Nicor Gas EPY4 SBES Program**

Parameter	Value	Deemed or Evaluated?	Source Notes
Free-ridership Rate from Customer Participant Data	0.20	Evaluated	Evaluation of GPY1 participants with gas saving projects
Free-ridership Rate from Trade Ally Data	0.02	Evaluated	Interviews with GPY1 trade allies
Program Free-ridership Rate	0.02	Evaluated	Evaluation analysis
Participant Spillover Rate	0.02	Evaluated	Evaluation of GPY1 participant responses.
Non-Participant Spillover Rate	0.00	Evaluated	Interviews with GPY1 trade allies
Evaluation Research Findings NTGR	1.00	Calculated	NTGR = 1- Program Free Rider rate + Participant Spillover rate + Non-Participant Spillover Rate
Quantity	Varies	Evaluated	Ex-ante quantities for the primary sample were verified by CATI survey, and by file review and on-site verification for a subset of the CATI respondents.
Ex Ante Gross Savings per Unit	Varies		<i>Illinois TRM</i> , implementer calculations for measures not in the TRM (programmable thermostats, hot water turn-down and furnace tune-ups)
Verified Gross Savings per Unit	Varies	Evaluated	Evaluation analysis, using the Illinois and implementer calculations except where noted.
Research Findings Gross Savings per-Unit	Varies	Evaluated	Evaluation analysis, using CATI responses, and the Illinois TRM and implementer calculations except where noted.
Verified Realization Rate on Ex-Ante Gross Savings	1.00	Calculated	Calculated from sampled GPY1 measures.
Research Findings Realization Rate on Ex-Ante Gross Savings <sup>5</sup>	0.96	Calculated	Calculated from sampled GPY1 measures.

Table E- 3 and Table E- 4 provide profiles of the ComEd and Nicor Gas EPY4/GPY1 SBES program participant populations, respectively.

<sup>5</sup> Details on the research findings for gross realization are provided in Appendix 5.2.3.

**Table E- 3. Profile of the ComEd EPY4 SBES Population**

Population Summary			
Installed Electric Measure Type	Number of Projects (N)	Ex-ante Gross Savings, kWh	kWh percent
Direct-Installed (DI)	478	577,571	6%
Contractor-Installed (CI)	401	8,629,410	94%
All Projects*	690	9,206,981	100%

**Table E- 4. Profile of the Nicor Gas GPY1 SBES Population**

Population Summary			
Installed Gas Measure Type	Number of Projects (N)	Ex-ante Gross Savings, Therms	kWh percent
Direct-Installed (DI)	154	11,753	11%
Contractor-Installed (CI)	162	92,730	89%
All Projects*	272	104,483	100%

#### ***E.4 Key Impact Findings and Recommendations***

The impact evaluation of the SBES Program resulted in adjustments to the ex-ante gross savings for electric and gas measures under conditions that will be described later in this report. The verified gross savings shown in Table E- 5 assumes that gas measures covered by the State of Illinois Technical Reference Manual (TRM) are deemed for evaluation purposes in GPY1.<sup>6</sup> An alternative estimate for the program as a whole is provided in the Appendix. The savings in the Appendix does not assume any deeming, but consists of research estimates for all measures, whether a measure is in the TRM or not.

As shown in Table E- 5, verified gross energy savings were nearly equal to the ex-ante gross savings reported in the ComEd and Nicor Gas tracking systems, resulting in a realization rate of 1.03 for electric savings, and 1.00 for gas savings (realization rate = verified gross / ex-ante gross from the tracking system).

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<sup>6</sup> The September 14, 2012 final version of the first State of Illinois Energy Efficiency Technical Reference Manual (TRM) (effective as of June 1, 2012) was approved on January 9, 2013 by the Illinois Commerce Commission in Docket No. 12-0528. The verified gross savings shown in Table E- 5 recognizes that gas measures covered by the TRM are deemed for evaluation purposes in GPY1. Since the TRM was not final until after the end of GPY1, the TRM is applicable for evaluation purposes, but not GPY1 implementation. Evaluation research findings for gross savings in GPY1 are provided in the Appendix.

Table E- 5 also provides the verified findings for net energy savings based on research conducted with first-year program participants and trade allies to estimate the NTGRs. The NTGR for electric savings was 0.95, while the NTGR for Nicor Gas savings was 1.00. The NTGR for Nicor Gas reflects free-ridership at 2 percent offset by participant self-reported spillover of 2 percent. Three small participant spillover projects were included in the ComEd NTGR, but the impact (about 0.003 added) was not significant at the two-digit level. Trade allies reported no non-participant spillover for gas measures. Trade allies provided anecdotal evidence of non-participant spillover for electric measures, but they did not provide enough information to quantify it.

**Table E- 5. Savings of the Small Business Energy Savings Program**

Savings Estimate	EPY4 ComEd Electric Energy Savings (kWh)	EPY4 ComEd Electric Peak Demand Reduction (peak kW) <sup>†</sup>	GPY1 Nicor Gas Natural Gas Energy Savings (Therms) <sup>7, 8</sup>	
			ICC-Approved TRM Algorithm	Corrected TRM Algorithm
Ex-Ante Gross*	10,728,417 <sup>9</sup>	NA	104,483	109,353
Ex-Ante Net**	8,582,734	NA	83,586	87,482
Tracking System Ex-Ante Gross	9,206,981	1,704	NA	NA
Verified Gross	9,483,190	1,755	104,483	109,353
Verified Net	9,009,031	1,677	104,483	109,353

\* Source: Electric ex-ante gross savings from ComEd online tracking system, October 29, 2012. Nicor Gas ex-ante savings from an extract dated October 6, 2012.

\*\* ComEd ex-ante net savings shown here is an evaluation estimate that applied a NTGR of 0.80 to the ex-ante gross savings. Nicor Gas ex-ante net savings includes a NTGR of 0.80.

The relative precision at a 90% confidence level is  $\pm 5$  percent for the electric gross impact savings verification sample, and  $\pm 3$  percent for the electric NTG sample. The relative precision at a 90 percent confidence level is  $\pm 10$  percent for the gas NTG sample, and no evaluation adjustments were made as a result of the gross impact verification of gas measures.

The primary impact findings and recommendations are as follows:

**Finding:** For electric measures claimed by ComEd, the telephone survey responses from 89 of 90 participants confirmed measure installations. On one project, the respondent reported that only 12 of 18 claimed direct installed CFLs were installed. Invoices supplied for file reviews confirmed claimed measure counts, but two

<sup>7</sup> The ex-ante gross savings for Nicor Gas shown in the column labeled “ICC-Approved TRM Algorithm” have not been adjusted for errata found in the approved September 14, 2012 TRM that are corrected by removing the GPM factor from the algorithm for aerators and showerheads. The ex-ante and verified gross and net savings that reflect the corrected algorithm are found in the column labeled “Corrected TRM Algorithm.”

<sup>8</sup> Verified gross and net savings match ex ante gross savings for Nicor Gas due to a verified gross realization rate of exactly 1.00, and a NTGR of 1.00 when rounded to two decimal places of precision.

<sup>9</sup> Derived by Evaluation staff from ComEd’s tracking system data.

of the on-site verification visits found some differences between claimed quantities and observed lighting fixture types and quantities.<sup>10</sup> Adjustments to these three individual projects resulted in realization rates higher and lower than 1.0, but in aggregate the resulting savings for sampled projects was very close to 1.0. Rounded to two digits, the final evaluation verified gross realization rate was equal to 1.03. There were no adjustments to claimed quantities or measure types for gas measures claimed by Nicor Gas based on the Computer-Assisted Telephone Interviewing (CATI) survey, the file reviews, or the on-site visits.

- **Recommendation:** Implementers should reinforce with trade allies the importance of accurate invoicing that reflects final customer decisions regarding installed measures. On those lighting projects where differences were found between verified and claimed savings, it appeared customers and trade allies had altered the scope on one or two measures after the initial assessment but did not update the invoice. The changes we observed led us to believe these were reasonable modifications to accommodate facilities with a mix of spaces and fixtures, and did not result in significant deviations from claimed project savings or cost. The basic issue is ensuring that the type and quantity of energy efficient equipment installed was correctly invoiced and the database updated.

**Finding:** On five of 90 telephone interviews, participants had indicated they had added some lighting, roughly 1 to 2 percent of their installed quantities, to the same spaces after completing the project to increase light levels. This resulted in minor adjustments to reduce savings for those projects

- **Recommendation:** While some level of post-installation adjustment to quantities is to be expected, implementers should monitor participant satisfaction regarding lighting levels.

**Finding:** Evaluation research findings for customer participant self-reported free-ridership were 17 percent for ComEd and 20 percent for Nicor Gas, very close to the ex-ante value of 20 percent assumed in program planning for both utilities. In contrast, trade ally feedback supported free-ridership estimates of 2% for gas and 5% for electric measures.

While nearly all participants reported a high level of influence by the program, several indicated some level of intention to pursue efficiency projects had the program not been available, captured as a partial score of non-zero free-ridership, while still recognizing the influence of the program.

Given the program’s logic model and market structure, Navigant recognizes that a traditional participant self-report may overstate free-ridership. The program’s basic premise is that small businesses are hard to reach through other energy efficiency programs. In this circumstance, participant responses to the counterfactual (*What would you do in the absence of the program?*) are not a very reliable indicator because market barriers have limited to date, and would continue to limit, small business purchases and installations of qualifying equipment.

Thus, trade allies comprise the best source of information about the market’s structure (both before and after the introduction of the program). For this reason, Navigant conducted telephone interviews with participating contractors to determine how the sales to small businesses changed (both in content and quantity) as the program began to serve utility customers in the Chicago area.

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<sup>10</sup> These were ComEd projects with PJ\_ID 2759 and 4656.

Individual trade ally responses to free-ridership questions were weighted by their respective fuel-specific program savings contributions and combined for a fuel-specific overall free-ridership rate. This approach resulted in an evaluation estimate of 2 percent free-ridership for gas measures, and 5 percent free-ridership for electric measures. We used the trade ally estimate as a cap or maximum value for free-ridership, concluding that the trade allies used the program to overcome market barriers to serve a hard-to-reach audience. This is supported by self-reported customer participant free-ridership responses that recognized the program influenced them to act on their indefinite intentions and the program theory that the program was designed to serve an under-served market.

**Finding:** The per-unit savings values provided by ComEd and Nicor Gas were reasonable first-year ex-ante savings estimates, given that participant equipment sizes and operating hours were assumed. Based on better information, we made minor adjustments to the per-unit savings for five electric measures. We adjusted the three water-saving electric measures (i.e., aerators, showerheads, and pre-rinse sprayers) to apply usage assumptions and algorithms from the Illinois TRM to match the gas measure savings.<sup>11</sup> We also adjusted the savings for the 2 (and 4) lamp 8 foot T12 conversion to a 2 (and 4) lamp four foot high performance T8 fixture, due to an error (the delamping savings were in the original default savings, but the T12 to T8 conversion savings were missing).

There are three areas of higher uncertainty that require attention in the second program year: lighting hours of use, heating equipment capacities, and programmable thermostat per-unit savings. Where lighting measures were installed, survey participants were asked a detailed set of questions to determine lighting schedules and percent of lights that are on during open and closed times. The average annual equivalent full-load hours for 26 ComEd respondents were 2,954 annual hours. This compares with default values in the Illinois TRM of 4,576 annual hours for fixture-based lighting and 3,198 annual hours for screw-based lighting for the “Miscellaneous” building type. In particular, places of worship reported lower-than-average full load operating hours. This finding is of some concern: if the initial lighting assessment over-estimates the expected savings of measures, the actual payback will lengthen and alter cash-flow.

Nicor Gas based their boiler measure savings on fixed, assumed equipment sizes in the first year, whereas the Illinois TRM<sup>12</sup> estimates savings using heating equipment gas input size as a measure-level custom input to the algorithms. We did not observe project-specific heating equipment sizes in the tracking system or listed in the project documentation we sampled. Programmable thermostats are a high volume measure in the SBES program not covered by the Illinois TRM, and should be reviewed for addition.

- **Recommendations** for potential updates and revisions to the Illinois TRM are provided in Appendix 5.4.
- **Recommendation:** The Illinois TRM should consider adding one or more new building types for selective use by the Small Business program, such as a “low hours-of-use miscellaneous” building type that may be used for participants with lower lighting operating hours.

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<sup>11</sup> The TRM is not required for electric measures in EPY4; however, evaluation considers the TRM to be the best available savings estimate for the water saving measures. The TRM savings for C&I aerators and showerheads were reviewed by the TRM Technical Advisory Committee and found to have an algorithm error that, when corrected, results in an upward revision to per-unit savings. For electric showerheads and aerators, evaluation used the corrected algorithm for evaluated savings. The errata correction had not been approved by the ICC as of the date of this report, however, so alternative gas savings estimates reflecting each of the algorithms were provided.

<sup>12</sup> State of Illinois Energy Efficiency Technical Reference Manual, Final version, September 14, 2012, effective June 1, 2012.

- **Recommendation:** Site assessment reports for places of worship and other low-use facilities should check projected savings against usage history to ensure savings estimates provided to customers are reasonable.
- **Recommendation:** The program should collect boiler and furnace heating system capacities to enable the program to claim actual rather than default savings.<sup>13</sup>
- **Recommendation:** Confirm that the tracked savings in EPY5 match the Illinois TRM for water saving measures, and check that the delamping measures include the T12 to T8 conversion savings.

We observed in the database that some instances of identical measures and building types used different per-unit savings (e.g., claimed savings matched different building types). We did not adjust for this finding, because it appeared that the claimed savings were reasonable selections for the businesses, even if the recorded building type was not consistent with the deemed savings. We suspect this is due to the ambiguity in assigning building types for some small businesses, and projects that may encompass a portion of the space in a business that may be different than the business as a whole. Possibly the business type is not updated to reflect the final project.

- **Recommendation:** Review database tracking and updating procedures to improve consistency between ex ante per-unit savings and recorded building type.

## ***E.5 Key Process Findings and Recommendations***

The key process finding and recommendations are as follows:

**Finding:** With respect to savings goals, Nicor Gas did not reach their goal of 169,329 net therm savings in the first year, achieving 104,483 net therms, which is 62 percent of goal. ComEd exceeded their energy saving goal of 5,960,000 net kWh goals during the first year by achieving 9,009,031 net kWh, which is 151 percent of goal.

Nicor Gas program planners assumed that first-year participation would be much higher than achieved. For instance, the Nicor Gas efficiency plan for GPY1 assumed 169,329 net therms saved from 1,140 projects, about 149 therms per project. The actual number of participants was far lower, 272 participants for GPY1, saving 104,483 net therms or 384 therms per project. Although GPY1 projects were larger than planned, planners overestimated the number of projects that would be completed in the first year. The goals set by ComEd for electric savings were commensurate with the high-level of engagement by lighting trade allies, while the goals for Nicor Gas were too high for the number of active gas measure trade allies and their level of engagement.

- **Recommendation:** Lighting-only firms participated at twice the rate of HVAC-only firms in EPY4/GPY1. Nexant has been actively recruiting more HVAC contractors and mechanical engineering firms for GPY2. The Evaluation Team advises Nexant to concentrate on HVAC firms that are willing to enter partnership relationships with lighting companies and that are in less-covered geographic areas.

**Finding:** The SBES Program may need more time than other programs to ‘ramp up’ to full speed. Small business customers are not educated about the savings potential of energy efficient equipment and are

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<sup>13</sup> The implementation contractor indicated in draft comments that they are collecting heating system capacities in GPY2.

somewhat skeptical that the utilities are offering the program. They tend to be unaware of the surcharge and the other programs offered by the utilities.

**Finding:** The program appears to be changing the structure of the market. Trade allies are forming partnerships by purchasing other companies, and adding more staff to sell the program and install both lighting and HVAC equipment. Two trade allies, one lighting company and one mechanical engineering firm, purchased a company to be in a position to deliver the full set of program measures. Other firms hired more staff and one opened an additional office in the Chicago area. Structural changes such as these, purchasing companies and forming long-term partnerships, take time to fully impact the market.

- **Recommendation:** Nicor Gas should revisit the expected participation levels for the SBES Program. Small business customers are 'low information' customers and it will take time and resources for their knowledge base to catch up with that of larger customers. In addition, some of the trade allies have made significant investments to participate in this program; the utilities should respect their efforts to embrace the program.

**Finding:** Nexant staff and utility staff judged the success of the marketing of the SBES Program more favorably than trade allies. Trade allies thought more marketing was the way to raise awareness with customers. Radio was the most preferred channel among trade allies, along with direct mail.

- **Recommendation:** ComEd and Nicor Gas need to continue general advertising of the SBES Program to increase customer awareness and receptivity and promote the program.

**Finding:** During the Due Diligence review, Navigant understood that customers currently do not sign any documents if they change the scope of the project when the trade ally arrives at the customers' facility. Alternatively, the customer signs but the customer approval and the scope of the approved project was not entered into the tracking system. In this situation, the invoice from the trade ally was used as the final determination of the number and type of measures installed.

- **Recommendation:** Customers should be required to sign a change-order (tracking) form if they change the scope of the project substantially to ensure that the changes to measure quantities are recorded in the tracking system for evaluation purposes.<sup>14</sup>

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<sup>14</sup> In PY2/5 Nexant is requiring customers to sign/initial a revised Installation Agreement with the scope changes noted.



## 1. Introduction to the Program

### 1.1 *Program Description*

The SBES Program is designed to achieve energy savings goals by educating ComEd/Nicor Gas and ComEd/Peoples Gas/North Shore Gas non-residential customers about electric and natural gas opportunities through on-site assessments. Energy advisors from Peoples Gas/North Shore Gas implementer Franklin Energy or Nicor Gas implementer Nexant conduct a high-level walk-through assessment of each site. Customers achieve immediate savings with the direct installation of specific products during the assessment at no cost to them. The no-cost measures promoted by the program include the direct installation of low-flow faucet aerators and showerheads, pre-rinse spray valves, vending machine controls, and compact fluorescent lights. Nexant and Franklin Energy tested offering free installed programmable thermostats to encourage customers to participate in the assessments in GPY1.

In addition, further savings are offered to customers through generous incentives of 30 to 70 percent for select, low-cost natural gas and electric energy efficiency measures that may be installed by a local contractor at a second on-site visit. If the premise is rented, the program implementer coordinates with the landlord/property owners. These low-cost measures installed by the contractor differ by gas utility but may include:

- Lighting measures
- Guest room energy management
- Installation of programmable thermostats
- Steam traps, repair or replacement
- Boiler tune-up
- Boiler reset controls
- Furnaces of at least 92% AFUE
- Water heaters of at least 88% thermal efficiency
- Furnace tune-ups

Program staff maintains a list of assigned local trade allies and assigns contractors on a rotating schedule unless the contractor recommends the program to the customer.

Participants must be both active Commercial & Industrial (C&I) customers of ComEd with peak monthly demand of less than 100 kW and Nicor Gas or Peoples Gas/North Shore Gas customers who use less than 60,000 therms per year.

### 1.2 *Evaluation Questions*

The evaluation process for EPY4/GPY1 sought to answer the following researchable questions from a number of key areas. Each set of questions was assessed separately for ComEd, Peoples Gas/North Shore Gas, and Nicor Gas.

The impact evaluation questions focus on the following key areas:

- What are the evaluation-verified gross impacts from this program?



- What are the evaluation-verified net impacts from this program?
- Are the per-unit energy savings values reasonable?
- Did the SBES program meet its energy savings goals by utility? If not, why not?

The process evaluation questions focus on the following key areas:

- Was the implementation of the SBES program effective?
- Was the administration and delivery of the program effective?
- How effective were the program design and processes?
- Were customers and program partners satisfied with the program?
- What are the opportunities for improving the SBES program?
- Are customers sufficiently aware of the SBES program?
- What are the potential market effects of the program?

## 2. Evaluation Methods

### 2.1 Primary Data Collection

Data collection for the gross impact analysis included:

- Engineering review of default savings assumptions and examination of tracking system calculations of claimed savings.
- Participating customer telephone survey to verify participation and gather site-specific measure data.
- Engineering review of project documentation at the measure level for a sample of projects to verify participation and compliance with claimed default savings.
- On-site verification for a sample of projects to verify the equipment was installed as invoiced.

Free-ridership was calculated using an algorithm based on interview results from participating customers supported by data collected from in-depth trade ally interviews. The existence of spillover was examined using customer participant survey self-report data and trade ally self-report data on customer behavior.

The process analysis was conducted following completion of the telephone surveys of program participants. Process data from trade ally interviews, participant surveys, program manager interviews, and implementer interviews were analyzed to identify the most defensible conclusions and recommendations. The process participant survey and in-depth interview guides are included in Appendix 5.7.

**Table 2-1. SBES Program Evaluation Data Collection Research Methodologies**

Collection Method	Subject Data	Quantity	Gross Impact	Net Impact	Process
Engineering Review	Sample of Survey Participants	10 ComEd 7 Nicor	X		
Onsite Audits	Subset of Engineering Review Sample	7 ComEd 3 Nicor	X		
Telephone Survey	NTGRs and Process Evaluation Data Including Realization Rates	99 (ComEd Process) 90 (ComEd Impact) 47 (Nicor Process) 31 (Nicor Impact)	X	X	X
In-Depth Interviews	Participating Trade Allies	10		X	X
In-Depth Interviews	Program Staff	1			X
In-Depth Interviews	Utility and Implementer Staff	6			X

### 2.1.1 Tracking Data

Navigant staff extracted the tracking data for electric measures from a copy of the ComEd online database uploaded to ComEd's evaluation team SharePoint, and the tracking data for Nicor Gas measures from a separate Nicor Gas evaluation SharePoint site. Telephone numbers were used to link electric and gas measures installed at a specific site represented by a participant contact. The sample for telephone interviews was based on data from a ComEd extract dated July 5, 2012 and Nicor Gas data from August 27, 2012.

The final tracking data used to provide program reported ex-ante electric energy savings for this evaluation were uploaded by ComEd on October 29, 2012. The final tracking data used to provide program reported ex-ante gas energy savings for Nicor Gas were dated October 6, 2012.

### 2.1.2 Program and Implementation Staff Interviews

The evaluation team conducted an interview with the ComEd Program Manager and the WECC Program Manager, representing Nicor Gas, for the Small Business Energy Savings Program. These calls covered key changes to the program design and implementation for EPY4/GPY1. The Navigant team also conducted multiple interviews with staff members at Nexant (4) and Franklin Energy (4) who were responsible for program implementation, program delivery, and marketing strategies.

### 2.1.3 Market Actor (Trade Ally) In-Depth Interviews

The Navigant team interviewed ten trade allies as part of the EPY4/GPY1 evaluation of the ComEd/Nicor Gas SBES Program. The interviews focused on (1) how the program has affected business practices and market trends, (2) NTG questions, (3) barriers to installation of energy efficient equipment and customer participation in the program, and (4) satisfaction with the program and participation processes. Trade ally participants in the SBES program include lighting contractors, HVAC contractors, and environmental companies that specialize in providing energy efficient products.

### 2.1.4 Sampling Plan

The sampling strategy for the CATI surveys was designed to produce 90/10 confidence/precision levels for program-level savings estimates for ComEd participants and for Nicor Gas participants. The sample was also designed to ensure inclusion of projects with direct-install measures as well as contractor-install measures, and projects with electric measures as well as gas measures.

For GPY1 and EPY4, a statistically significant sample based on 90/10 confidence/precision levels for program-level savings was achieved based on telephone verification interviews. The specific customer projects receiving the engineering reviews or site visits were selected from the telephone interview respondents to represent larger or more complicated SBES projects.

Navigant completed process interviews with 99 ComEd and 47 Nicor Gas customer participants.<sup>15</sup> NTG and gross impact interviews were completed with 84 and 90 EPY4 participants, respectively, resulting in a precision level of +/-3 percent for ComEd NTG results and +/-5 percent for ComEd gross impact results at a

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<sup>15</sup> Of the 99 ComEd customers surveyed, 47 were Nicor Gas customers that had one or more gas measures installed under the SBES program.

90 percent level of confidence. NTG and gross impact interviews were completed with 24 and 31 GPY1 Nicor Gas participants,<sup>16</sup> respectively, resulting in a precision level of +/-10 percent for NTG results, while no evaluation adjustments were made as a result of the gross impact verification.

#### **2.1.5 Project Application File Review**

To support final application file review, the team requested project documentation in electronic form from Nexant for seven Nicor Gas projects and ten ComEd projects, with some overlap between ComEd and Nicor Gas. Documentation included some or all of the scanned files, which comprised hard copy application forms and supporting documentation from the applicant and trade ally (application, invoices, measure specification sheets), implementer assessment reports, post-inspection reports (when conducted), and a project summary report (for Nexant-implemented projects).

#### **2.1.6 On-Site Visits**

The Navigant team conducted on-site surveys for seven ComEd applications sampled; three of the seven also had Nicor Gas measures installed. During each on-site visit, the evaluator identified whether the measures were installed and operating, collected equipment nameplate data, and provided a description of site conditions that might contribute to baseline selection.

#### **2.1.7 CATI Telephone Survey of Participating Customers**

A Computer-Assisted Telephone Interviewing (CATI) survey was conducted with a sample of ComEd and Nicor Gas program participants. The sample was drawn from the set of unique customer contact names found in the tracking system for EPY4 and GPY1 paid SBES projects. This survey focused on three key areas: (1) questions to estimate net program impacts (i.e., quantitative assessment of free-ridership and spillover), (2) measure data such as installed quantities in support of the gross impact analysis, and (3) questions to support the process evaluation. All interviews were completed in August or September of 2012. The participant survey can be found in Appendix 5.7.

#### **2.1.8 In-Depth Interviews with Utility Program Managers, Program Implementer Staff, and Trade Allies**

Interviews with utility program managers, participating trade allies, and staff of the implementation contractor, Nexant, are central to the process evaluation for the SBES Program. The interviews were supplemented with a review of relevant program tracking databases, documents, and other materials to understand how the program was implemented during the first year.

The evaluation team used senior staff members to conduct in-depth qualitative interviews. Senior staff were flexible in their approach to the discussion, allowing the respondent to talk about his/her experience or perspective while still guiding the discussion toward the most important, relevant and necessary information. The team developed interview guides in an open-ended format that allowed for a free-flowing discussion between interviewer and respondent, based on the respondents' knowledge of and experience with the program.

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<sup>16</sup> For seven interviewees, Nicor Gas GPY1 participation was for direct install measures, but the NTG interview focused on electric contractor installed measures. For 16 interviewees, a NTG interview was completed on contractor installed measures; however, those participants had contractor installed gas projects completed in GPY2 rather than GPY1.

## 2.2 *Impact Evaluation Methods*

### 2.2.1 **Defining Ex Ante Measure-Level Energy Savings**

The ex-ante gross energy savings for most of the electric lighting measures in the EPY4 SBES program are calculated from per-unit savings values defined by the document *Plan Year 4 Deemed Savings Values 31230.pdf*<sup>17</sup>. For the SBES program, the *Plan Year 4* document indicated for “Prescriptive based measures,” that “Some measures deemed per Prescriptive program”, while for “All other measures” it indicated that “New Program – realization rates not eligible for deeming at this time.” The technical basis for ComEd’s ex-ante gross savings are contained in the ComEd document *Appendix A – ComEd Work papers 8-5-11.pdf*.<sup>18</sup> These two ComEd sources allowed the evaluation team to review default savings for all lighting measures and inform adjustments if warranted. The electric hot water saving measures (aerators, showerheads, and pre-rinse sprayers) are not included in ComEd’s *Plan Year 4 Deemed Values* or *Appendix A*, and were assigned default values by the implementers. Vending and cooling miser devices were assigned default values from the State of Illinois Energy Efficiency Technical Reference Manual (TRM)<sup>19</sup>

The Illinois TRM provides the per-unit savings for gas measures, with some exceptions for measures that were not covered in the current TRM version. For measures not covered by the Illinois TRM, the implementers provided default values and assumptions that were used in program planning.

### 2.2.2 **Verification Method**

Data collection for the impact analysis included an engineering review of measure per-unit savings assumptions, an examination of tracking system calculation of claimed savings, participating customer telephone surveys to verify participation and gather site-specific measure data, engineering review of project documentation at the measure level for a sample of projects, and on-site verification for a small sample of projects to verify the equipment was installed as invoiced.

Evaluation verified gross savings for sampled projects were estimated through the following approach, for each sampled measure:

1. In the CATI telephone survey, interviewers described measure type and quantities reported in the tracking system and asked participants to verify whether the measures as described had been installed, and if not, whether they could identify currently installed quantities and measures. Questions were asked for all direct-installed measures reported at a site, and up to three contractor-installed lighting measures and three non-lighting measures. The evaluation then calculated a realization rate as verified quantities divided by ex-ante quantities reported in the tracking system.
2. On measures where an in-service rate is factored into ex-ante savings, quantity reductions were noted but impacts were not adjusted.
3. The evaluation reviewed measures in the survey sample to determine whether per-unit savings were correctly applied in the ex-ante gross savings calculation. If the per-unit savings value was not correct, the evaluation calculated a realization rate adjustment (defined as evaluation estimated per-unit savings divided by ex-ante per-unit savings).

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<sup>17</sup> This document is on the ICC web site for docket 10-0570. (<http://www.icc.illinois.gov/docket/Documents.aspx?no=10-0570>)

<sup>18</sup> Provided by David Nichols, email August 12, 2011.

<sup>19</sup> Final version, September 14, 2012, effective June 1, 2012.

4. For projects that received a file review or an on-site visit, an engineering verification realization rate was applied that adjusted for either verified quantities or measure type as observed in documentation or on-site. Findings from the on-site surveys took precedence over the file reviews and CATI responses when making adjustments for a given site.

A verified gross realization rate was then estimated for the sample and applied to the total program ex-ante gross savings. The result is the evaluation verified gross savings for the Small Business Energy Savings program.

### 2.2.3 Net Savings Approach

The evaluation calculated free-ridership using an algorithm approach based on interview results from participating customers supported by data collected through in-depth trade ally interviews. The existence of spillover was examined using survey self-report data and trade ally self-report data.

This program has not been evaluated before and so, according to the NTG Framework,<sup>20</sup> the net-to-gross ratio (NTGR) is to be applied retroactively. The program falls under the following condition from the NTG Framework: *“For existing and new programs not yet evaluated, and previously evaluated programs undergoing significant changes — either in the program design or delivery, or changes in the market itself<sup>21</sup> — NTGRs established through evaluations would be used retroactively, but could also then be used prospectively if the program does not undergo continued significant changes.”*

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<sup>20</sup> “Proposed Framework for Counting Net Savings in Illinois.” Memorandum March 12, 2010 from Philip Mosenthal, OEI, and Susan Hedman, OAG.

<sup>21</sup> An example of a market change might be where baselines have improved significantly and the likely free riders are growing substantially because of it.

### 3. Evaluation Results

#### 3.1 *Impact Evaluation Results*

##### 3.1.1 **Verification and Due Diligence Procedure Review**

The evaluation team performed a verification and due diligence review of the quality assurance, program tracking, and savings verification procedures of the joint Nicor Gas and ComEd SBES Program during the program’s first year. Navigant reviewed application documentation for four projects comprising a mix of selectively chosen no-cost direct-install and capital investment measures.<sup>22</sup> The verification and due diligence recommendations are based on findings from interviews with program staff and implementation contractors, project documentation review, and a comparison of the SBES program activities to national best practices.

To conduct the best practices benchmarking assessment, the evaluation team compared the Implementation Contractor’s practices with the Best Practices Self-Benchmarking Tool<sup>23</sup> from the National Energy Efficiency Best Practices Study for C&I programs. The benchmarking categories used were Quality Control and Verification, Table 3-1, and Reporting and Tracking, Table 3-2. The evaluation team found that a significant proportion of the contractor practices could be improved. The complete Verification and Due Diligence Memo can be found in its entirety in Appendix 5.4.

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<sup>22</sup> Projects were not selected randomly, but with an eye toward choosing those that were more complex or those with a higher likelihood of having erroneous entries.

<sup>23</sup> See the Best Practices Self-Benchmarking Tool developed for the Energy Efficiency Best Practices Project: <http://www.eebestpractices.com/benchmarking.asp>



**Table 3-1. Comparison of IC Practices to Best Practices Tool - Quality Control and Verification**

ID	Best Practice	Score <sup>24</sup>
1	Assure quality of product through independent testing procedures.	Meets best practice
2	Use measure product specification in program requirements and guidelines.	Needs some improvement
3	Use incremental costs to benchmark and limit payments, and set an incentive strategy to maximize net not gross program impacts.	Meets best practice
4	Develop inspection and verification procedures during the program design phase.	Needs some improvement
5	Implement a contractor screening/certification/training process.	Meets best practice
6	Conduct an Independent audit for pre- or post-installation inspections.	Needs some improvement
7	Always inspect the first job submitted by a new vendor or Contractor.	Meets best practice
8	Build in statistical features to the sampling protocol to allow a reduction in the number of required inspections based on observed performance and demonstrated quality of work.	Needs some improvement
9	Tie staff performance to independently verified results.	Meets best practice
10	Assess customer satisfaction with the product through evaluation.	Meets best practice

<sup>24</sup> The Navigant Team was unable to verify certain data fields in the database in EPY04/GPY01. Based on feedback from Nexant we believe that much of this data is stored in the database. The table will be changed during the next evaluation cycle to reflect the verifiable situation at that time.

**Table 3-2. Comparison of IC Practices to Best Practices Tool - Reporting and Tracking**

ID	Best Practice	Score
1	Define and identify key information needed to track and report early in the program development process.	Needs some improvement
2	Use automated or otherwise regularly scheduled notification to achieve close monitoring and management of project progress.	Meets best practice
3	Design program tracking system to support the requirements of evaluators as well as program staff.	Needs some improvement
4	Set reasonable and accurate expectations for energy savings and measure performance.	Meets best practice
5	Integrate or link with other appropriate systems such as cross-program databases, customer information systems (CIS) and marketing or customer relationship management (CRM) systems.	Needs significant improvement
6	Verify accuracy of invoices to ensure the reporting system is recording actual product installations by target market.	Needs some improvement

### 3.1.2 Tracking System Review

The primary purpose of the tracking system review due diligence task was to determine:

- Whether project eligibility criteria have been properly adhered to and applications are backed with supporting documentation;
- Whether savings were calculated correctly and project information entered in an accurate and timely manner in the program tracking system; and
- If key quality assurance and verification activities were adequately implemented.

For Nexant, Navigant staff reviewed the:

- Rider 30 Program Portfolio Operating Plan<sup>25</sup>
- SBES program’s Operations Manual<sup>26</sup>
- Implementation Scope of Work<sup>27</sup>
- Application Forms
- Site Energy Assessment Reports
- Installation Agreement Forms

<sup>25</sup> Nicor Gas Rider 30 EEP Program Portfolio Operating Plan (Version 1.1)

<sup>26</sup> ComEd-Nicor SBES Program Manual - Nexant Draft DIH edit 042712.docx

<sup>27</sup> Small\_Business\_Energy\_Efficiency\_Services\_SOW\_Nicor\_WECC\_Final Rev 11 070811.docx

In addition, Navigant performed a detailed review of the program database tracking system. Staff requested from the program implementers paper or scanned copies of handwritten application documents of selectively chosen projects.

### 3.1.2.1 *Summary of Recommendations for the Nexant Database*

Navigant offers the following recommendations to improve the SBES program implementation activities, the quality assurance and verification procedures, and the data tracking and reporting system for the Nexant Database<sup>28</sup>:

- **Consider revision of the program Operations Manual** to clarify annual program post-inspection targets.
- **Consider modification of the Site Energy Assessment Report** to include information about the condition of the baseline equipment that was replaced.
- **Ensure handwritten notes are legible.**
- **Ensure the Installation Agreement Form is complete, dated, and establishes a process for trade allies to confirm the scope of the Installation Agreement when a change is made.**
- **Complete post-inspections for both gas and lighting capital investment installation.**
- **Develop a simplified database with data dictionary and process guide that supports program evaluation efforts.**
- **Include heating system capacities, which are necessary for program evaluation, in the tracking system.** If these are tracked in the TrakSmart, they should be made available for evaluation review.
- **Consider sharing additional information** (such as trade ally contact data, existing equipment specifications, post-installation inspection findings, and invoice numbers from capital investment projects) **from the tracking system necessary for program evaluation.** If these are not in the database, begin collecting these data and add them to the database.
- **Ensure accurate and complete tracking of project information.**

The complete Tracking System Review can be found in the Appendix 5.6.

### 3.1.3 **Measure Per-Unit Savings Review**

The measure per-unit savings values provided by ComEd and Nicor Gas were reviewed and found to be reasonable as first-year ex-ante savings estimates, given that participant equipment sizes and operating hours were assumed, although we made minor adjustments to the per-unit savings for five electric measures. We adjusted the three water-saving electric measures (aerators, showerheads, and pre-rinse sprayers) to apply usage assumptions and algorithms from the Illinois TRM to match the gas measure savings.<sup>29</sup> We also adjusted the savings for 2 (and 4) lamp 8 foot T12 conversion to a 2 (and 4) lamp four foot

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<sup>28</sup> Nexant is to be commended for their fast response to some of our recommendations. Therefore, most of these recommendation will be irrelevant during the next evaluation.

<sup>29</sup> The TRM is not required for electric measures in EPY4; however, we consider the TRM to be the best available savings estimate for the water saving measures. The TRM savings for C&I aerators and showerheads were reviewed by the TRM Technical Advisory Committee and found to have an algorithm error that, when fixed, results in an upward revision to

high performance T8 fixture, to correct an error (the delamping savings were in the original default savings calculation, but the T12 to T8 conversion savings were missing). These adjustments are summarized below:

- **C&I Aerators and Showerheads TRM Errata.** An error was found in the Illinois TRM for Commercial and Industrial aerators and showerheads and was brought to the attention of the TRM Technical Advisory Committee: an adjustment of the “GPM factor” was redundant in the algorithm, resulting in savings that were underestimated for gas and electric water heating. We used the corrected TRM algorithm and assumptions for electric savings in the main report as the best available engineering estimate of these non-deemed electric measures. However, since the ICC had not approved use of the corrected algorithm as of the date of this report, we have provided gas savings reflecting both the uncorrected and corrected algorithms. We recommend that commercial faucet aerator and showerhead measures in the TRM be updated to base savings on commercial water consumption rather than residential water consumption.
- **Low-flow Aerators.** Ex-ante savings were 123 kWh per unit for bath aerators, and 180 kWh per unit for kitchen aerators. We revised these values using corrected algorithms and assumptions from the Illinois TRM that matched the assumptions used for savings estimates for aerators by the SBES program when there is gas water heating. The revised values are 360 kWh per unit for bath aerators, and 297 kWh for kitchens.
- **Showerheads and Pre-rinse Sprayers.** Similar to aerators, we adjusted the default savings for these two electric water heating measures to match the corrected algorithms and assumptions from the Illinois TRM, to be consistent with the assumptions used for savings estimated for gas water heating. The showerhead savings were adjusted from 325 kWh to 437 kWh per unit, while pre-rinse sprayers were adjusted from 1,256 kWh to 4,154 kWh per unit.
- **Conversion of a two-lamp, eight foot T12 to a two lamp four foot high performance T8 fixture.** The per-unit savings claimed for this measure included the savings for delamping of one eight foot T12 lamp, but did not include the savings for the conversion of the remaining T12 lamp to high performance T8. This oversight was only found in the Nexant-submitted projects, and only on two particular measure codes (“L31” two lamp fixture and “L32” four lamp fixture), not on similar delamping-plus-conversion measure types.

We observed in the database that some instances of identical measures and building types used different per-unit savings – with claimed savings matching a different building type. We did not adjust for this finding, because it appeared that the claimed savings were reasonable selections for the businesses, even if the recorded building type was not consistent with the ex-ante per-unit savings value. We suspect this is due to the ambiguity in assigning building types for some small businesses, and projects that may encompass a portion of the space in a business that may be different than the business as a whole. Possibly the business type is not updated to reflect the final project.

Nicor Gas based their boiler measure savings on fixed, assumed equipment sizes in the first year, whereas the Illinois TRM estimates savings using heating equipment gas input size as a measure-level custom input to the algorithms. We did not observe project-specific heating equipment sizes in the tracking system or listed in the project documentation we sampled.

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per-unit savings. For electric-saving showerheads and aerators, we used the corrected algorithm in the main report for evaluated savings. The errata correction had not been approved by the ICC as of the date of this report; thus, for gas-saving showerheads and aerators, the savings using the uncorrected and corrected algorithms are provided side-by-side.

- **Recommendation:** . The program should collect boiler and furnace heating system capacities to enable the program to claim actual rather than default savings.<sup>30</sup>

Programmable thermostats are a high volume measure in the SBES program not covered by the Illinois TRM, and should be reviewed for addition.

- **Recommendations** for potential updates and revisions to the Illinois TRM are provided in Appendix 5.4.

### 3.1.4 Findings from the CATI Survey Impact Research Questions

Where lighting measures were installed, survey participants were asked a detailed set of questions to determine lighting schedules and percent of lights that are on during open and closed times. The average annual equivalent full-load hours for 26 respondents were 2,954 annual hours. This compares with values in the Illinois TRM of 4,576 annual hours for fixture-based lighting and 3,198 annual hours for screw-based lighting for the “Miscellaneous” building type. In particular, places of worship had full load operating hours much lower than average. This finding is of some concern: if the initial lighting assessment over-estimates the expected savings of measures, the actual payback will lengthen and alter cash-flow.

- **Recommendation:** Site assessment reports for places of worship and other low-use facilities should check projected savings against usage history to ensure estimates provided to customers are reasonable.
- **Recommendation:** The Illinois TRM should consider adding one or more new building types for selective use by the Small Business program, such as a “low hours-of-use miscellaneous” building type that may be used for participants with lower lighting operating hours.

A brief set of questions in the CATI survey was asked to support the gas savings verification gross impact evaluation, regarding installed measures, existence of maintenance contracts, removed equipment, and temperature settings for programmable thermostats. Table 3-3 identifies the gas measure-specific survey question or issue that was addressed, the participant responses, and conclusions.

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<sup>30</sup> The implementation contractor indicated in draft comments that they are collecting heating system capacities in GPY2.

**Table 3-3. Participant Responses to CATI Impact Questions**

Survey Question	Participant Responses	EM&V Conclusion
How many hours per day would you estimate the pre-rinse sprayer(s) is (are) used at this site?	5 respondents, one PRSV each: About one half hour (3); More than 3 hours (1); “Three hours per week” (1)	The respondent using a PRSV the longest hours was a restaurant; the other 4 were churches. If “more than 3 hours” is assumed to be three hours, average hours per day are 1 hour for respondents and we calculate TRM gross therms at 122 therms; if 6 hours, then the average is 1.6 hours per day or 196 gross therms per the TRM. Nicor’s assumption of 169 gross therms is reasonable.
Prior to receiving this tune-up on your heating system through this program, when did you last tune up your heating equipment?	10 respondents: “Within the past 3 years” (8), “Never” (1), “Don’t Know” (1).	The Illinois TRM specifies the baseline condition that the facility cannot have had a tune-up within the past 36 months (3 years). The TRM was not final until AFTER the end of GPY1, and this criteria was not applicable for implementation in GPY1. No evaluation adjustments were made to GPY1 savings.
Prior to receiving an energy assessment through this program, did <COMPANY> have a maintenance contract for the heating system equipment?	10 respondents: “Yes” (2), “No” (8)	The Illinois TRM specifies the baseline condition that the facility cannot have a standing maintenance contract or tune-up within the past 36 months (3 years). The evaluation determined since this condition was applicable AFTER the start of the program year, the program should be given the savings credit for GPY1.
Was the thermostat that you replaced a manual thermostat or a programmable thermostat?	11 respondents: manual thermostats (9), programmable (2)	The manual thermostats are acceptable baselines: no EM&V adjustment. The programmable thermostats received a follow-up question.
Did you program the thermostat you replaced for regular temperature setting changes, did you manually adjust it on occasion, or did you leave it at the same temperature setting always?	For the 2 respondents that had existing programmable thermostats replaced: manually adjust it on occasion (2)	Manual adjustment on occasion is an acceptable response to claim savings for this measure in GPY1. No EM&V adjustment.
Since installing the programmable thermostat, have you or a contractor programmed the temperature settings? Has the thermostat been programmed to maintain a different temperature during unoccupied periods than occupied periods?	11 respondents: programmed to maintain different temperatures (9); programmed but didn’t know schedule (1), did not program (1)	The 10 thermostats that were programmed are acceptable responses for ex-ante savings. The response that the thermostat has not been programmed is a research finding of zero savings.

Source: GPY1 CATI Survey

### 3.1.5 Gross and Net Program Impact Parameter Estimates

Evaluation research findings derived from customer participant self-reported free-ridership were 17 percent for ComEd and 20 percent for Nicor Gas, very close to the ex-ante value of 20 percent assumed in program planning for both utilities. While nearly all participants reported a high level of influence by the program, several indicated some level of intention to pursue efficiency projects had the program not been available, captured as a partial score of non-zero free-ridership, while still recognizing the influence of the program. However, these levels of free-ridership are inconsistent with the SBES program’s logic model. The program’s basic premise is that small businesses are hard to reach through other energy efficiency programs. Put another way, the existing market structure includes barriers that hinder small businesses from implementing energy efficient measures. The rationale for SBES is that only if the program can overcome these barriers will participation by these customers increase to a level commensurate with their presence in the market. If this were not the case, we would expect small businesses to participate in existing programs at a comparable level to larger businesses and there would be no need for SBES.

Given the program’s logic model and the underlying market structure on which it is based, Navigant recognizes that a traditional participant self-report may overstate free-ridership. Indeed, the individual responses showed a substantial amount of inconsistency, giving the program credit for influencing their decision on the one hand, and stating they might have implemented measures on their own on the other. This inconsistency supports a conclusion that, in reality, the program had an influence but that participants like to think they would have attended to efficiency matters, which is the “socially-responsible” answer.

In this circumstance, participant responses to the counter-factual (*What would you do in the absence of the program?*) are not a very reliable indicator because market barriers had undeniably limited small business purchases and installations of qualifying equipment previously and, presumably, would have continued to do so without the program. Regardless of what choice the participants thought they would have made in the absence of the program, the actual structure of the market defines a de facto upper bound (or “cap”) of free-ridership for this program. Free-ridership cannot exist in markets that would not have been served without the program first overcoming the market barriers. Only the remaining portion of the market, that portion served by trade allies that offered qualifying equipment, would be susceptible to free-ridership.

Thus, the trade allies comprise the best source of information about the market’s structure both before and after the introduction of the program. For this reason, Navigant conducted telephone interviews with participating contractors to determine how the sales to small businesses changed (both in content and quantity) as program began to serve utility customers in the Chicago area.

Individual trade ally responses to free-ridership questions were weighted by their respective fuel-specific program savings contributions and combined for a fuel-specific overall free-ridership rate. This approach resulted in an evaluation estimate of 2 percent free-ridership for gas measures, and 5 percent free-ridership for electric measures. The primary driver of the trade ally results is the consistent response, from a small number of trade allies that installed the vast majority of measures, that SBES strongly influenced their 2011 sales to small businesses to which they had not sold energy efficient products in the past. We used the trade ally estimate as a cap, or maximum value, for free-ridership, concluding that the trade allies used the program to overcome market barriers to serve a hard-to-reach market segment. This conclusion is supported by self-reported customer participant free-ridership responses that recognized the program influenced them to act on their indefinite intentions, and the program theory that the program was designed to serve an under-served market segment.

The program parameters used for estimating evaluation verified gross and net savings for the ComEd EPY4 SBES program are summarized in Table 3-4.

**Table 3-4. Program Parameters for the ComEd EPY4 SBES Program**

Parameter	Value	Deemed or Evaluated?	Source Notes
Free-ridership Rate from Customer Participant Data	0.17	Evaluated	Evaluation of EPY4 participants with electric saving projects
Free-ridership Rate from Trade Ally Data	0.05	Evaluated	Interviews with EPY4 trade allies
Program Free-ridership Rate	0.05	Evaluated	Evaluation analysis
Participant Spillover Rate	0.00	Evaluated	Evaluation of EPY4 participant responses. Participant spillover rate was 0.003 and rounded to zero.
Non-Participant Spillover Rate	0.00	Evaluated	Interviews with EPY4 trade allies
Evaluation Research Findings NTGR	0.95	Calculated	NTGR = 1- Program Free Rider rate + Participant Spillover rate + Non-Participant Spillover Rate
Quantity	Varies	Evaluated	Ex-ante quantities for the primary sample were verified by CATI survey, and by file review and on-site verification for a subset of the CATI respondents.
Ex Ante Gross Savings per Unit	Varies		<i>PY4 Deemed Values, Appendix A</i> , implementer calculations for water saving measures and vending/cooler misers
Verified Gross Savings per Unit	Varies	Evaluated	Evaluation analysis, using <i>PY4 Deemed Values, Appendix A</i> , and implementer calculations except where noted.
Research Findings Gross Savings per-Unit	Varies	Evaluated	Evaluation analysis, using CATI lighting hours of use, CATI reported quantities, and <i>PY4 Deemed Values, Appendix A</i> , and implementer calculations except where noted.
Verified Realization Rate on Ex-Ante Gross Savings	1.03	Calculated	Calculated from sampled EPY4 measures.
Research Findings Realization Rate on Ex-Ante Gross Savings <sup>31</sup>	0.86	Calculated	Calculated from sampled EPY4 measures.

The program parameters used for estimating evaluation research findings gross and net savings for the Nicor Gas GPY1 SBES program are summarized in Table 3-5.

<sup>31</sup> Details on the research findings for gross realization are provided in Appendix 5.2.3.



**Table 3-5. Program Parameters for the Nicor Gas GPY1 SBES Program**

Parameter	Value	Deemed or Evaluated?	Source Notes
Free-ridership Rate from Customer Participant Data	0.20	Evaluated	Evaluation of GPY1 participants with gas saving projects
Free-ridership Rate from Trade Ally Data	0.02	Evaluated	Interviews with GPY1 trade allies
Program Free-ridership Rate	0.02	Evaluated	Evaluation analysis
Participant Spillover Rate	0.02	Evaluated	Evaluation of GPY1 participant responses.
Non-Participant Spillover Rate	0.00	Evaluated	Interviews with GPY1 trade allies
Evaluation Research Findings NTGR	1.00	Calculated	NTGR = 1- Program Free Rider rate + Participant Spillover rate + Non-Participant Spillover Rate
Quantity	Varies	Evaluated	Ex-ante quantities for the primary sample were verified by CATI survey, and by file review and on-site verification for a subset of the CATI respondents.
Ex Ante Gross Savings per Unit	Varies		<i>Illinois TRM</i> , implementer calculations for measures not in the TRM (programmable thermostats, hot water turn-down and furnace tune-ups)
Verified Gross Savings per Unit	Varies	Evaluated	Evaluation analysis, using the Illinois and implementer calculations except where noted.
Research Findings Gross Savings per-Unit	Varies	Evaluated	Evaluation analysis, using CATI responses, and the Illinois TRM and implementer calculations except where noted.
Verified Realization Rate on Ex-Ante Gross Savings	1.00	Calculated	Calculated from sampled GPY1 measures.
Research Findings Realization Rate on Ex-Ante Gross Savings <sup>32</sup>	0.96	Calculated	Calculated from sampled GPY1 measures.

### 3.1.6 Gross and Net Program Impact Results

The verified gross and research findings net energy savings for ComEd’s electric energy savings in the SBES program are provided in Table 3-6.

<sup>32</sup> Details on the research findings for gross realization are provided in Appendix 5.2.3.

Table 3-6. Gross and Net Energy Savings, ComEd EPY4 SBES Program

Ex-Ante Gross Energy Savings, kWh	Evaluation Verified Gross Realization Rate on Ex-Ante Gross kWh Savings	Evaluation Verified Gross Energy Savings, kWh	Evaluation Research Findings Net-to-Gross Ratio	Evaluation Research Findings Net Energy Savings, kWh
9,206,981	1.03	9,483,190	0.95	9,009,031

Source: Savings verification and analysis of ex-ante gross savings from ComEd online tracking system, October 29, 2012 extract.

The relative precision at a 90 percent confidence level for the electric gross impact savings verification sample is  $\pm 5$  percent, and  $\pm 3$  percent for the NTG sample.

The evaluation verified gross and research findings net energy savings for Nicor’s gas energy savings in the SBES program are provided in Table 3-7. Alternative savings estimates are shown reflecting the ICC-approved and corrected TRM algorithms for faucet aerators and showerheads.

Table 3-7. Gross and Net Energy Savings, Nicor Gas GPY1 SBES Program

Aerator/ Showerhead Algorithm <sup>33</sup>	Ex-Ante Gross Energy Savings, Therms	Evaluation Verified Realization Rate on Ex-Ante Gross Therm Savings	Evaluation Verified Gross Energy Savings, Therms	Evaluation Research Findings Net-to-Gross Ratio	Verified Net Energy Savings, Therms
ICC-Approved TRM Algorithm	104,483	1.00	104,483	1.00	104,483
Corrected TRM Algorithm	109,353		109,353		109,353

Source: Savings verification and analysis of ex-ante gross savings from Nicor Gas tracking data October 6, 2012.

The relative precision at a 90 percent confidence level is  $\pm 10$  percent for the gas NTG sample, and no evaluation adjustments were made as a result of the gross impact verification. Verified gross and net savings match ex ante gross savings for Nicor Gas due to an evaluation verified gross realization rate of exactly 1.00, and a research findings net-to-gross ratio that was rounded to a two-digit level of 1.00.

<sup>33</sup> The ex-ante gross savings for Nicor Gas shown in Table 3-7 are calculated two different ways: using the algorithm specified in the approved September 14, 2012 TRM for C&I aerators and showerheads, and using that algorithm correcting for the redundant GPM factor for C&I aerators and showerheads.

### 3.1.7 TRM and Errata Details

As was described in section 3.1.3, during the EPY4/GPY1 SBES program evaluation an error was discovered in the Illinois TRM for Commercial and Industrial faucet aerators and showerheads which was brought to the attention of the TRM Technical Advisory Committee. An adjustment of the “GPM factor” in the algorithm was found to be redundant, resulting understatement of savings for gas and electric water heating. We used the corrected TRM algorithm and assumptions for electric savings throughout this report as the best available engineering estimate of these non-deemed electric measures. However, since the ICC had not approved use of the corrected algorithm as of the date of this report, we have provided gas savings estimates reflecting both the uncorrected and corrected algorithms. The detailed impacts of the algorithm corrections for calculating aerator and showerhead per-unit savings are shown in Table 3-8. The affected measures are highlighted.

**Table 3-8. TRM Aerator and Showerhead Algorithm Errata Details**

Installed Gas Measure Type	Nicor Gas				
	Ex-Ante Quantity Installed	Approved TRM Unit Savings	Approved TRM Ex-ante Gross Savings	Corrected Algorithm Unit Savings	Corrected Algorithm Gross Savings
[DI] Aerators - Bathroom	212	5.1	1,081	18.0	3,816
[DI] Aerators - Kitchen	46	4.3	198	15.0	690
[DI] Hot Water Turn Down	1	11.0	11	11.0	11
[DI] Pre-Rinse Sprayers	56	169.0	9,464	169.0	9,464
[DI] Showerheads	74	13.5	999	21.7	1,606
[CI] Boiler Reset Control	17	617.7	10,501	617.7	10,501
[CI] Boiler Tune-up	46	126.2	5,804	126.2	5,804
[CI] Condensing Furnace Upgrade	4	373.0	1,492	373.0	1,492
[CI] Furnace Tune-up	242	63.0	15,246	63.0	15,246
[CI] Install Programmable Thermostats	333	178.0	59,274	178.0	59,274
[CI] Aerators - Kitchen	57	4.3	245	15.0	855
[CI] Aerators - Bathroom	33	5.1	168	18.0	594
All Gas Measure Savings			104,483		109,353

### 3.2 Process Evaluation Results

The process component of the Small Business Energy Savings Program evaluation focused on:

- Customer and Trade Ally Satisfaction
- Program Awareness
- Marketing, Implementation, and Delivery

- Opportunities for Program Improvement
- Challenges and Barriers to the Program

The primary data sources for the process evaluation included the telephone survey with 99 ComEd SBES survey participants, 47 Nicor Gas survey participants and the in-depth interviews with market actors, utility Program Managers and Nexant implementation staff.

### 3.2.1 Meeting Program Goals

The first goal of the SBES evaluation was to quantify gross and net savings impacts for the program. With respect to savings goals, Nicor Gas did not reach their goal of 169,329 net therm savings in the first year, achieving 104,483 net therms, which is 62 percent of goal. ComEd exceeded their energy saving goal of 5,960,000 net kWh goals during the first year by achieving 9,009,031 net kWh, which is 151 percent of goal.

Nicor Gas program planners assumed that first-year participation would be much higher than what was achieved. For instance, the Nicor Gas efficiency plan for GPY1 assumed 169,329 net therms saved from 1,140 projects, about 149 therms per project. The actual number of participants was far lower, 272 participants for GPY1 saving 104,483 net therms or 384 therms per project. Although on average GPY1 projects were larger than planned, planners substantially overestimated the number of projects that would be completed in the first year. Table 3-9 presents the data comparing verified customer counts and net therms versus planned customer counts and therm savings. The goals set by ComEd for electric savings were commensurate with the high level of engagement achieved by lighting trade allies, while the goals for Nicor Gas were too high for the number of active gas measure trade allies and their level of engagement.

**Table 3-9. Comparison of Planned vs. Actual Nicor Gas Net Therm Savings per Customer**

	Customer Projects with Savings	Nicor Net Therm Goal	Net Therms Savings per Customer
GPY1 Planning Estimate	1,140	169,329	148.5
GPY1 Verified	272	104,483	384.1
GPY2 Planning Estimate	2,800	616,753	220.2
GPY3 Planning Estimate	3,750	965,294	257.4

*Source: GPY1 evaluation findings and Nicor Gas Rider 30 energy efficiency plan.*

The higher-than-expected therm savings per participant was driven by five very large projects (3 cooking-related, 2 HVAC-related) that averaged savings of 1,725 therms per project. The remaining projects involving gas measures averaged just 182 therms savings per project, which is close to the planned value.

More troublesome is the question of why participation was so much lower than anticipated for gas measures. In a trade ally-driven program such as SBES relatively long ramping-up periods are to be expected, so it is not surprising, per se, that the program failed to hit participation targets in the first year of the program. However, this begs the question of why uptake was closer to planned values for electric measures. We believe this has to do with the different business models of the respective trade allies involved. As we discuss in greater detail below, the answer likely lies in the fact that HVAC contractors typically operate under a repair-and-replace business model, rather than the direct-sales model more typical of lighting contractors. For this reason, lighting trade allies seemed to be more familiar with the direct-sales model intrinsic to the SBES program.

The utilities and Nexant made small changes to the program during the course of GPY1 in an effort to make it more successful. They increased incentives for some of the gas capital improvement measures slightly in GPY1, with more significant changes planned for GPY2 (expanded list of gas measures and increased incentives). The basic elements of the program, however, remained unchanged during the first year of implementation.

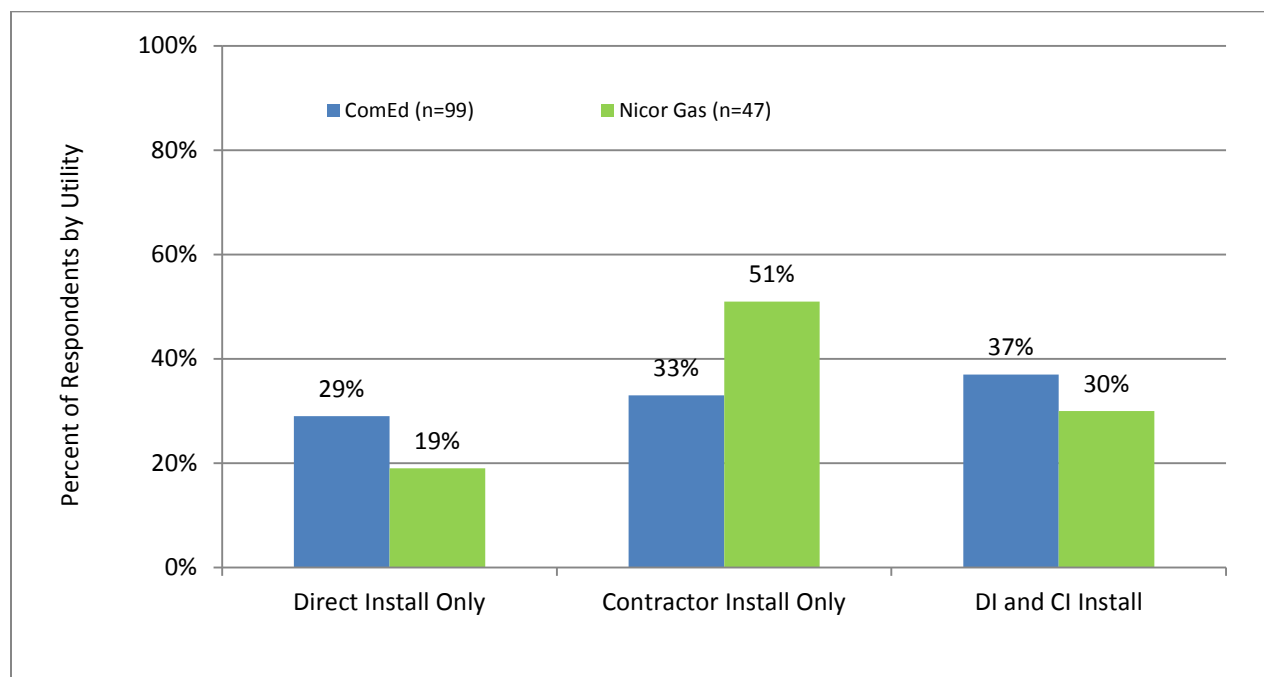
The second evaluation goal was to determine key process-related program strengths and weaknesses. The third program goal was to identify program improvements. The rest of this section presents these results.

### Utility Assignment and Customer Installation Type

ComEd Survey respondents are defined as those who installed an electric measure regardless of gas utility. That is, 99 ComEd customers installed an electric measure and 47 installed gas measures and were from the joint ComEd/Nicor Gas service area.

ComEd and Nicor Gas survey respondents were least likely to participate in only the direct install offer. ComEd program participants chose the three program options in almost equal proportions – 29 percent chose direct install only, 33 percent chose contractor install only and 37 percent chose both direct and contractor installed measures. In contrast, one-half of Nicor Gas survey participants chose contractor installed measures, 30 percent chose both direct installed and contractor installed measures, and only 18 percent limited their participation to the gas direct install measures.

**Figure 3-1. ComEd and Nicor Gas Participant’s Choice of Installation Type**



### 3.2.2 Customer and Trade Ally Satisfaction with the SBES Program

This section focuses on customer and trade ally satisfaction from the perspectives of all the market actors. Navigant found 99 survey participants who agreed to install the measures during the assessment (direct

install) or who agreed to have a trade ally install additional measures after the assessment and were ComEd customers. In addition, 47 survey participants agree to install measures either during the assessment by the energy advisor or after the assessment by a trade ally. None of them were in both groups.

### 3.2.2.1 *Customer Satisfaction and Installation Type*

Customers have four participation options for the SBES Program: audit only with no measure installation; direct-install only (the Nexant energy advisor installed measures at no cost to the customer); contractor-install (CI) only (the Trade Ally installed low-cost measures); or both direct and contractor installed measures. Navigant looked at the relationship between installation type and satisfaction with the SBES program. Survey respondents whose participation was limited to the direct-install program option were less satisfied with the program than those who were able to invest in measures that were installed by a contractor or trade ally. This relationship was particularly strong for Nicor Gas survey respondents, where two-thirds of survey respondents who installed equipment solely through the direct-install option said they were satisfied with the SBES program, compared to 92 percent of CI-only respondents and 100 percent of respondents who installed equipment through both installation options. The differences between direct install and contractor install distributions were found to be statistically significant at the .10 level of significance.

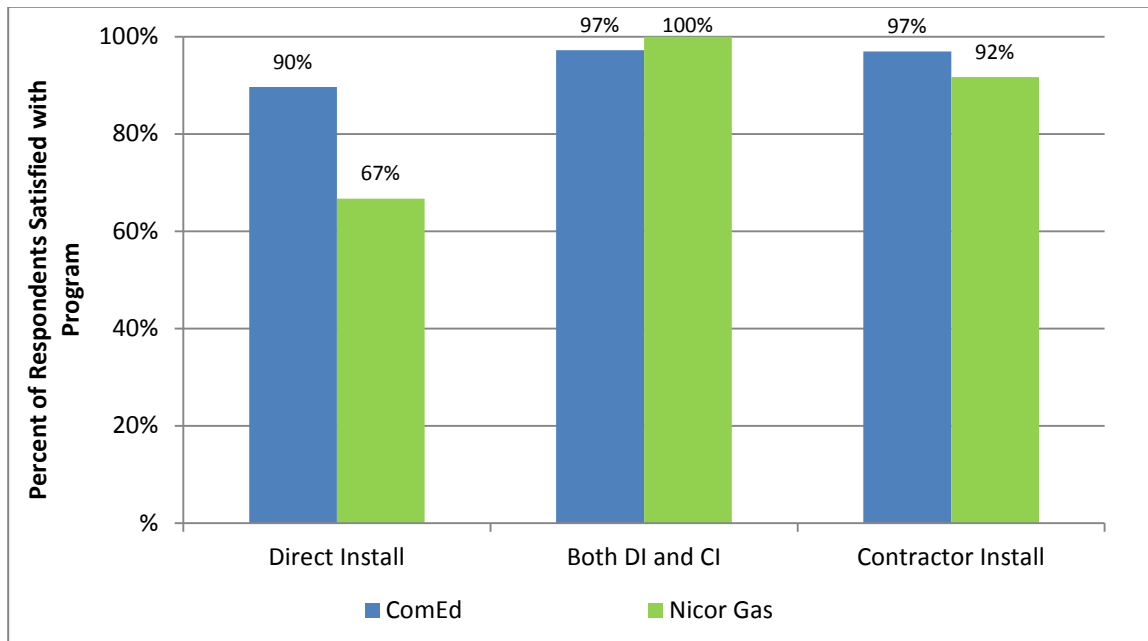
The Navigant team thinks this difference in satisfaction was due to the fact that the direct-installed gas measures were mostly faucet aerators, a small-saving, limited-impact measure. Program participants would be unlikely to see any bill savings from these measures alone. The data showed that few customers were able to use the showerheads and pre-rinse spray valves, measures that could produce detectable savings.

Figure 3-2 shows satisfaction levels with the SBES Program by installation type for ComEd and Nicor Gas survey participants.<sup>34</sup> Satisfaction data was collected using a 0 to 10 point scale and recoded into the three analysis categories: dissatisfied (0-3), neutral (4-6) and satisfied (7-10). Only satisfied survey participants are shown in Figure 3-2.

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<sup>34</sup> Survey participants may have installed electric measures, gas measures, or both in both the direct-install and contractor-install program options. Satisfaction with the SBES program was only asked once.

**Figure 3-2. ComEd and Nicor Gas Participant Satisfaction with SBES Program by Installation Type**



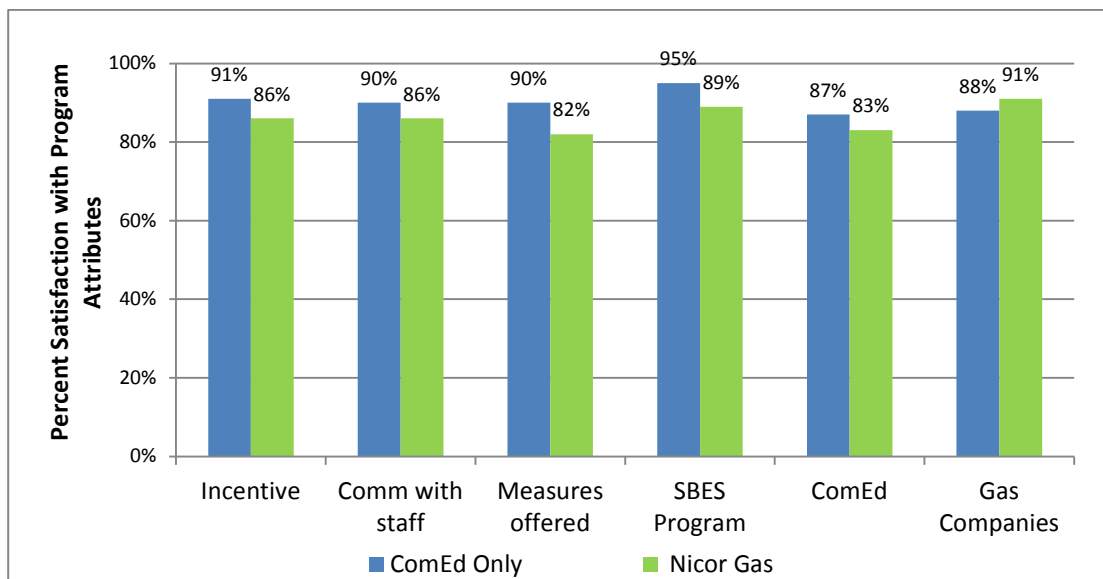
Source: EPY4 ComEd and GPY1 Nicor Gas Small Business Energy Evaluation Survey, 2012

***ComEd and Nicor Gas Customer Satisfaction Level by Program Attributes***

Overall, 95 percent of ComEd survey participants and 89 percent of Nicor Gas survey participants were satisfied with the SBES program.

ComEd survey respondents also expressed high levels of satisfaction with the SBES Program, the program incentive, communication with program staff, and the measures offered. Ninety percent or more of the survey respondents said that they were satisfied with these program attributes (answered 7-10 on the satisfaction scale). ComEd survey respondents were also very satisfied with their gas company (88 percent) and with ComEd (87 percent). In comparison, Nicor Gas survey respondents expressed somewhat lower, but still high, levels of satisfaction for most measures. Figure 3-3 shows the high level of customer satisfaction with program attributes and with ComEd and Nicor Gas.

**Figure 3-3. Satisfaction with SBES Program Attributes by Utility**



Source: EPY4 ComEd and GPY1 Nicor Gas Small Business Energy Evaluation Survey, 2012

**Satisfaction with the SBES Program**

All sources, including trade allies, program managers and implementers and energy advisors, reported that customers and trade allies were satisfied with the program and the program incentives. Only one trade ally expressed some program dissatisfaction.

Trade allies said the ComEd and Nicor Gas SBES Program incentives are very helpful in convincing customers to participate in the program. Some of the SBES incentives offset over 45 percent of the project cost, which is very attractive to customers. One Nexant trade ally said:

“The incentives are outstanding. It is a wonderful program. It was a bold move and sends a big message to the marketplace”.

All but one of the participating trade allies was very satisfied with the SBES program. One said he was satisfied because the program was “a good source of steady income and a good way to expand my client base.” Trade allies also reported that they liked the program because it enabled them to provide an increased level of customer service.

Nexant energy advisors said they believe that trade allies were satisfied with the program overall. They also indicated that small business customers seem very happy with the program, saying they like having a third party visit their site, recommend measures to them, receive an incentive, and talk about energy efficiency measures, as well as the advisors’ ability to create a custom report on-site.

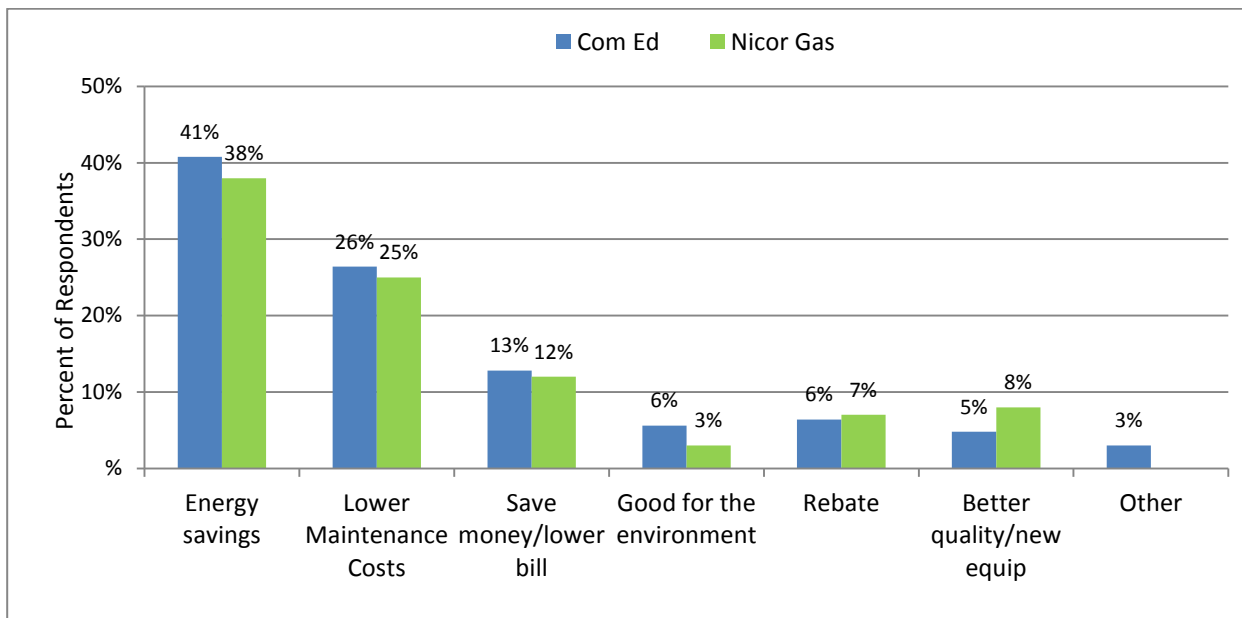
Energy advisors reported that customers would not have replaced any of the measures without the incentives. They believe small business customers generally do not know what types of energy efficient equipment are available and don’t have the resources to research the issue.



### 3.2.2.2 ComEd and Nicor Gas Customers' Rankings of the Program Benefits

ComEd and Nicor Gas survey participants, respectively, listed energy savings (41%, 38%), lower maintenance costs (26%, 25%), and saving money/lowering the bill (13%, 12%) as the major benefits of the SBES Program. Fewer survey participants mentioned the environment, rebates, and better quality equipment as benefits. Figure 3-4 presents the similar distributions of ComEd and Nicor Gas customer on the program benefits.

**Figure 3-4. ComEd and Nicor Gas Customers Program Benefits**



Source: EPY4 ComEd and GPY1 Nicor Gas Small Business Energy Evaluation Survey, 2012

### 3.2.3 Program Awareness

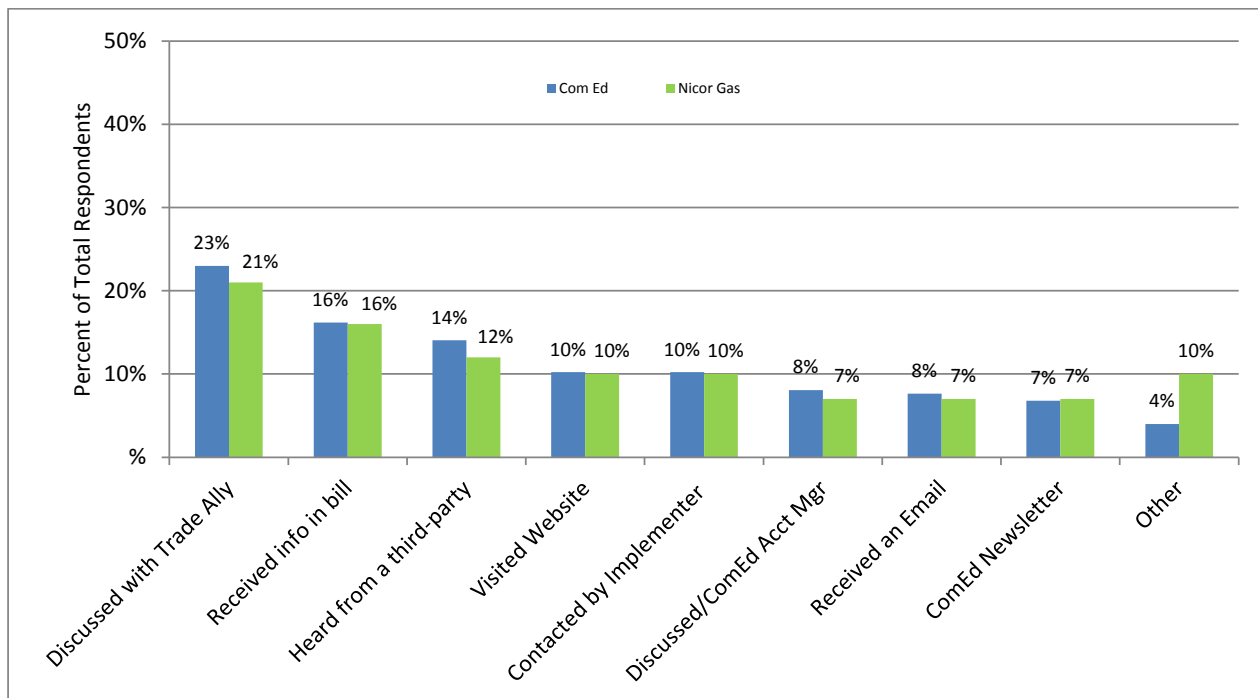
This section focuses on one of the biggest challenges facing the SBES program – how to increase customer awareness and knowledge of the program. During this first year of the gas programs, most contractors had never heard of a utility led program such as the SBES; few customers were expected to be aware of the program, and research findings confirmed this expectation.

With overall trade ally and customer program awareness very low in the first program year, information on how current participants found out about the program and their preferred communications channels for hearing about it is central to generating increased program awareness in GPY2. In the following sections, Navigant explores customers’ information sources and preferred methods of contact, as well as trade allies’ program awareness.

#### 3.2.3.1 ComEd and Nicor Gas Customers on Information Sources

The most common ways ComEd and Nicor Gas survey respondents, respectively, heard about the program were marketing by trade allies (23%, 21%), bill stuffers (16%, 16%), and hearing about it from other parties, such as neighbors, relatives, or friends (14%, 12%). Figure 3-5 shows the distribution of sources of information among ComEd and Nicor Gas survey respondents.

**Figure 3-5. ComEd Participants and Nicor Gas Participants – Source of SBES Program Information**

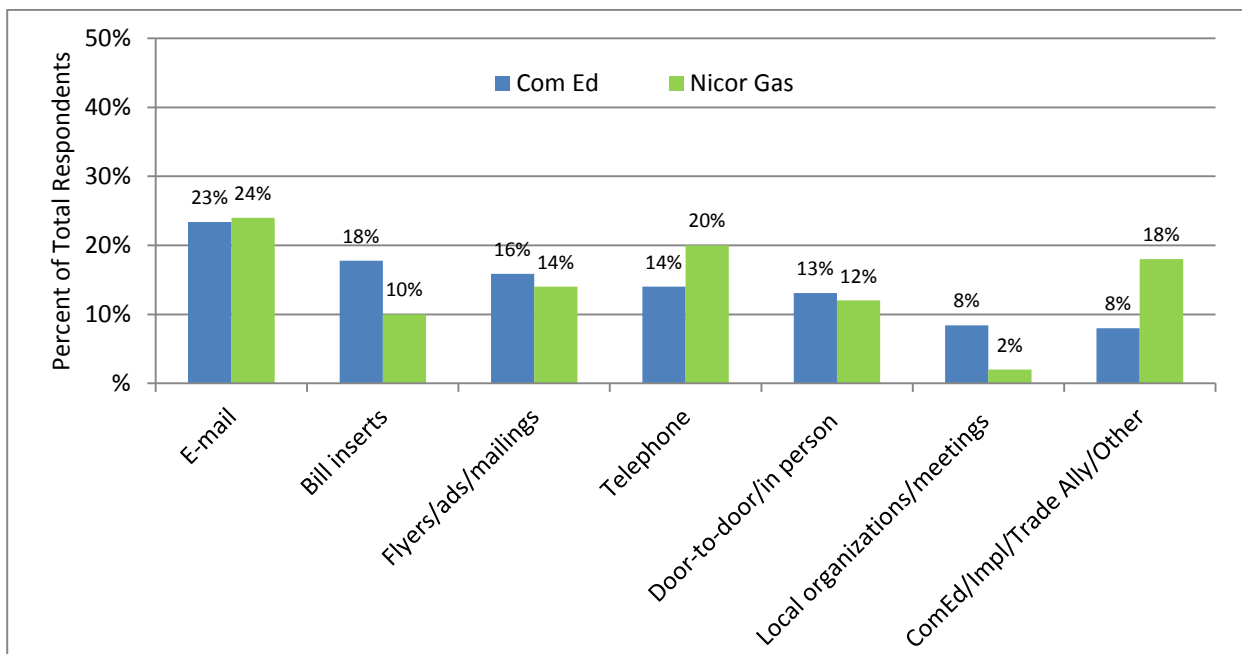


Source: EPY4 ComEd and GPY1 Nicor Gas Small Business Energy Evaluation Survey, 2012; Multiple responses were accepted.

### 3.2.3.2 Customers on Preferred Method of Contact

ComEd and Nicor Gas survey respondents stated that emails were their most-preferred method of contact with program information (23%, 24% respectively). This was the one communication method not mentioned by program staff as a way to contact customers about the program. The three least preferred methods of communication from the customer viewpoint were door-to-door (13%, 12%), organizations/meetings (8%, 2%) and ComEd, implementer or trade ally (8%, 18%). These last three were frequently mentioned as marketing techniques by the utilities, implementers, and trade allies. Figure 3-6 shows the preferred method of contact among ComEd and Nicor Gas survey respondents.

**Figure 3-6. ComEd and Nicor Gas Participants – Preferred Method of Contact**



Source: EPY4 ComEd and GPY1 Nicor Gas Small Business Energy Evaluation Survey, 2012

### 3.2.3.3 Utility and Implementer Perceptions of Marketing Strategy

The implementer relies on ComEd and Nicor Gas to do the overall branding of the program. ComEd has radio ads and billboards that promote the program. Nicor Gas started their umbrella marketing plan in February with radio and online advertising. The utilities are responsible for the big-ticket campaigns. Nexant staff has basic program collateral that they use one-on-one with customers.

Several trade allies thought that the utilities and the implementers should be more aggressive in promoting the SBES program to small businesses via advertising, on the radio as well as in mailers and bill stuffers. Trade allies stated that while they are happy to recommend other ComEd and gas company programs when it is appropriate, most of their small business customers do not have the resources to participate in other utility programs.

### 3.2.4 Program Marketing, Delivery, and Administration

This section focuses on program marketing, delivery, and administration. Nexant delivered the SBES Program to customers, administered and tracked the program paperwork, and jointly marketed the program with the utilities.

#### 3.2.4.1 Marketing

The marketing of the SBES Program was a collaborative effort between the utilities, the implementers, and WECC. The implementation contractors, Nexant and Franklin Energy, worked together on customer outreach events and on outreach to trade allies.

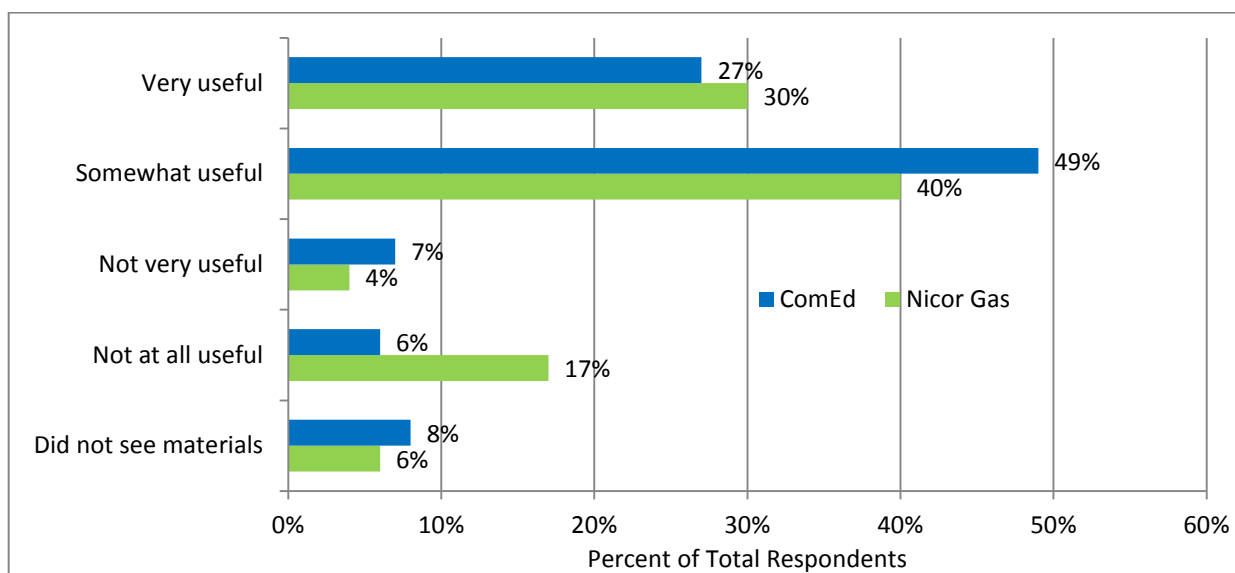
### Marketing Materials

Trade allies and energy advisors used the marketing materials developed by Nexant to help them sell the program to customers. In this section, we review how customers evaluated the SBES program marketing materials and how other market actors viewed the marketing materials.

### Usefulness of Marketing Materials

Over three-fourths of ComEd participant survey respondents and 70 percent of Nicor Gas participant survey respondents found the marketing materials either very useful or somewhat useful. Nearly three times as many Nicor Gas survey respondents as ComEd survey respondents (17% vs. 6%) rated the marketing materials as 'Not at all useful'. A few survey respondents, 6 to 8 percent, reported they did not remember seeing any of the program marketing materials. Figure 3-7 shows how ComEd and Nicor Gas survey respondents evaluate the usefulness of marketing materials.

**Figure 3-7. ComEd and Nicor Gas Participants - Usefulness of Marketing Materials**



Source: EPY4 ComEd and GPY1 Nicor Gas Small Business Energy Evaluation Survey, 2012

### Marketing Impact on Customer Awareness

According to the ComEd Program Manager, education and awareness of the benefits of energy efficiency for target audiences was the key to the marketing strategy. The marketing strategy for the SBES program was a multi-pronged effort – direct mail, trade allies reaching out to customers, and an awareness campaign. ComEd had radio spots and billboards that supported the program.

The implementation contractors, Nexant and Franklin Energy, developed a number of collateral pieces, such as the bi-fold brochure, fact sheets, referral cards, post cards, and text sheets explaining how to use equipment such as the programmable thermostats. Nexant distributed bi-fold brochures and fact sheets to customers during presentations, Chamber of Commerce meetings, festivals, fairs and other events. Cooperative marketing was offered to trade allies. Nicor Gas started their marketing campaign in February 2012 with radio spots and online messaging.

Trade allies used the bi-fold brochure, a collateral piece developed to present the program details, to leave with customers when they knocked on doors. A few used it as a cooperative piece, while others used the

ComEd and Nicor Gas materials with their own collateral material. One posted the materials on their web site. One trade ally wrote an article about the program and was interviewed about the program on the radio. Others were much less involved and did not use the marketing materials to sell the program. All of the trade allies agreed that the implementers provided them with collateral materials and answered their general questions about the program.

Trade allies thought more marketing was the way to raise awareness with customers and other trade allies. They preferred radio advertising and direct mail campaigns.

### ***3.2.4.2 Program Implementation and Delivery***

This section focuses on program implementation delivery topics from the perspective of the customers, energy advisors and trade allies.

#### ***Program Delivery***

Nexant successfully used the first program year to create the necessary implementation structure to deliver the SBES program. Most customers in the sample (70% [ComEd], 80% [Nicor Gas]) were not content with only the direct-install measures and went on to invest in additional energy efficient equipment for their businesses. The handoff between the energy advisor and the trade ally who installed the capital investment measures was sometimes confusing for customers. Energy advisors should clearly communicate the next step in the process to customers. Trade allies installed the capital investment measures in a timely manner.

The verification process was also conducted by the Nexant Energy Advisors on at least 10 percent of the sites. Most customers accepted the verification process and saw it as a positive confirmation of the quality of the installation of the measures.

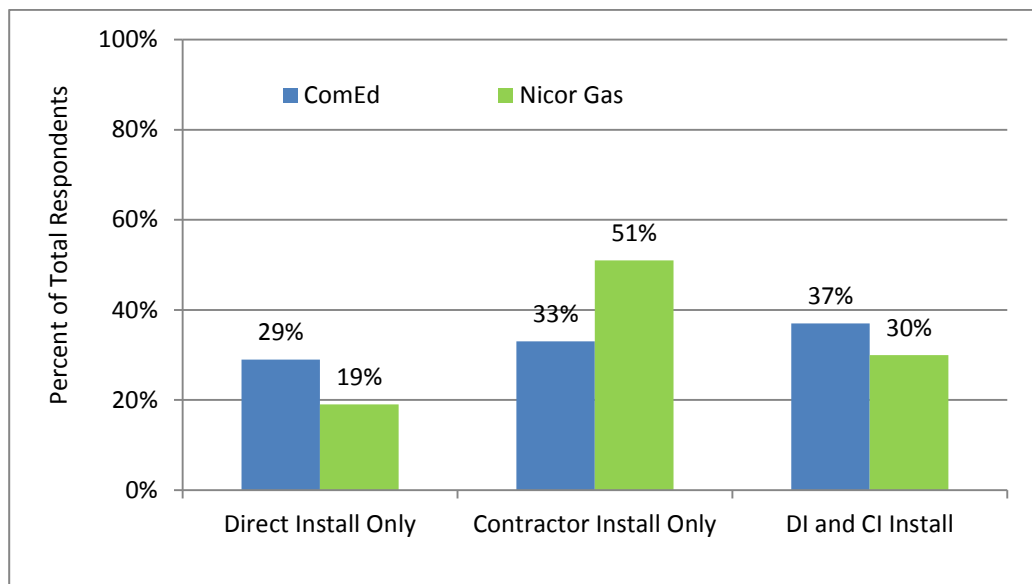
During the second year of the program, Nexant plans to increase delivery efficiency by concentrating trade allies geographically to better distribute Energy Advisor resources and encourage trade allies to partner to deliver both gas and electric measures in a coordinated way.

The Navigant team was concerned about one program delivery procedure. It was not clear that the customer always signed the invoice to indicate that they had approved changes in the scope of the projects. Navigant was also not certain that these changes in scope were recorded in the database.

#### ***Program Implementation***

ComEd customers responding to the survey were equally likely to participate in the direct-install program option (29 percent), the contractor-install option (33 percent), and the direct- and contractor-install option (37 percent). Nicor Gas customers were more likely to participate in the contractor-install option only; over 50 percent of the program participants choose this program option. Gas customers were less likely to participate in the direct-install option or the combination direct-install / contractor-install option. Nineteen percent of Nicor Gas survey respondents chose to receive only the free direct-install option of the program compared to 29 percent of ComEd survey respondents. Figure 3-8 shows the distribution of the type of installation for both ComEd and Nicor Gas survey respondents.

**Figure 3-8. ComEd and Nicor Gas Survey Respondents – Type of Installation**



Source: EPY4 ComEd and GPYI Nicor Gas Small Business Energy Evaluation Survey, 2012

Customers were asked to evaluate the contractor that installed their equipment if they had more than one contractor. Of those who appeared in the database to have had more than one contractor install their equipment (15), only one-third agreed that they had more than one contractor. Most of the survey participants in this segment (87 percent) indicated that the lighting contractor did most of the work. As expected, the few non-lighting contractors were most likely to be HVAC contractors. Overall satisfaction was higher for lighting contractors than for non-lighting contractors and customers of lighting contractors were more likely to say they would recommend the contractor. Given the small numbers of survey participants in these groups, however, caution should be exercised in making decisions based on these data.

Nexant was the implementer for 59 percent of the ComEd survey respondents. This closely matched the population, where Nexant contributed 57 percent of the population of electric projects (391 out of 690 projects for ComEd).

The energy advisors tried to install a no-cost measure at every participating site and most of the time they were successful. Fifty to 60 percent of sampled customers receiving an assessment recalled agreeing to install low-cost measures. According to the Nexant energy advisors, the average time for installation of the contractor installed equipment after the assessment ranged from a few days to twenty days. Trade allies and customers agreed that most projects were completed within two weeks. However, the speed of project completion depended on the trade ally, the customer, the facility type, and whether equipment needed to be ordered.

The energy advisors conducted two to four assessments per day. They provided customers with information about the SBES Program and other utility programs, reviewed the findings from the assessment with the customer, and presented the program-approved incentives. They also installed the direct-install measures, such as CFLs, low-flow water devices, and vending and display case controls.

Trade allies delivered the contractor-installed measures that the customers approved during the assessment visit. Some customers were confused about the handoff from the implementer to the trade ally after the assessment was conducted.

The trade allies completed forms for customers and had them sign to approve the work. The trade allies thought that program participation was very easy for customers. As one trade ally put it: “The program was painless from their (the customers’) end.”

Trade allies attended a training seminar on the details of the program, how to qualify customers, the role of the energy assessment, how to complete the application, and the terms of the marketing support. Most trade allies believed that they did not need more training on the SBES Program, but thought that other trade allies might. Some trade allies indicated they would like more measure-specific training – HVAC contractors wanted more information on lighting and lighting contractors wanted more information on the HVAC measures. They were not, however, in favor of training for its’ own sake and a few were not in favor of any more training.

Implementers provided trade allies with a list of qualifying sites by ZIP code. However, one trade ally complained that they had received a list consisting of empty warehouses and derelict buildings. Another trade ally expressed certainty that all the trade allies were getting the same list and were competing for the same customers.

Nexant energy advisors inspected the first three projects of newly-approved trade allies during and after installation. After that, about 10 percent of all projects were inspected to confirm that the measures were installed per the installation agreement.

Trade allies generally did not have an issue with the post inspections performed by Nexant. Customers did not find them to be a burden because the inspection was viewed as insurance that the job was performed correctly. One trade ally pointed out that the SBES program was not just about getting “free money”. He thought that trade allies should explain at the beginning of the process that customers may receive an inspection because it was necessary for ComEd and Nicor Gas to confirm the job was done properly.

### 3.2.5 Program Improvements

This section focuses on how the various market actors would like to improve the program. A plurality of customers had no ideas for improving the program, and a majority of customers could not name any drawbacks to the program. The suggestions from customers were typical of energy efficiency program participants: higher incentives, better communication and more publicity.

Overall, the most difficult aspect of the program was how to inform low-information customer, who tended to be naïve about energy issues, energy efficient programs, and the surcharge. Some customers were incredulous that ComEd and Nicor Gas were sponsoring a program for small business customers, something they had not done in the past.

### 3.2.5.1 Suggestions for Program Improvements

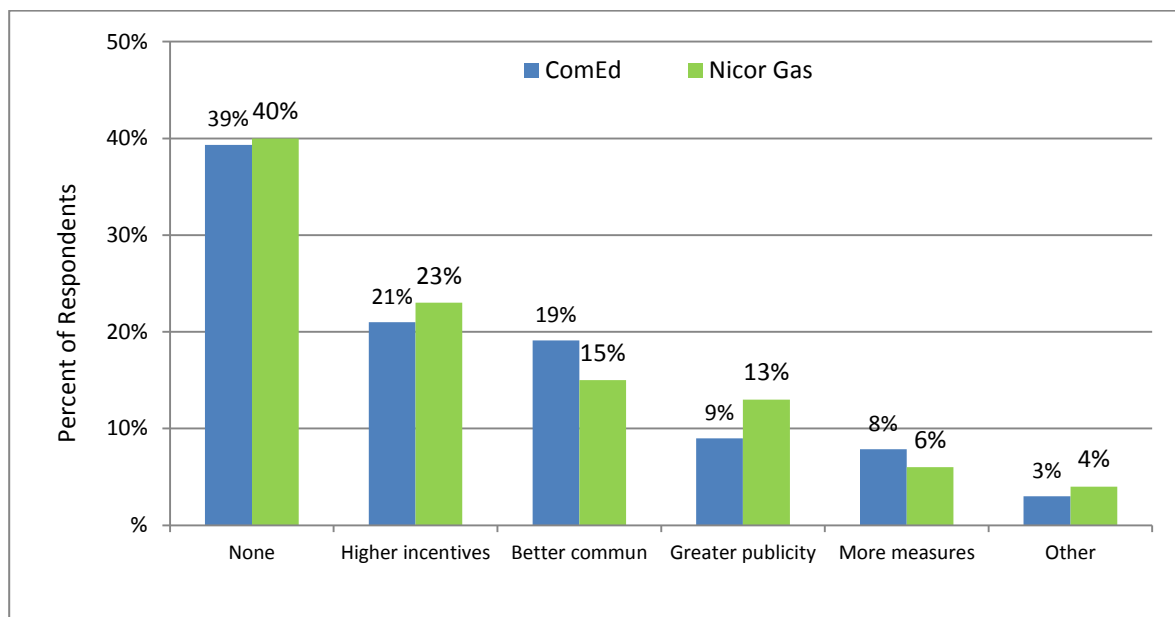
#### Customer Suggestions

ComEd and Nicor Gas survey respondents gave similar answers to how the program can be improved. Almost 40 percent of survey respondents from both utilities had no ideas for improving the program. The top two improvements mentioned were:

1. Higher incentives/lower costs (21%, 23%)
2. Better communication/improved information (19%, 15%)

Figure 3-9 shows the distribution of improvements suggested by the survey respondents who answered the question.

**Figure 3-9. SBES Program Improvements Mentioned by ComEd and Nicor Gas Customers**



Source: EPY4 ComEd and GPY1 Nicor Gas Small Business Energy Evaluation Survey, 2012; Multiple responses were accepted.

#### Trade Ally Suggestions

Trade allies were attracted to the SBES Program because they saw an opportunity to increase their business in the difficult-to-serve small business market. Many of them were experienced with the ComEd Standard and Custom Programs for larger customers. The SBES Program was attractive because the rebates were higher than other programs and provided an entry into the small business market.

Trade allies provided a number of ideas for improving the SBES program:

- The assessment could be improved. It could be used to better highlight the benefits of the program.
- Energy advisors need to be more knowledgeable about lighting and what can be retrofitted.



- Outreach presentations to customers are too technical. Some trade allies create their own report that they present instead. Nexant/Franklin Energy should focus on the definition of a small business without getting lost in the details.
- Contractors need to be more aggressive in selling the program.
- Trade allies need to be on-site with the energy advisor to gather data on what equipment will be needed to complete the job and to double-check the counts.
- Trade allies would like higher gas rebates, in particular for furnace and boiler replacements.
- Trade allies need to be more educated on the technologies.
- The limit of ten locations excludes some mall owners even though they might qualify based on usage.
- Many franchises are run like Mom-and-Pop businesses. Equipment decisions are made by the franchisee owner. It seems arbitrary to exclude them from the program.
- Some service customers (example: auto transmission shops) are considered retail. Their lighting run hours are too high, which understates the length of the payback. Then the customer does not meet their savings estimates. Trade allies suggest using actual run hours. The same issue was raised with storage rooms, where the hours of usage are too small to qualify for a rebate.
- New energy advisors should partner with more experienced energy advisors for an apprenticeship period to ensure that all the energy saving technologies are identified for every customer.
- Some customers have de-lamped their four bulb fixtures by removing two bulbs. Recently, ComEd reduced the incentive to account for the fact that a two bulb fixture is replacing a similar two-bulb fixture. However, trade allies are not compensated for the removal of the second ballast in the old four bulb fixture. Current law mandates the removal and recycling of these ballasts and the trade ally incurs a cost for disposal. Changes like this should be discussed with the trade allies before the contract is signed.

### 3.2.6 Program Barriers

This section discusses certain barriers to program implementation that were encountered in GPY1.

#### 3.2.6.1 Geographic Barriers

Nexant plans to introduce a neighborhood initiative in the next program year. The purpose of the neighborhood initiative will be to increase the productivity of the energy advisors and to spur customer neighborhood referrals. Trade allies will be asked to sell the program door-to-door in one neighborhood in order to concentrate the work of the energy advisors geographically and reduce unproductive travel time.

Some trade allies participated in the SBES program throughout the ComEd service territory regardless of gas utility. For the most part, Nexant trade allies did not see any differences in barriers between the projects that were implemented by Nexant and the projects that were implemented by Franklin Energy. However, for

some trade allies the North Shore/Peoples Gas projects were more difficult because of permitting requirements in the City of Chicago. However, one trade ally with experience marketing in Chicago struggled in the suburbs. One trade ally liked the Nexant assessment report better than the Franklin Energy report because it was more detailed.

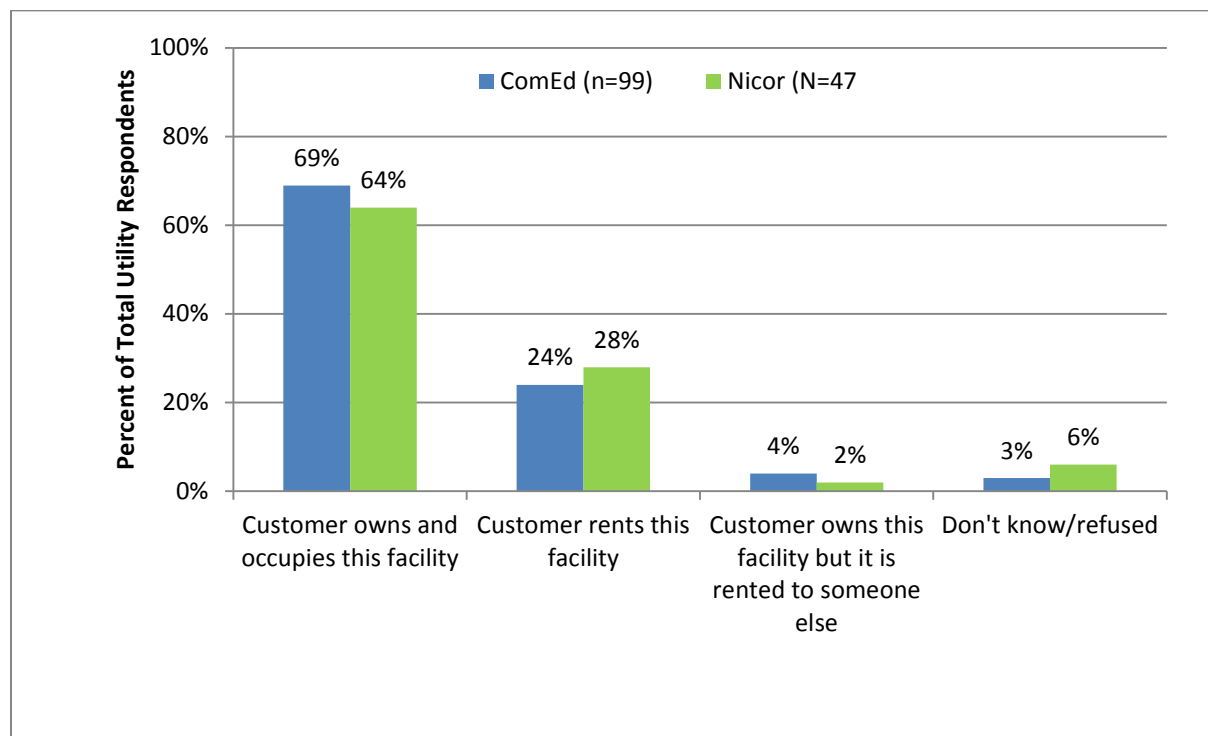
### 3.2.6.2 Other Barriers

Overall, HVAC contractors are less engaged in the SBES program than lighting contractors; they have recruited fewer customers and made less progress toward the savings goals. HVAC contractors operate under a repair-and-replace business model that does not fit naturally into the sales model of the SBES Program. Lighting trade allies are more familiar with the direct-sales model. The implementation contractors encouraged HVAC contractors and lighting contractors to form partnerships to offer customers both electric and gas measures. Those who were not partnered with another contractor relied on the implementer to assign the lighting or non-lighting project measures to a qualified program trade ally.

Nexant is making some progress in encouraging trade allies to work with landlords to share the cost of the energy-efficient equipment in rental situations. They can be particularly difficult where the landlord owns the equipment and the renter gets the benefit of the savings from the energy efficient equipment. Nicor Gas also plans to use more social media methods in their advertising mix next year.

Another barrier was the ownership of the facility and the lighting and HVAC equipment. ComEd customers are slightly more likely to own their facility than Nicor Gas customers. Figure 3-10 shows the distribution of building ownership.

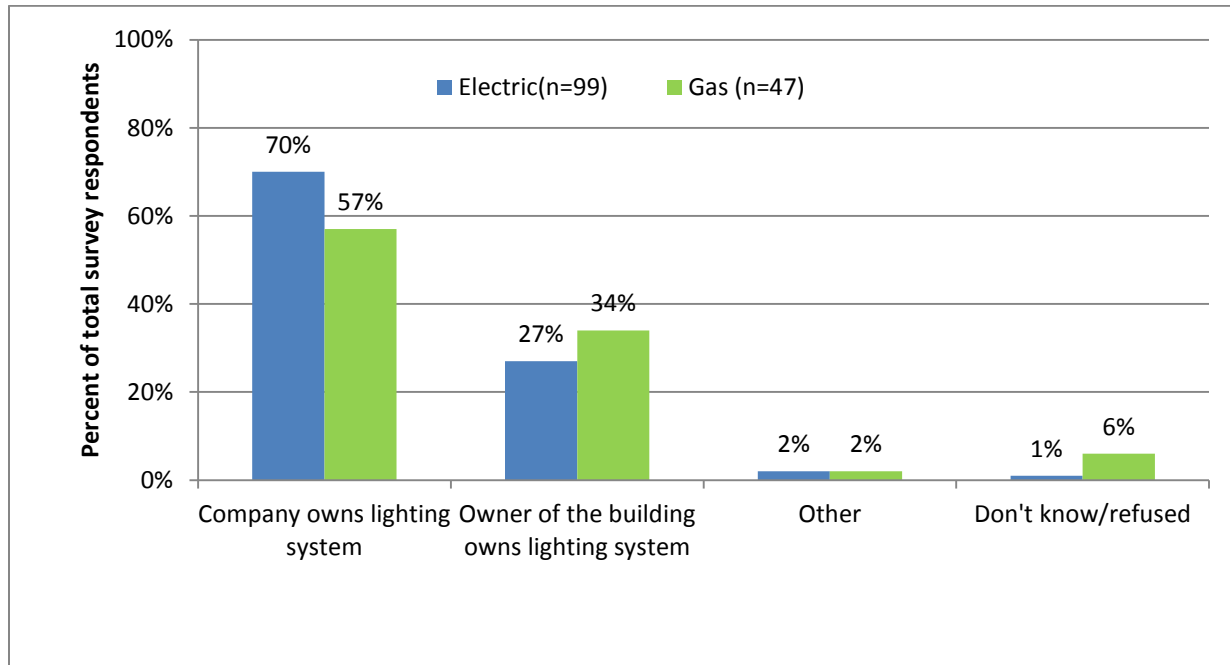
**Figure 3-10. Ownership of Facility by ComEd and Nicor Gas Customers**



Source: EPY4 ComEd and GPY1 Nicor Gas Small Business Energy Evaluation Survey, 2012

70 percent of electric survey respondents own their lighting system compared to 57 percent of gas survey respondents. Figure 3-11 presents the distribution of lighting equipment ownership levels.

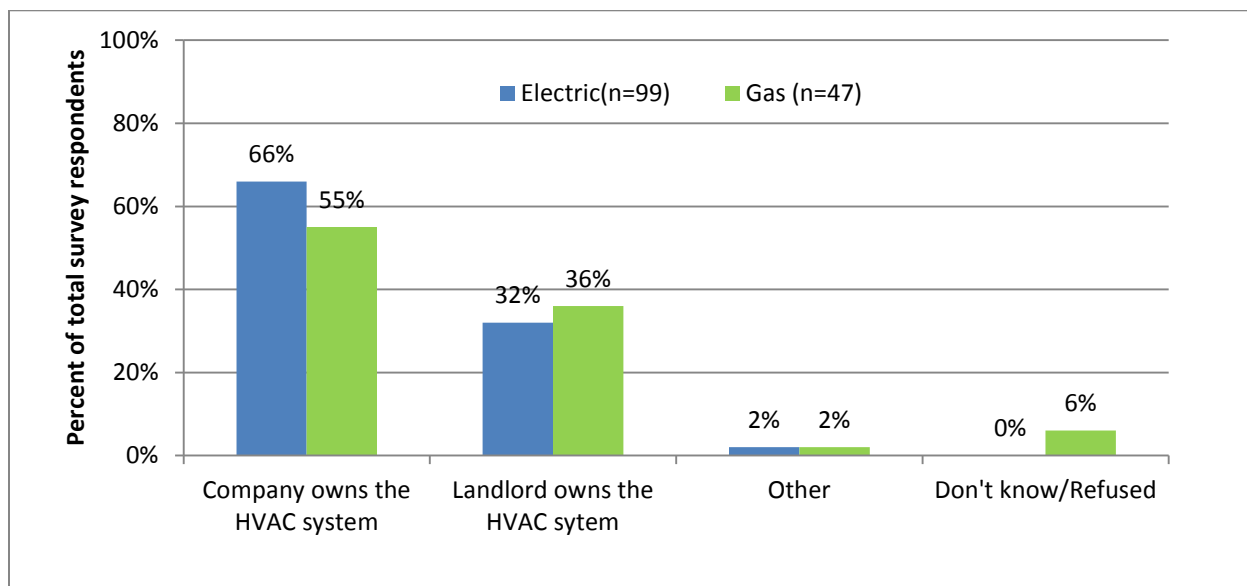
**Figure 3-11. Ownership of Lighting Equipment by ComEd and Nicor Gas Customers**



Source: EPY4 ComEd and GPY1 Nicor Gas Small Business Energy Evaluation Survey, 2012

Ownership rates are similar for the HVAC system. Two-thirds of electric customers own the HVAC system compared to 55% of gas customers. Figure 3-12 shows the distribution of ownership of HVAC equipment.

**Figure 3-12. Ownership of HVAC Equipment by ComEd and Nicor Gas Customers**



Source: EPY4 ComEd and GPY1 Nicor Gas Small Business Energy Evaluation Survey, 2012

### 3.2.6.3 Perceptions of Program as Barriers

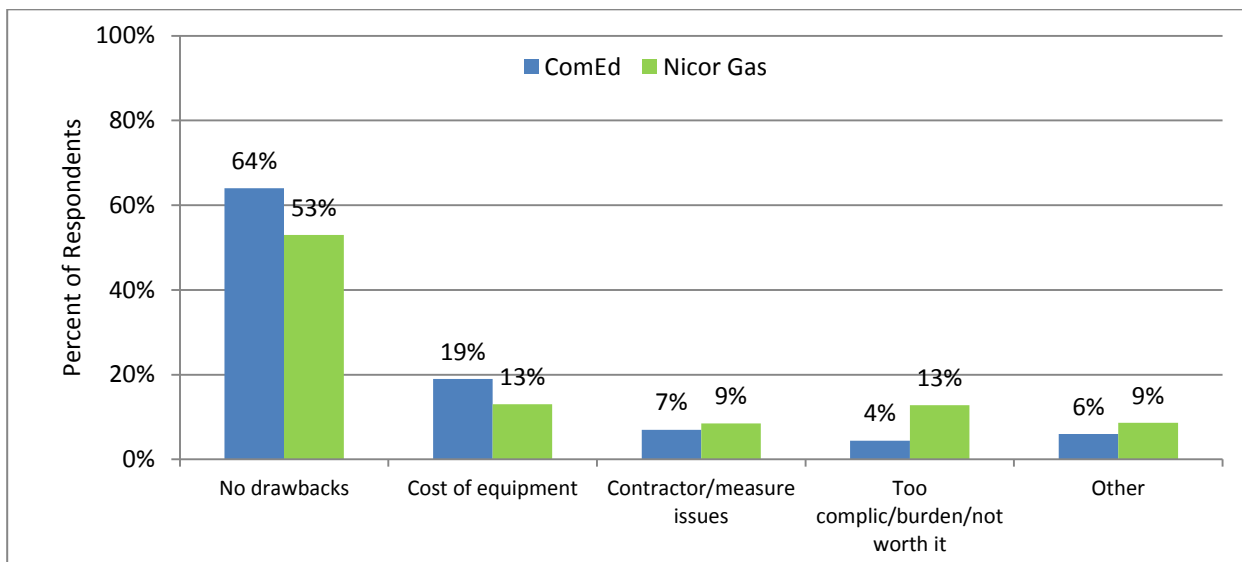
Customers’ perceptions of program drawbacks were predictable for a first year program: equipment cost, a few issues with the equipment or the contractor, and the complicated nature of the program. Program changes slated to be made in GPY2 should reduce the cost of the equipment; this program change and others made in GPY2 will be evaluated during the next evaluation cycle.

A major barrier to the energy assessment, according to Nexant energy advisors, was that the implementers and the contractors were frequently misidentified as power salesmen. Since the state of Illinois is deregulated, power salesmen have targeted small businesses in an effort to sell their distribution services. ComEd and Nicor Gas should consider ways of identifying approved trade allies that assure small business customers that they are legitimate, while still protecting the utility brands.

Almost two-thirds of the ComEd survey participants could not find any drawbacks to the program (64 percent), compared to 53 percent of Nicor Gas survey participants. About one in five ComEd survey participants (19 percent) and about one in eight Nicor Gas survey respondents (13 percent) indicated that cost was a problem even with the program incentives. Similar small proportions of ComEd and Nicor Gas customers had issues with the equipment that was installed or with the contractor (7%, 9%). Nicor Gas customers were more likely than ComEd customers to say the program was too complicated or burdensome, or that the effort was not worth the benefit (4%, 13%).

Figure 3-13 shows these differences in perceived drawbacks between ComEd and Nicor Gas survey participants.

**Figure 3-13. Drawbacks to the SBES Program, ComEd/Nicor Gas Participants**



Source: EPY4 ComEd and GPY1 Nicor Gas Small Business Energy Evaluation Survey, 2012

Energy advisors saw a completely different set of challenges for the SBES program. There was agreement that the biggest challenge facing the SBES Program implementation staff is how to increase customer awareness and knowledge. ComEd and Nicor Gas will need to continue advertising this program aggressively through multiple channels over the next few years to build up knowledge levels about the program with the difficult-to-reach—and skeptical—small business segment.

Lack of investment capital was also mentioned as a barrier to program participation. Gas measures were more difficult to sell because of the lower rebates; this problem has since been partially resolved by changes to the program.

#### **3.2.6.4 *The Economy as a Barrier***

Nexant's trade allies said that the economy has definitely made the SBES program harder to sell and reduced interest in the program. Some trade allies believed the economy was slowly improving during the program year, but not all agreed. Trade allies explained that many customers did not have the cash to spend and some that did have cash on hand were unwilling to spend it on energy-efficiency measures. One trade ally said: "We still have to sell the projects on something other than monetary savings." Some customers would not accept a favorable return on investment of nine to eighteen months because of lack of cash flow.

The Program Manager agreed that the poor economy was a major barrier for small business owners. The two year or less payback made the program attractive and customers see the immediate benefits of saving energy, if they have the money to invest. However, some are just not ready to spend money under these economic conditions.

Nexant staff concurred that the economy is having an impact on the program. One implementer said that "some customers could not do anything without the program. Others are depending on the trade ally to offer payment plans."

## 4. Findings and Recommendations

### 4.1 Key Impact Findings and Recommendations

The primary impact findings and recommendations are as follows:

**Finding:** For electric measures claimed by ComEd, the telephone survey responses from 89 of 90 participants confirmed measure installations. On one project, the respondent reported that only 12 of 18 claimed direct installed CFLs were installed. Invoices supplied for file reviews confirmed claimed measure counts, but two of the on-site verification visits found some differences between claimed quantities and observed lighting fixture types and quantities. Adjustments to these three individual projects resulted in realization rates higher and lower than 1.0, but in aggregate the resulting savings for sampled projects was very close to 1.0. Rounded to two digits, the final evaluation research findings gross realization rate was equal to 1.03. There were no adjustments to claimed quantities or measure types for gas measures claimed by Nicor Gas based on the CATI survey, the file reviews, or the on-site visits.

- **Recommendation:** Implementers should reinforce with trade allies the importance of accurate invoicing that reflects final customer decisions regarding installed measures. On those lighting projects where differences were found between verified and claimed savings, it appeared customers and trade allies had altered the scope on one or two measures after the initial assessment but did not update the invoice. The changes we observed led us to believe these were reasonable modifications to accommodate facilities with a mix of spaces and fixtures, and did not result in significant deviations from claimed project savings or cost. The basic issue is ensuring that the type and quantity of energy efficient equipment installed was correctly invoiced and the database updated.

**Finding:** On five of 90 telephone interviews, participants had indicated they had added some lighting, roughly 1 to 2 percent of their installed quantities, to the same spaces after completing the project to increase light levels. This resulted in minor adjustments to reduce savings for those projects.

- **Recommendation:** While some level of post-installation adjustment to quantities is to be expected, implementers should monitor participant satisfaction regarding lighting levels.

**Finding:** Evaluation research findings for customer participant self-reported free-ridership were 17 percent for ComEd and 20 percent for Nicor Gas, very close to the ex-ante value of 20 percent assumed in program planning for both utilities. Individual trade ally responses to free-ridership questions were weighted by their respective fuel-specific program savings contributions and combined for a fuel-specific overall free-ridership rate. This approach resulted in an evaluation estimate of 2 percent free-ridership for gas measures, and 5 percent free-ridership for electric measures.

**Finding:** The per-unit savings values provided by ComEd and Nicor Gas were reasonable first year ex-ante savings estimates, given that participant equipment sizes and operating hours were assumed. Based on better information, we made minor adjustments to the per-unit savings for five electric measures. We adjusted the three water saving electric measures (e.g., aerators, showerheads, and pre-rinse sprayers) to

apply usage assumptions and algorithms from the Illinois TRM to match the gas measure savings.<sup>35</sup> We also adjusted the savings for the 2 (and 4) lamp 8 foot T12 conversion to a 2 (and 4) lamp four foot high performance T8 fixture, due to an error (the delamping savings were in the original default savings, but the T12 to T8 conversion savings were missing).

There are three areas of higher uncertainty that require attention in the second program year: lighting hours of use, heating equipment capacities, and programmable thermostat per-unit savings. Where lighting measures were installed, survey participants were asked a detailed set of questions to determine lighting schedules and percent of lights that are on during open and closed times. The average annual equivalent full-load hours for 26 ComEd respondents were 2,954 annual hours. This compares with default values in the Illinois TRM of 4,576 annual hours for fixture-based lighting and 3,198 annual hours for screw-based lighting for the “Miscellaneous” building type. In particular, places of worship reported lower-than-average full load operating hours. This finding is of some concern: if the initial lighting assessment over-estimates the expected savings of measures, the actual payback will lengthen and alter cash-flow.

Nicor Gas based their boiler measure savings on fixed, assumed equipment sizes in the first year, whereas the Illinois TRM<sup>36</sup> estimates savings using heating equipment gas input size as a measure-level custom input to the algorithms. We did not observe project-specific heating equipment sizes in the tracking system or listed in the project documentation we sampled. Programmable thermostats are a high volume measure in the SBES program not covered by the Illinois TRM, and should be reviewed for addition.

- **Recommendations** for potential updates and revisions to the Illinois TRM are provided in Appendix 5.4.
- **Recommendation:** The Illinois TRM should consider adding one or more new building types for selective use by the Small Business program, such as a “low hours-of-use miscellaneous” building type that may be used for participants with lower lighting operating hours.
- **Recommendation:** Site assessment reports for places of worship and other low-use facilities should check projected savings against usage history to ensure savings estimates provided to customers are reasonable.
- **Recommendation:** The program should collect boiler and furnace heating system capacities to enable the program to claim actual rather than default savings.<sup>37</sup>
- **Recommendation:** Confirm that the tracked savings in EPY5 match the Illinois TRM for water saving measures, and check that the delamping measures include the T12 to T8 conversion savings.

We observed in the database that some instances of identical measures and building types used different per-unit savings (e.g., claimed savings matched different building types). We did not adjust for this finding, because it appeared that the claimed savings were reasonable selections for the businesses, even if the recorded building type was not consistent with the deemed savings. We suspect this is due to the ambiguity in assigning building types for some small businesses, and projects that may encompass a portion of the space in a business that may be different than the business as a whole. Possibly the business type is not updated to reflect the final project.

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<sup>35</sup> See discussion in sections 3.1.3 and 3.1.7.

<sup>36</sup> State of Illinois Energy Efficiency Technical Reference Manual, Final version, September 14, 2012, effective June 1, 2012

<sup>37</sup> The implementation contractor indicated in draft comments that they are collecting heating system capacities in GPY2.

- **Recommendation:** Review database tracking and updating procedures to improve consistency between ex ante per-unit savings and recorded building type.

#### 4.2 *Key Process Findings and Recommendations*

The key process finding and recommendations are as follows:

**Finding:** With respect to savings goals, Nicor Gas did not reach their goal of 169,329 net therm savings in the first year, achieving 104,483 net therms, which is 62 percent of goal. ComEd exceeded their energy saving goal of 5,960,000 net kWh goals during the first year by achieving 9,009,031 net kWh, which is 151 percent of goal.

Nicor Gas program planners assumed that first participation would be much higher than achieved. For instance, the Nicor Gas efficiency plan for GPY1 assumed 169,329 net therms saved from 1,140 projects, about 149 therms per project. The actual number of participants was far lower, 272 participants for GPY1 saving 104,483 net therms or 384 therms per project. Although GPY1 projects were larger than planned, planners overestimated the number of projects that would be completed in the first year. The goals set by ComEd for electric savings were commensurate with the high level of engagement by lighting trade allies, while the goals for Nicor Gas were too high for the number of active gas measure trade allies and their level of engagement.

**Findings:** HVAC trade allies are under-represented in the program. The evidence shows that they are not as actively engaged in the program. Lighting trade allies are participating at twice the rate of HVAC trade allies. Some trade allies have longstanding, close relationships with electrical or mechanical trade allies who help them provide a turn-key service for delivery of the program to customers.

- **Recommendation:** Nexant should recruit more HVAC contractors and encourage them to market the program aggressively and to work closely with lighting contractors.

**Findings:** HVAC contractors are less attracted to the SBES Program because their business model is focused on repair and maintenance rather than the sales model used by lighting companies. In that sense, lighting companies are a better match to the SBES Program than HVAC contractors or mechanical engineering companies. Some lighting companies have partnered with a mechanical engineering company and vice versa, but other trade allies are content to let the implementer bring in the electric or gas partner on a project basis.

**Findings:** Two trade allies, one lighting company and one mechanical engineering (ME) firm, purchased a company to be in a position to deliver the full set of program measures. Other firms hired more staff and one opened an additional office in the Chicago area.

- **Recommendation:** Nexant is planning to recruit more HVAC contractors or mechanical engineering firms for GPY2 as lighting-only firms have participated at twice the rate of HVAC only firms. Navigant would advise Nexant to concentrate on HVAC firms that are willing to enter partnership relationships with lighting companies and that are in less-covered geographic areas. ComEd and Nicor Gas should be aware that the program has already changed the structure of the market with trade allies forming partnerships, purchasing other companies and adding more staff to sell the program and install the equipment.



**Finding:** Nexant staff and utility staff judged the success of the marketing of the SBES Program more favorably than trade allies. Trade allies thought more marketing was the way to raise awareness with customers. Radio was the most preferred channel among trade allies, along with direct mail. However, customers were most likely to prefer email marketing.

- **Recommendation:** ComEd and Nicor Gas need to continue general advertising of the Small Business Energy Savings Program to increase customer awareness and receptivity and promote the program. ComEd and Nicor Gas should consider a Small Business email newsletter that would inform customers about the program and energy efficiency equipment. Interested customers would be invited to sign-up online and would provide their email addresses. It could be pitched as a source of useful information, possibly coupons or other incentives.

**Finding:** During the Due Diligence review, Navigant understood that customers currently do not sign any documents if they change the scope of the project when the trade ally arrives at the customers' facility. Alternatively, the customer signs but the customer approval and the new scope of the approved project was not entered into the tracking system. In this situation, the invoice from the trade ally was used as the final determination of the number and type of measures installed. This practice is potentially open to manipulation by the trade ally.

- **Recommendation:** Customers should be required to sign a change order tracking form if they change the scope of the project substantially to ensure that the measure quantities and this data should be recorded in the tracking system for evaluation purposes.

**Finding:** Over three-fourths of ComEd participant survey respondents and 70 percent of Nicor Gas participant survey respondents found the marketing materials either very useful or somewhat useful. Gas company participants were more likely than electric company participants to say the marketing materials were not useful.

- **Recommendation:** ComEd and Nicor Gas may need to revise the marketing materials to include more gas measure information or develop a gas measure collateral piece during GPY2 to meet the needs of gas customers.

**Finding:** Customers preferred to be contacted via emails or by letter. Customers were most frequently contacted by a trade ally or received information in the bill.

- **Recommendation:** ComEd and Nicor Gas should look at the potential for more email marketing to small business customers. One entryway to a working email list would be an email newsletter for small businesses.

**Finding:** Trade allies would like some way to differentiate themselves from other trade allies and from power salespeople at the customers' door. The utilities are not willing to provide trade allies with an identification card, although they have offered trade allies the opportunity for cooperative advertising.

- **Recommendation:** ComEd and Nicor Gas could develop a SBES trade ally brand. This would be an extension of the trade allies list on the Web page. Trade allies would be allowed to place a decal or some other form of identification short of an identification card on their vehicles or person after their company reached a minimum participation level. The decal

would declare them an ‘official approved’ ComEd/Nicor Gas Small Business Energy Services Program trade ally’ or have an easily recognizable name linked to the program.

**Finding:** Trade allies that want to operate in the Nicor Gas and the Peoples Gas and North Shore Gas service territories are required to be trained once for each program. Trade allies thought that this level of training was not necessary every year unless the program delivery changed.

- **Recommendation:** Future trainings could be abbreviated as all the trade allies are experienced and have been thoroughly trained. Nexant and Franklin Energy should consider developing one training curriculum that includes information on both programs. While there are some important differences between the programs, the basic program steps are the same. Any new trade allies would require a more detailed training rather than the program update current participants would receive.

**Findings:** Many small business customers are too busy to pay attention to developments in the energy field and are, therefore, uninformed about the statewide energy efficiency surcharge or the requirement that gas and electric companies develop energy efficiency programs. They may be skeptical of the sudden attention and fear that it is “too good to be true.”

- **Recommendation:** The most common refrain from trade allies was the need for more widespread marketing of the SBES program. The first year of any program ramps up gradually. The SBES Program has extra hurdles as a result of its target market: the hard-to-reach small business customer. The existence of the program will become better-known over time, a process that can be helped along by a program of focused marketing.

**Finding:** The database does not always include customer information in the contact fields of the database. For these projects, customers with trade allies for the contact fields were excluded from the list of valid projects.

- **Recommendation:** Nexant should require the trade allies complete the application with the customer’s contact information not his or her own information to increase the accuracy of the sample.

**Finding:** The SBES Program has been very popular with churches and non-profit organizations in the Nicor Gas service area. Churches have an obvious need to save money through energy efficiency. However, the program assumed hours of use overstates churches’ reported hours of use. Therefore, churches lower the overall realization rate and are disappointed in the program when the promised bill savings does not occur.

- **Recommendation:** Develop a marketing plan aimed at attracting a more diverse customer base, especially those who may have more interest in gas measures.

**Finding:** The SBES Program may need more time than other programs to ‘ramp up’ to full speed. Small business customers are not educated about the savings potential of energy efficient equipment and are somewhat skeptical that the utilities are offering a program such as this. They tend to be unaware of the surcharge and of the other programs offered by the utilities.

- **Recommendation:** Nicor Gas should be cautious about terminating this program too quickly. Small business customers are ‘low information’ customers and it will take time and resources for their



knowledge base to catch up with larger customers. In addition, some of the trade allies have made significant investments to participate in this program; the utilities should respect their efforts to embrace the program.

## 5. Appendix

### 5.1 Glossary

#### High Level Concepts

##### Program Year

- EPY1, EPY2, etc. Electric Program Year where EPY1 is June 1, 2008 to May 31, 2009, EPY2 is June 1, 2009 to May 31, 2010, etc.
- GPY1, GPY2, etc. Gas Program Year where GPY1 is June 1, 2011 to May 31, 2012, GPY2 is June 1, 2012 to May 31, 2013.

There are two main tracks for reporting impact evaluation results, called Verified Savings and Impact Evaluation Research Findings.

##### Verified Savings composed of

- Verified Gross Energy Savings
- Verified Gross Demand Savings
- Verified Net Energy Savings
- Verified Net Demand Savings

These are savings using deemed savings parameters when available and after evaluation adjustments to those parameters that are subject to retrospective adjustment for the purposes of measuring savings that will be compared to the utility's goals. Parameters that are subject to retrospective adjustment will vary by program but typically will include the quantity of measures installed. In EPY4/GPY1 ComEd's deemed parameters were defined in its filing with the ICC. The Gas utilities agreed to use the parameters defined in the TRM, which came into official force for EPY5/GPY2.

**Application:** When a program has deemed parameters then the Verified Savings are to be placed in the body of the report. When it does not (e.g., Business Custom, Retrocommissioning), the evaluated impact results will be the Impact Evaluation Research Findings.

##### Impact Evaluation Research Findings composed of

- Research Findings Gross Energy Savings
- Research Findings Gross Demand Savings
- Research Findings Net Energy Savings
- Research Findings Net Demand Savings

These are savings reflecting evaluation adjustments to any of the savings parameters (when supported by research) regardless of whether the parameter is deemed for the verified savings analysis. Parameters that are adjusted will vary by program and depend on the specifics of the research that was performed during the evaluation effort.

**Application:** When a program has deemed parameters then the Impact Evaluation Research Findings are to be placed in an appendix. That Appendix (or group of appendices) should be labeled Impact Evaluation Research Findings and designated as "ER" for short. When a program does not have deemed parameters (e.g., Business Custom, Retrocommissioning), the Research Findings are to be in the body of the report as the only impact findings. (However, impact findings may be summarized in the body of the report and more detailed findings put in an appendix to make the body of the report more concise.)

## Program-Level Savings Estimates Terms

N	Term Category	Term to Be Used in Reports‡	Application†	Definition	Otherwise Known As (terms formerly used for this concept)§
1	Gross Savings	Ex-ante gross savings	Verification and Research	Savings as recorded by the program tracking system, unadjusted by realization rates, free ridership, or spillover.	Tracking system gross
2	Gross Savings	Verified gross savings	Verification	Gross program savings after applying adjustments based on evaluation findings for only those items subject to verification review for the Verification Savings analysis	Ex post gross, Evaluation adjusted gross
3	Gross Savings	Verified gross realization rate	Verification	Verified gross / tracking system gross	Realization rate
4	Gross Savings	Research Findings gross savings	Research	Gross program savings after applying adjustments based on all evaluation findings	Evaluation-adjusted ex post gross savings
5	Gross Savings	Research Findings gross realization rate	Research	Research findings gross / ex-ante gross	Realization rate
6	Gross Savings	Evaluation-Adjusted gross savings	Non-Deemed	Gross program savings after applying adjustments based on all evaluation findings	Evaluation-adjusted ex post gross savings
7	Gross Savings	Gross realization rate	Non-Deemed	Evaluation-Adjusted gross / ex-ante gross	Realization rate
1	Net Savings	Net-to-Gross Ratio (NTGR)	Verification and Research	1 – Free Ridership + Spillover	NTG, Attribution
2	Net Savings	Verified net savings	Verification	Verified gross savings times NTGR	Ex post net
3	Net Savings	Research Findings net savings	Research	Research findings gross savings times NTGR	Ex post net
4	Net Savings	Evaluation Net Savings	Non-Deemed	Evaluation-Adjusted gross savings times NTGR	Ex post net
5	Net Savings	Ex-ante net savings	Verification and Research	Savings as recorded by the program tracking system, after adjusting for realization rates, free ridership, or spillover and any other factors the program may choose to use.	Program-reported net savings

‡ “Energy” and “Demand” may be inserted in the phrase to differentiate between energy (kWh, Therms) and demand (kW) savings.

† **Verification** = Verified Savings; **Research** = Impact Evaluation Research Findings; **Non-Deemed** = impact findings for programs without deemed parameters. We anticipate that any one report will either have the first two terms or the third term, but never all three.

§ Terms in this column are not mutually exclusive and thus can cause confusion. As a result, they should not be used in the reports (unless they appear in the “Terms to be Used in Reports” column).

## Individual Values and Subscript Nomenclature

The calculations that compose the larger categories defined above are typically composed of individual parameter values and savings calculation results. Definitions for use in those components, particularly within tables, are as follows:

**Deemed Value** – a value that has been assumed to be representative of the average condition of an input parameter and documented in the Illinois TRM or ComEd’s approved deemed values. Values that are based upon a deemed measure shall use the superscript “D” (e.g., delta watts<sup>D</sup>, HOU-Residential<sup>D</sup>).

**Non-Deemed Value** – a value that has not been assumed to be representative of the average condition of an input parameter and has not been documented in the Illinois TRM or ComEd’s approved deemed values. Values that are based upon a non-deemed, researched measure or value shall use the superscript “E” for “evaluated” (e.g., delta watts<sup>E</sup>, HOU-Residential<sup>E</sup>).

**Default Value** – when an input to a prescriptive saving algorithm may take on a range of values, an average value may be provided as well. This value is considered the default input to the algorithm, and should be used when the other alternatives listed for the measure are not applicable. This is designated with the superscript “DV” as in  $X^{DV}$  (meaning “Default Value”).

**Adjusted Value** – when a deemed value is available and the utility uses some other value and the evaluation subsequently adjusts this value. This is designated with the superscript “AV” as in  $X^{AV}$

## Glossary Incorporated From the TRM

Below is the full Glossary section from the TRM Policy Document as of October 31, 2012<sup>38</sup>.

**Evaluation:** Evaluation is an applied inquiry process for collecting and synthesizing evidence that culminates in conclusions about the state of affairs, accomplishments, value, merit, worth, significance, or quality of a program, product, person, policy, proposal, or plan. Impact evaluation in the energy efficiency arena is an investigation process to determine energy or demand impacts achieved through the program activities, encompassing, but not limited to: *savings verification, measure level research, and program level research*. Additionally, evaluation may occur outside of the bounds of this TRM structure to assess the design and implementation of the program.

*Synonym:* **Evaluation, Measurement and Verification (EM&V)**

**Measure Level Research:** An evaluation process that takes a deeper look into measure level savings achieved through program activities driven by the goal of providing Illinois-specific research to facilitate updating measure specific TRM input values or algorithms. The focus of this process will primarily be driven by measures with high savings within Program Administrator portfolios, measures with high uncertainty in TRM input values or algorithms (typically informed by previous savings verification activities or program level research), or measures where the TRM is lacking Illinois-specific, current or relevant data.

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<sup>38</sup> IL-TRM\_Policy\_Document\_10-31-12\_Final.docx

**Program Level Research:** An evaluation process that takes an alternate look into achieved program level savings across multiple measures. This type of research may or may not be specific enough to inform future TRM updates because it is done at the program level rather than measure level. An example of such research would be a program billing analysis.

**Savings Verification:** An evaluation process that independently verifies program savings achieved through prescriptive measures. This process verifies that the TRM was applied correctly and consistently by the program being investigated, that the measure level inputs to the algorithm were correct, and that the quantity of measures claimed through the program are correct and in place and operating. The results of savings verification may be expressed as a program savings realization rate (verified ex post savings / ex ante savings). Savings verification may also result in recommendations for further evaluation research and/or field (metering) studies to increase the accuracy of the TRM savings estimate going forward.

**Measure Type:** Measures are categorized into two subcategories: custom and prescriptive.

**Custom:** Custom measures are not covered by the TRM and a Program Administrator's savings estimates are subject to retrospective evaluation risk (retroactive adjustments to savings based on evaluation findings). Custom measures refer to undefined measures that are site specific and not offered through energy efficiency programs in a prescriptive way with standardized rebates. Custom measures are often processed through a Program Administrator's business custom energy efficiency program. Because any efficiency technology can apply, savings calculations are generally dependent on site-specific conditions.

**Prescriptive:** The TRM is intended to define all prescriptive measures. Prescriptive measures refer to measures offered through a standard offering within programs. The TRM establishes energy savings algorithm and inputs that are defined within the TRM and may not be changed by the Program Administrator, except as indicated within the TRM. Two main subcategories of prescriptive measures included in the TRM:

**Fully Deemed:** Measures whose savings are expressed on a per-unit basis in the TRM and are not subject to change or choice by the Program Administrator.

**Partially Deemed:** Measures whose energy savings algorithms are deemed in the TRM, with input values that may be selected to some degree by the Program Administrator, typically based on a customer-specific input.

In addition, a third category is allowed as a deviation from the prescriptive TRM in certain circumstances, as indicated in Section 3.2:

**Customized basis:** Measures where a prescriptive algorithm exists in the TRM but a Program Administrator chooses to use a customized basis in lieu of the partially or fully deemed inputs. These measures reflect more customized, site-specific calculations (e.g., through a simulation model) to estimate savings, consistent with Section 3.2.

## 5.2 Detailed Impact Evaluation Methods

This section describes the methods used to evaluate the gross and net savings estimates of the Small Business Energy Savings program in greater detail.

The evaluation methods used to produce estimates of the gross and net impacts of the EPY4/GPY1 SBES program include:

- Engineering review of measure per-unit savings assumptions
- Examination of tracking system calculations of claimed savings
- CATI telephone survey of sampled program participants to verify participation and gather site-specific measure data
- Engineering review of project documentation at the measure level for a subsample of survey participants
- On-site verification of a subsample of projects selected from among the survey participants to verify equipment installation
- In-depth trade ally interviews

### 5.2.1 Measure-level per-unit savings

The ex-ante gross energy savings for most of the electric lighting measures in the EPY4 SBES program are calculated from per-unit savings values defined by the document *Plan Year 4 Deemed Savings Values 31230.pdf*<sup>39</sup>. For the SBES program, the *Plan Year 4* document indicated for “Prescriptive based measures,” that “Some measures deemed per Prescriptive program”, while for “All other measures” it indicated that “New Program – realization rates not eligible for deeming at this time.” The technical basis for ComEd’s ex-ante gross savings are contained in the ComEd document *Appendix A – ComEd Work papers 8-5-11.pdf*.<sup>40</sup> These two ComEd sources allowed the evaluation team to review default savings for all lighting measures and inform adjustments if warranted. The electric hot water saving measures (aerators, showerheads, and pre-rinse sprayers) are not included in ComEd’s *Plan Year 4 Deemed Values* or *Appendix A*, and were assigned default values by the implementers. Vending and cooling miser devices were assigned default values from the State of Illinois Energy Efficiency Technical Reference Manual (TRM)<sup>41</sup>

The Illinois TRM provides the per-unit savings for gas measures, with some exceptions for measures that were not covered in the current TRM version. For measures not covered by the Illinois TRM, the implementers provided default values and assumptions that were used in program planning.

### 5.2.2 CATI telephone surveys

Computer-Assisted Telephone Interviewing (CATI) surveys were conducted with a sample of ComEd, Nicor Gas and Peoples Gas and North Shore Gas program participants. The survey was directed toward unique customer contact names drawn from the tracking system for EPY4 and GPY1 paid SBES projects. The survey asked questions that were used to estimate net program impacts (quantitative assessment of free-ridership and spillover) and questions related to specific measures, such installed quantities, in support of the gross

<sup>39</sup> This document is on the ICC web site for docket 10-0570. (<http://www.icc.illinois.gov/docket/Documents.aspx?no=10-0570>)

<sup>40</sup> Provided by David Nichols, email August 12, 2011.

<sup>41</sup> Final version, September 14, 2012, effective June 1, 2012.



impact analysis, as well as process-related questions. The participant survey can be found later in this Appendix.

### 5.2.2.1 CATI survey sample design

The sampling strategy for the CATI surveys was designed to produce 90/10 confidence/precision levels for program-level savings estimates for ComEd participants and for Nicor Gas participants. The sample was also designed to ensure inclusion of projects with direct-install measures as well as contractor-install measures, and projects with electric measures as well as gas measures. Table 5-1 and Table 5-2 provide a breakdown of installed electric and gas measures.

**Table 5-1. Installed Electric Measures for ComEd**

Installed Electric Measure Type	ComEd		
	Ex-Ante Quantity Installed	Ex-ante Gross Savings, kWh	kWh Percent
[DI] CFL	1,031	243,698	3%
[DI] Vending Miser/Cooling Miser	205	291,759	3%
[DI] Showerheads	17	5,525	~ 0%
[DI] Pre-Rinse Sprayers	8	10,048	~ 0%
[DI] Aerators	213	26,541	~ 0%
[CI] 4 ft HPT8 Fixture	3,395	582,971	6%
[CI] 4' HPT8/LWT8 Lamp & Bal.	4,686	671,873	7%
[CI] Delamping: T12 to 4' HPT8	7,381	3,497,999	38%
[CI] HID to High Bay HPT8	1,217	1,321,447	14%
[CI] U-Tube 2-Lamp	122	15,187	~ 0%
[CI] LED Exit Sign Retrofit	1,415	421,370	5%
[CI] CFL	2,812	1,054,994	11%
[CI] Cold Cathode Lamps	5,340	1,063,569	12%
All Electric Measure Savings		9,206,981	100%

Source: Savings verification and analysis of ex-ante savings from ComEd online tracking system, October 29, 2012. [DI] refers to direct-installed measures. [CI] refers to contractor-installed measures.

**Table 5-2. Installed Gas Measures for Nicor Gas**

Installed Gas Measure Type	Nicor Gas		
	Ex-Ante Quantity Installed	Ex-ante Gross Savings, Therms	Therms percent
[DI] Aerators - Bathroom	212	1,081	1%
[DI] Aerators - Kitchen	46	198	~0%
[DI] Hot Water Turn Down	1	11	~ 0%
[DI] Pre-Rinse Sprayers	56	9,464	9%
[DI] Showerheads	74	999	1%
[CI] Boiler Reset Control	17	10,501	10%
[CI] Boiler Tune-up	46	5,804	6%
[CI] Condensing Furnace Upgrade	4	1,492	1%
[CI] Furnace Tune-up	242	15,246	15%
[CI] Install Programmable Thermostats	333	59,274	57%
[CI] Aerators – Kitchen	57	245	~ 0%
[CI] Aerators – Bathroom	33	168	~ 0%
All Gas Measure Savings		104,483	100%

Source: Savings verification and analysis of ex-ante savings from Nicor Gas data, October 6, 2012. [DI] refers to direct-installed measures. [CI] refers to contractor-installed measures.

For GPY1 and EPY4, a statistically significant sample based on 90/10 confidence/precision levels for program-level savings was achieved based on telephone verification interviews. The specific customer projects receiving the engineering reviews or site visits were selectively chosen from the telephone interview respondents to represent larger or more complicated SBES projects.

Program planners anticipated that many customers would install both gas and electric saving measures. The goal of the sampling task was to create a list of customers with unique contact names attached to unique site addresses. Most customers installed more than one measure and some of them installed multiple measures at more than one site. To create the customer list, the Navigant team conducted the following tasks:

- Customers with gas and electric measures at one site were combined.
- For customers with one site and more than one set of gas or electric measures, Navigant choose the measures with the largest savings.
- For customers with more than one site, Navigant choose the site with the largest savings.
- Customers with no valid telephone numbers were excluded from the list.
- Customers with trade allies for the contact were excluded from the list.

Project sites were randomly sampled from tracking data listing program participants provided by Nexant and Franklin Energy. No customer was allowed in the sample more than once, but some participants appear in gas and electric samples because they were interviewed once for the mix of measure types installed (direct-installed, contractor-install, gas measures, and electric measures).

Table 5-3 below shows the final disposition of the 484 unique contacts included in the original sample frame for the ComEd/Nicor Gas participant survey.

**Table 5-3. Sample Disposition for Gross Impact, NTG and Process Analysis**

Sample Disposition	Customers	Percent
Population of Unique Customers	484	100%
Initial refusal	184	38%
Non-specific callback	78	16%
Complete	77	16%
Answering Machine	33	7%
Disconnected	20	4%
No answer	17	4%
Hard refusal	16	3%
Wrong number	14	3%
Mid-terminate	14	3%
Could not confirm participation	9	2%
Computer tone	6	1%
Refused – cell phone	5	1%
Scheduled appointment	4	1%
Callback to complete	3	1%
Residential phone	2	0%
Not called	2	0%
<i>Response Rate</i>	16%	

*Source: Evaluation team*

Table 5-4 provides a profile of the gross savings evaluation sample for the ComEd EPY4 SBES program in comparison with the SBES program population. The resulting sample consisted of 90 projects,<sup>42</sup> responsible for 1.2 million kWh of ex-ante gross energy savings and representing 13 percent of the energy savings for the program population. Of the 90 sampled projects, some contain DI measures only, some contain CI measures only, and some contain both types of measures.

<sup>42</sup> Includes ComEd joint projects with Peoples Gas and North Shore Gas.

**Table 5-4. Profile of the ComEd EPY4 SBES Population and Gross Savings Evaluation Sample**

Population Summary				Gross Impact Sample		
Installed Electric Measure Type	Number of Projects (N)	Ex-ante Gross Savings, kWh	kWh percent	n	Ex-ante Gross Savings kWh	Sampled percent of Pop.
Direct-Installed (DI)	478	577,571	6%	55	74,748	13%
Contractor-Installed (CI)	401	8,629,410	94%	55	1,146,039	13%
All Projects*	690	9,206,981	100%	90	1,220,787	13%

Source: Savings verification and analysis of ex-ante savings from ComEd online tracking system, October 29, 2012.

\*Some projects contain both DI and CI measures, so the total number for “All Projects” is less than the sum of projects that contain DI measures plus the number of projects that contain CI measures.

Table 5-5 provides a profile of the gross savings evaluation sample for the Nicor Gas GPY1 SBES program in comparison with the SBES program population. The resulting sample consisted of 31 projects, responsible for 8,131 therms of ex-ante gross energy savings and representing 8 percent of the ex-ante gross energy savings for the program population. Of the 31 sampled projects, some contain DI measures only, some contain CI measures only, and some contain both types.

**Table 5-5. Profile of the Nicor Gas GPY1 SBES Population and Gross Savings Evaluation Sample**

Population Summary				Gross Impact Sample		
Installed Gas Measure Type	Number of Projects (N)	Ex-ante Gross Savings, Therms	kWh percent	n	Ex-ante Gross Savings Therms	Sampled percent of Pop.
Direct-Installed (DI)	154	11,753	11%	20	1,076	9%
Contractor-Installed (CI)	162	92,730	89%	15	7,055	8%
All Projects*	272	104,483	100%	31	8,131	8%

Source: Savings verification and analysis of ex-ante savings from Nicor Gas data, October 6, 2012.

\*Some projects contain both DI and CI measures, so the total number of “All Projects” is less than the sum of projects that contain DI measures plus the number of projects that contain CI measures.

For the NTG interviews, the population was stratified into two groups: projects that consisted of direct-installed measures only (DI Only) and projects that contained contractor-installed measures either with or without also having direct-installed measures (CI or CI+DI). The DI-only stratum received a slightly modified NTG battery of questions than were given to participants with CI measures. If a participant had CI and DI measures installed, the NTG battery asked only the CI battery. The number of sample points for the NTG estimate will be greater than the number of interviews if a respondent indicated that multiple sites they represent (e.g., retail chains) had gone through a single energy efficiency upgrade decision making process. Table 5-6 provides the sample for projects with electric measures installed for ComEd EPY4 SBES. Table 5-7 provides the sample for projects with gas measures installed for Nicor Gas GPY1 SBES.

**Table 5-6. Participant Net-to-Gross Sample for ComEd EPY4**

Sample Strata	Project Population (N=690)	NTG Interviews (n=84)	NTG Sample (n=85)	Sample kWh Weights
DI Only	289	29	29	0.036
CI or CI+DI	401	55	56	0.964
Total	690	84	85	1.000

Source: Telephone interviews.

**Table 5-7. Participant Net-to-Gross Sample for Nicor Gas GPY1**

Sample Strata	Project Population (N=272)	NTG Interviews (n=24)	NTG Sample (n=25)	Sample Therm Weights
DI Only	110	9	9	0.071
CI or CI+DI	162	15	16	0.929
Total	272	24	25	1.000

Source: Telephone interviews.

Navigant completed process interviews with 99 ComEd customer participants in total including Nicor Gas. NTG and gross impact interviews were completed with 84 and 90 PY4 ComEd participants, respectively, resulting in a precision level of +/-3 percent for net to gross results and +/-5 percent for gross impact results at 90 percent level of confidence.

Navigant completed process interviews with 47 Nicor Gas customer participants. NTG and gross impact interviews were completed with 24 and 31 GPY1 Nicor Gas participants, respectively, resulting in a precision level of +/-10 percent for net to gross results at a 90 percent level of confidence, while no evaluation adjustments were made as a result of the gross impact verification.

### 5.2.3 Gross Savings Evaluation Research Findings

Research findings gross savings for sampled projects were estimated using the following approach, which was applied to the measures found in the CATI sample. The CATI telephone survey described the measure types and quantities reported in the tracking system to each participant, then asked the participant to verify whether the measures as described had been installed and, if not, whether the participant could identify the currently installed quantities and measures. These questions were asked for all direct-install measures reported at a site, and for up to three contractor-installed lighting measures and three contractor-installed non-lighting measures. A measure-level adjustment factor was then calculated as the verified quantity divided by the ex-ante quantity reported in the tracking system.

On measures where an in-service rate is factored into ex-ante savings, the customer in-service rate was adjusted to reflect customer responses, where provided. For electric lighting measures, participants were asked a detailed set of questions on lighting schedules and percent of lights operating to support an estimate

of equivalent annual full load hours of operation. Research findings gross impacts reflect lighting hours of use adjustment where estimated.

Measures in the CATI sample were also reviewed to determine whether per-unit savings were correctly applied in the ex-ante gross savings calculations in the tracking file. If the default value for a given measure was not applied correctly, a realization rate adjustment, defined as the evaluation estimated per-unit savings divided by the ex-ante per-unit savings, was applied.

For projects that received a file review or an on-site visit, an engineering verification realization rate was applied that adjusted for either verified quantities or measure type as observed in documentation or on-site.

A research findings gross realization rate (which is the ratio of the research findings gross savings to ex-ante gross savings as reported in the tracking system) was then estimated for the sample and applied to the total program ex-ante gross savings. The result is an evaluation research findings gross savings for the SBES program as a whole.

Evaluation research findings for gross savings are provided in Table 5-8.

**Table 5-8. Research Findings Savings of the Small Business Energy Savings Program**

Savings Estimates	EPY4 ComEd Electric Energy Savings (kWh)	GPY1 Nicor Gas Natural Gas Energy Savings (Therms)
Ex-Ante Gross*	9,206,981	104,483
Ex-Ante Net**	7,365,585	83,586
Research Findings Gross	7,891,179	99,797
Research Findings Net***	7,496,620	99,797

\* Source: Electric ex-ante gross savings from ComEd online tracking system, October 29, 2012. Nicor Gas ex-ante savings from an extract dated October 6, 2012.

\*\* ComEd ex-ante net savings shown here is an evaluation estimate that applied a NTGR of 0.80 to the ex-ante gross savings. Nicor Gas ex-ante net savings includes a NTGR of 0.80.

\*\*\* ComEd research findings NTGR is 0.95. Nicor Gas research findings NTGR is 1.00.

The EPY4 ComEd electric savings have a research findings gross realization rate of 0.86, compared with the verified gross realization rate of 1.03. The relative precision at a 90 percent confidence level is  $\pm 8$  percent for the electric gross impact research findings savings. The substantial drop is mainly due to the lower lighting hours of use. The Nicor Gas research findings realization was 0.96, which is slightly lower than the 1.00 verified gross realization rate, due mainly to zero savings assigned to a programmable thermostat project in the sample. The relative precision at a 90 percent confidence level is  $\pm 6$  percent for the natural gas gross impact research findings savings.

#### 5.2.4 Verified Gross Savings with Aerator and Showerhead Errata Fixed

An error was found in the Illinois TRM for Commercial and Industrial aerators and showerheads and was brought to the attention of the TRM Technical Advisory Committee: an adjustment of the “GPM factor” was redundant in the algorithm, resulting in savings that are underestimated for gas and electric water heating. We did not adjust our evaluation verified savings to fix these errors in the main report for gas savings, but provide a revised calculation result below if it is determined that this error adjustment should be applied retroactively to GPY1 savings. The revised verified gross and research findings net savings are provided in

Table 5-9. For Nicor Gas, we revised the ex-ante basis to adjust for the error, since the gas utilities had intended to base ex-ante impacts on the TRM. Since the TRM was not required for electric water saving measures in EPY4, the gross electric savings for aerators and showerheads shown in the main report already reflect the corrected algorithm applied by evaluation.

**Table 5-9. Verified Savings of the SBES with Aerator and Showerhead Errata Fixed**

Savings Estimates	GPY1 Nicor Gas Natural Gas Energy Savings (Therms)
Ex-Ante Gross*	109,353
Ex-Ante Net**	87,482
Verified Gross	109,353
Research Findings Net***	109,353

\* Source: Nicor Gas ex-ante savings from an extract dated October 6, 2012, adjusted to correct for the aerator and showerhead TRM errata.

\*\* Gas ex-ante net savings includes a NTGR of 0.80.

\*\*\* Nicor Gas research findings NTGR is 1.00.

The adjustment to fix the errata increases the gas savings substantially due to the 5 percent higher ex-ante gross savings.

### 5.2.5 Net-to-gross analysis

The primary objective of the net savings analysis for the SBES program was to determine the program’s net effect on customers’ energy usage. After gross program impacts have been assessed, net program impacts are derived by estimating a NTGR that quantifies the percentage of the gross program impacts that can be reliably attributed to the program.

For EPY4/GPY1, the net program impacts were quantified from the estimated level of free-ridership and participant spillover. Quantifying free-ridership requires estimating what would have happened in the absence of the program. Free-ridership was calculated using an algorithm based on interview results from participating customers supported by data collected from in-depth trade ally interviews. The existence of participant spillover was quantitatively examined by identifying spillover candidates through questions asked in the participant telephone interviews.

Once free-ridership and spillover have been estimated, the NTGR is calculated as follows:

$$\text{NTGR} = 1 - \text{Free-ridership Rate} + \text{Participant Spillover} + \text{Non-Participant Spillover}$$

### 5.2.6 Basic Rigor Free-Ridership Assessment

Free-ridership was assessed using a customer self-report approach following a framework that was developed for evaluating net savings of California’s 2006-2008 nonresidential energy efficiency programs. This method calculates free-ridership using data collected during participant telephone interviews concerning three items:

- A **Timing and Selection** score that reflects the influence of the most important of various program and program-related elements in the customer’s decision to select the specific program measure at this time.
- A **Program Influence** score that captures the perceived importance of the program (whether rebate, recommendation, or other program intervention) relative to non-program factors in the decision to implement the specific measure that was eventually adopted or installed. This score is cut in half if the participant learned about the program after having already decided to implement the measures.
- A **No-Program** score that captures the likelihood of various actions the customer might have taken at this time and in the future if the program had not been available. This score accounts for deferred free-ridership by incorporating the likelihood that the customer would have installed program-qualifying measures at a later date if the program had not been available.

Each of these scores represents the highest response or the average of several responses given to one or more questions about the decision to install a program measure. The rationale for using the maximum value is to capture the most important element in the participant’s decision making. This approach and scoring algorithm were developed from that used for the ComEd and Ameren Illinois C&I prescriptive rebate programs.

#### 5.2.7 Participant Spillover

For the EPY4/GPY1 SBES program evaluation, a battery of questions was asked to identify spillover candidates. Below are paraphrased versions of the spillover questions that were asked:

1. Since your participation in the SBES Program, did you implement any ADDITIONAL energy efficiency measures at this facility or at your other facilities within <ComEd/Nicor Gas> service territory that did NOT receive incentives through any utility or government program?
2. On a scale of 0-10, where 0 means “no influence” and 10 means “greatly influenced,” how much did your experience with the SBES Program influence your decision to install high efficiency equipment on your own?
3. Why do you give the SBES Program this influence rating?

If the response to question 2 was given a score of 7 or higher, we judged the respondent to be a spillover candidate, and an attempt was made to quantify the savings.

#### 5.2.8 NTG Scoring for Customer Participant Data

The NTG scoring approach for customer participants is summarized in Table 5-10.



**Table 5-10. Net-to-Gross Scoring Algorithm for Customer Participant Data**

Scoring Element	Calculation
<p><b>Timing and Selection score.</b> The maximum score (scale of 0 to 10 where 0 equals not at all influential and 10 equals very influential) among the self-reported influence level the program had for:</p> <p>A. Availability of the program incentive                      B. Recommendation from utility program staff person                      C. Information from utility or program marketing materials                      D. Endorsement or recommendation by utility account manager                      E. Other factors (recorded verbatim)</p>	Basic Rigor: Maximum of A, B, C, D, and E
<p><b>Program Influence score.</b> “If you were given a TOTAL of 100 points that reflect the importance in your decision to implement the &lt;ENDUSE&gt;, and you had to divide those 100 points between: 1) the program and 2) other factors, how many points would you give to the importance of the PROGRAM?”</p>	Points awarded to the program (divided by 10). Divide by 2 if the customer learned about the program AFTER deciding to implement the measure that was installed
<p><b>No-Program score.</b> “Using a likelihood scale from 0 to 10, where 0 is “Not at all likely” and 10 is “Extremely likely,” if the utility program had not been available, what is the likelihood that you would have installed exactly the same equipment?” The NTG algorithm computes the Likelihood Score as 10 minus the respondent’s answer (e.g., the likelihood score will be 0 if extremely likely to install exactly the same equipment if the program had not been available).</p> <p>Adjustments to “Likelihood score” are made for timing: “Without the program, when do you think you would have installed this equipment?” Free-ridership diminishes as the timing of the installation without the program moves further into the future.</p>	Interpolate between Likelihood Score and 10 to obtain the No-Program score, where If “At the same time” or within 6 months then the No Program score equals the Likelihood Score, and if 48 months later then the No Program Score equals 10 (no free-ridership)
Project-level Free-ridership (ranges from 0.00 to 1.00)	1 – Sum of scores (Timing & Selection, Program Influence, No-Program)/30
<p>“Our records show that &lt;COMPANY&gt; also received an incentive from &lt;UTILITY&gt; for a &lt;different end use&gt; project at &lt;same ADDRESS&gt;. Was the decision making process for the &lt;different end use&gt; project the same as for the &lt;ENDUSE&gt; project we have been talking about?”</p>	If participant responds “same decision,” assign free-ridership score to other end-uses of the same project
<p>“Our records show that &lt;COMPANY&gt; also received an incentive from &lt;UTILITY&gt; for &lt;number&gt; other &lt;ENDUSE&gt; project(s). Was it a single decision to complete all of those &lt;ENDUSE&gt; projects for which you received an incentive from &lt;UTILITY&gt; or did each project go through its own decision process?”</p>	If participant responds “single decision,” assign free-ridership score to same end-use of the additional projects (projects with separate project ID’s)
PY4 Project level NTGR (free-ridership only)	1 – Project level Free-ridership

Source: Evaluation team

For projects that had quantifiable spillover, the program-level net savings reflecting free-ridership was adjusted to add the participant spillover.

### 5.2.9 Trade Ally Net-to-Gross Assessment and Final NTGR

The trade ally responses to free-ridership interviews resulted in an evaluation estimate of 2 percent free-ridership for gas measures, and 5 percent free-ridership for electric measures. The primary driver of the trade ally results is the consistent response, from a small number of trade allies that installed the vast majority of measures, that SBES strongly influenced their 2011 sales to small businesses to which they had not sold energy efficient products in the past. We used the trade ally estimate as a cap on free-ridership,

concluding that the trade allies used the program to overcome market barriers to serve a hard-to-reach audience. This is supported by the program theory that the program was designed to serve an under-served market.

ComEd and the gas utilities designed the SBES program to serve small businesses that had not participated in standard energy efficiency programs in the past. As such, the program theory implies that any SBES participation does not cannibalize measure installations from other programs. By extension, any expanded “market share” gained by SBES displaces sales of less-efficient equipment.

In order to include the effect of market expansion, consider a new approach where we first quantify the expanded market energy efficient equipment that these trade allies would not have served without the influence of the program. All of the sales in the expanded market would not be free-riders because, prior to SBES, they would not have had access to rebated equipment.

Four questions in the current interview guide provide this information:

C1 Were you selling your services to small businesses that qualify for this program prior to participating in the SBES program?

[IF YES] About what percent of your sales (units or dollars) were to these small businesses before the program?

- a. Thinking about your 2010 sales to small businesses only, about what percent of your sales do you think were of energy efficient equipment in 2010 – before the program? Was it more than 50% or less than 50%? More or less than 75% or 25%? Etc. (narrow down ideally to a 10% range – e.g., 20-30%)

C2 About what percent of your total sales do you think were to small businesses in 2011 after you became a program approved trade ally?

- a. Thinking again about those small businesses in 2011, about what percent of your sales were of energy efficient equipment? Was it more than 50% or less than 50%? More or less than 75% or 25%? Etc.

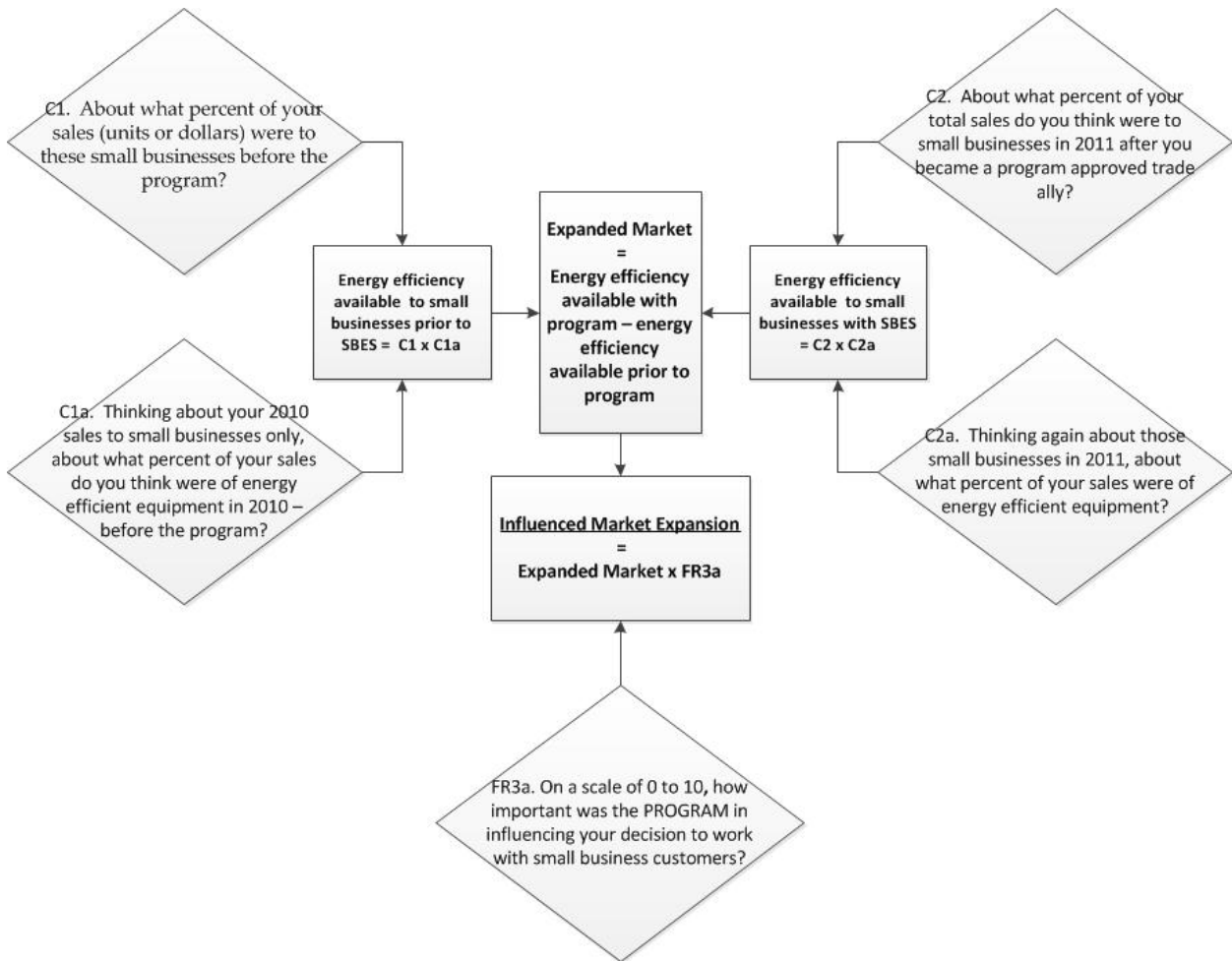
Unfortunately, the interviews did not capture this information for all respondents. For the purposes of calculation, we used the following questions as proxies for the above questions for two respondents:

C3. Of the [number of projects in program] projects in 2011, how many of these small businesses were your customers before they participated in the program?

C4. Of the small businesses who were your customers before the program, how many of them had EVER installed energy efficient equipment that you are aware of?

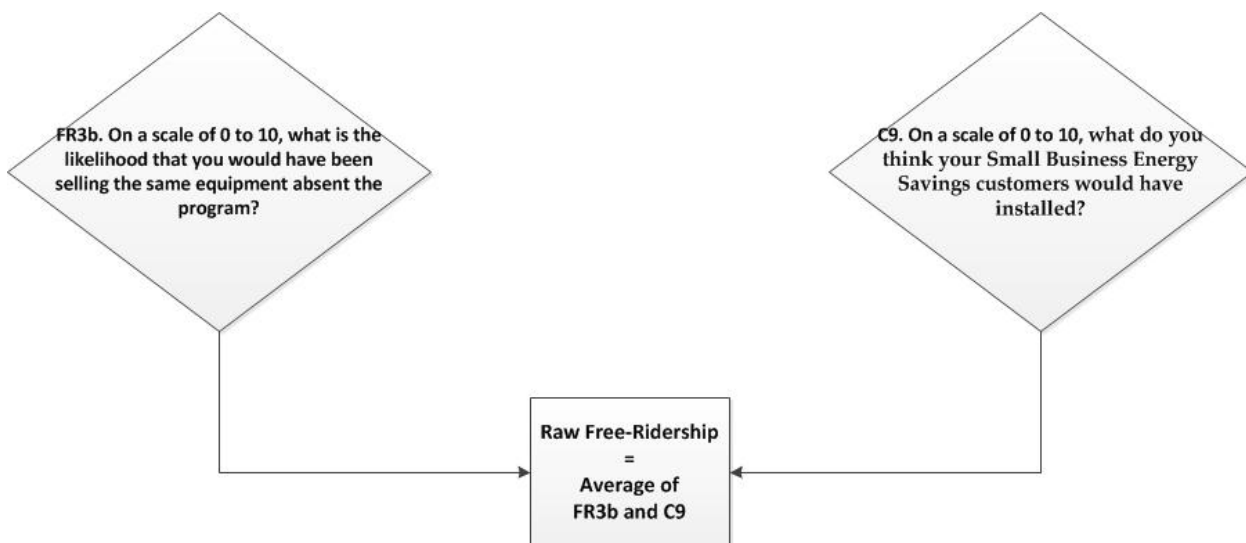
Follow-up interviews confirmed the validity of these proxies and provided the basis for recalculation. Figure 5-1 shows the mechanics of this process:

**Figure 5-1. SBES Program Influenced Market Expansion Calculation**



While the energy savings from the Influenced Market Expansion for a given trade ally would be unencumbered by free-riders, its complement (1 – influenced market expansion) could have some degree of free-ridership. We can calculate this using a comparison of the trade ally’s perception of the counter-factual selling practices to their perception of the counter-factual willingness to purchase energy efficient products absent the program. In other words, the question posed is: what does the trade ally perceive they would sell absent the program compared to what they perceive the participant would have been willing to buy absent the program? Figure 5-2 below illustrates this comparison.

**Figure 5-2. SBES Program Trade Ally Free-Ridership Calculation**



The calculation of Free-Ridership for each trade ally would put together the two elements discussed above per the following equation:

$$(1 - \text{Influenced Market Expansion}) \times \text{Raw Free-Ridership}$$

For an estimate of program Free-Ridership (from the trade ally perspective), the next steps would be to weight and sum the individual Free-Ridership values. The NTG Calculation would be as follows:

$$1 - \text{Weighted Free-Ridership} = \text{NTG (from the Trade Ally perspective)}$$

Using the trade ally weighted free-ridership as a cap on program-free-ridership from the participant’s perspective produces Navigant’s recommended NTG for SBES.

### 5.3 Detailed Process Results

#### 5.3.1.1 Characteristics of Survey Participants and Trade Allies

The program has multiple implementation contractors, each playing a different role. Franklin Energy and Nexant are the two SBES program implementers – Franklin Energy implementing the program for ComEd, North Shore Gas and Peoples Gas, and Nexant doing so for ComEd and Nicor Gas. Nicor Gas contracted with WECC to serve as their overall program administrator, while North Shore Gas and Peoples Gas used Franklin Energy for both implementation and marketing.

The Nexant Outreach/Marketing Manager was responsible for marketing strategy and for assisting trade allies. She supports trade allies on outreach events and reaches out to business organizations and the Chamber of Commerce. In addition, she works with utility staff to market the program and provides a point of contact for trade allies. It appears that the implementation contractors have been successful in this area, as

all the trade allies said they know whom to call at Nexant and Franklin Energy for support with the program.

#### ***ComEd and Nicor Gas Customers Survey Participants***

The ComEd/Nicor Gas survey participants consisted mostly of two groups: church, non-profit and retail, service organizations. The remaining customers were distributed about equally among restaurants, automotive repair, offices, industrial, and other. A few ComEd survey respondents also listed real estate, transportation/warehouses, and medical facilities as their business types.

#### ***ComEd/Nicor Gas Trade Ally Participants***

Trade ally participants in the ComEd/Nicor Gas SBES program include lighting contractors, HVAC contractors, and environmental companies who specialize in providing energy efficient products. Some of the companies changed their focus to accommodate the SBES program and other ComEd programs, while others are continuing their pre-program market focus on energy solutions, energy efficient lighting, automation, HVAC, and solar, wind, and gas savings.

The smallest trade allies reported one or two employees and the largest, an HVAC company, reported 130 employees. Of the eight trade allies who answered the installation question, four were lighting companies that installed only lighting measures, three installed both electric and gas measures, and one installed only gas measures. Two companies, a lighting company and an HVAC company, each bought a second firm to enable them to offer all the measures in the program to their customers.

SBES trade allies are a subset of the Standard and Custom trade ally list. The implementers limited the number of trade allies that were allowed into the SBES program because of their close relationship to the delivery of the program and the need for a significant amount of training. Some trade allies have longstanding, close relationships with electrical or mechanical trade allies who help them provide a turn-key product to their customers. Another issue was the amount of trade ally participation in the program. Some trade allies have embraced the program, aggressively market it and have hired more staff, while others have fielded only a few projects.

The implementers did a good job with the assessments, according to trade allies. The assessments helped provide legitimacy to the program. A couple of lighting contractors said they preferred to accompany the energy advisor during the assessment visit to configure the lighting plan.

Trade allies first learned about the program from a client, a distributor, at a meeting, from an implementation contractor field representative, or from working with the Standard and Custom Programs. One of the trade allies was quite active in the pilot program in Rockford, Illinois.

Trade allies experienced with the ComEd programs were able to walk customers through the Standard and Custom Program paperwork. Trade allies noted that the incentives were lower in the Standard Program compared to the SBES Program.

#### ***Trades Allies – Customer Satisfaction***

Trade allies expressed their evaluation of customer satisfaction with statements like this one:

“Yes, the program encourages us to dedicate time and effort to a market segment that I would have passed on. Now it is good viable business market. I think

customers are satisfied. I never heard a complaint. Most of my comments are more focused on making the process more efficient and simplified to help us close more deals.”

One Nexant trade ally pointed out that small businesses do not usually have a facility manager and are therefore usually happy to get technical advice for their projects.

#### Trade Ally Satisfaction with the Program

All but one of the trade allies was very satisfied with the program. One said he found it a good source of steady income and a good way to expand their client base.

The one trade ally that was not satisfied said he does not know the rules and was confused by it. He likes things ‘black and white.’ Three other trade allies had more to say on this subject:

- “Yeah. Would like to see more and more things added like Air Conditioners and economizers. There are tons of small businesses and a lot of opportunity. It is definitely good. It is just going to take more time to get it growing.”
- “Yes, because it works pretty smoothly.” They assess the leads right away. The program does not involve much paperwork. He wishes that program changes would occur before the agreement was signed rather than afterwards.
- “Yeah, I think it’s a weird market. Most of the contractors don’t want the small projects. There is a little misfit but it is a great program. It requires more outreach from the contractor.”

### 5.3.2 Marketing

#### *Customers - Usefulness of Marketing Materials*

Four ComEd survey participants commented that the marketing materials would be more useful if it contained more detail. They also requested a contact person to explain the program material. A Nicor Gas survey respondent said the materials would be more useful if they contained information on how to make additional changes to save energy.

#### *Trade Allies on Marketing*

Trade allies used a number of techniques to market the program to qualified ComEd and Nicor Gas joint customers. A few trade allies did cold calling in their own neighborhoods. Trade allies also looked around at nearby sites when they were on a customer call to identify other businesses that might qualify for the program.

Trade allies were also invited to quarterly education meetings. At a meeting held in May, for instance, the training centered on showing lighting trade allies how to recognize gas measures and showing mechanical trade allies how to recognize lighting measures. Nexant also encouraged trade allies to attend the Prescriptive Program training so they would be aware of how customers can qualify for other utility programs.

About half of the trade allies like the current list of measures with the addition of exterior lights and LED lighting and believe that it is complete. One trade ally said that they “have all the low hanging fruit on there”. A couple of trade allies disagree. One would like metal halide replacement fixtures to be included in the program. His company had to apply for a Standard rebate (more forms and pre-approval process) to replace six fixtures in an office they retrofitted. It would be much easier for the trade ally if these were part of the SBES program. A second trade ally would like measures for refrigeration and air conditioning included in the program. He thinks that air conditioning equipment is neglected and a complete air conditioner and furnace tune-up would significantly increase the efficiency of the units. Another trade ally would like higher incentives for LED bulb rebates.

A few trade allies provided specific requests for certain technologies including:

- Outside inductive lighting
- Energy curtains over coolers in grocery stores
- Gaskets in cooler doors in restaurants
- Two foot lamps and three foot lamps retrofits
- 125 watt metal halide to fluorescent bulbs

### *Energy Advisors on Marketing*

Energy advisors thought the marketing and promotion of the SBES program had been successful. One of the energy advisors’ goals was to help customers make an informed decision. Energy advisors reported that about one out of every three or four program participants were referred to another ComEd or Nicor Gas program.

### *Utility Program Manager on Program Delivery*

According to the program manager, few customers complained about the SBES Program. When they did complain, the issue was generally quickly resolved.

The call center staff fielded most questions about the SBES program as they were trained to do. Some calls were forwarded to the appropriate implementer.

## 5.4 TRM Recommendations

The following research findings and recommendations may assist the Illinois TRM Technical Advisory Committee annual updating process:

- The following commercial and industrial measures should be considered for addition to the TRM, in approximate order of importance:
  - C&I Gas Measures
    - Programmable thermostats
    - Space heating furnace tune-up
    - Water heater turn-down
  - C&I Electric Measures
    - Eight foot T12 fluorescent conversion to T8
    - Cold cathode lighting
    - LED exit signs
- The Illinois TRM should consider adding one or more new building types for selective use by the Small Business program, such as a “low hours-of-use miscellaneous” building type that may be used for participants with lower lighting operating hours.
- The TRM savings estimate for C&I programmable thermostats should address the diversity of baseline conditions, including program direct-install versus unverified baseline contractor/self-install and existing programmable thermostats that are confirmed as not programmed for occupied/unoccupied settings. The TRM savings value for C&I programmable thermostats should state whether or not the per-unit savings adjusts for the scenario that some portion of new thermostats may not be programmed.
- Water usage estimates for commercial faucet aerator and showerhead measures in the TRM should be based on commercial water usage research. ASHRAE is a possible data source.
- Our engineering recommendation is that the baseline for LED exit signs, cold cathode lamps, and compact fluorescents should recognize the diversity of existing commercial inefficient lighting, including long-life incandescent lamps and compact fluorescent lamps (for LED exit signs).
- The heating system tune-up measures in the TRM should re-assess the baseline condition for maintenance contracts and previous tune-ups. The current TRM baseline condition for boiler tune-ups states “The baseline condition of this measure is the facility cannot have standing maintenance contract or tune-up within the past 36 months.” Although some portion of C&I customers report having a maintenance contract or a previous tune-up in the past three years, it is not clear if the quality of reported maintenance is consistent with the TRM baseline – the reported maintenance may be less thorough and not improve efficiency to the same degree as the program-rebated measure. The current TRM baseline suggests an all-or-nothing approach to savings estimation.



## 5.5 *VDDTSR Memo-Final Version*

**To:** Scott Dimetrosky and James Jerozal, Nicor Gas  
**Copy:** Jennifer Hinman and David Brightwell, ICC  
 Randy Gunn, Julianne Meurice and Laura Agapay, Navigant  
**From:** Argene McDowell and Charles Ampong, Navigant  
**Date:** August 6, 2012  
**Re:** Verification, Due Diligence and Tracking System Review of Nicor Gas Rider 30 Small Business Energy Savings Program

This memo provides the results from Navigant’s verification and due diligence review of the quality assurance, program tracking, and savings verification procedures of the joint Nicor Gas and ComEd Small Business Energy Savings Program (SBES Program) during the Rider 30 program’s first year. Navigant reviewed application documentation for four projects comprised of a mix of no-cost direct install and capital investment measures. The verification and due diligence recommendations are based on findings from interviews with program staff and implementation contractors, project documentation review and a comparison of the SBES program activities to national best practices. The primary areas of inquiry of this task were to determine whether:

- Appropriate eligibility criteria were adhered to and applications were appropriately completed and documented;
- The QA/QC activities were adequate and unbiased (e.g., did samples meet statistical criteria, was there incorrect sampling that skewed results, etc.);
- Savings were calculated correctly compared with program assumptions;
- Project information was entered in the tracking system in an accurate and timely manner; and
- The data needed for program evaluation were thoroughly captured by the program tracking system during program year 1 (PY1).

### **Overview of Findings**

#### *Verification and Due Diligence Findings*

Navigant reviewed the SBES program documentation and information from program staff interviews to verify that the quality assurance and verification procedures put in place by the Implementation Contractor (Nexant) met many aspects of national best practices criteria. In addition to the Rider 30 Program Portfolio Operating Plan, the SBES program’s Operations Manual and the Implementation Scope of Work provided a detailed quality control and quality assurance framework. These documents clearly outline:

1. The program guidelines for customer eligibility;

2. The content of the site energy assessment used to identify no-cost direct install measures;
3. The potential for capital investment measure installation;
4. The rules for project coordination between trade allies/contractors and the customer; and
5. Onsite and post-inspection guidelines

These QA/QC measures were found to meet or exceed quality assurance expectations.

Navigant also reviewed the Application Forms, Site Energy Assessment Reports, and the Installation Agreement Forms.

1. We verified that the Application Form requires the input information necessary for a customer to enroll in the program. The form required customers to specify gas and electric utility account number, customer and contractor information, business type, and the simple payback requirement for capital investment measures. The form outlined terms and conditions for enrollment, and allowed the trade ally to calculate customer cost and the incentive payment for capital investment projects.
2. The Energy Assessment Report provided detailed energy profiles of electric and gas requirements of the customer facility and estimated energy savings and energy costs. The assessment report also provided a clear description and calculation of program incentives and customer costs, as well as the payback period for capital investment measures. Customers checked boxes to indicate which no-cost and/or capital investment measures they agreed to install and signed the Installation Agreement Form.
3. Navigant noted after reviewing the program Operating Plan and project application documents that the Implementation Contractor was performing well with the energy assessment task. For instance, Nexant staff reviewed Installation Agreements with customers to ensure they were fully informed about the services offered through the SBES program.

During review, the Navigant team noted some of the challenges Nexant faced to obtain customer consent to implement the site energy assessment recommendations. For instance, we observed in the instance of project "SBES-\_000635", the customer prevented the Implementation Contractor's Energy Advisor from installing the no-cost measures, decided to personally install the capital investment measures, and then refused to allow the Energy Advisor to inspect the facility to confirm the measures were installed. Similarly for project "SBES-\_000049", the customer had limited time for the energy assessment and did not allow the entire facility to be assessed. Navigant observed that the Installation Agreement did not match the invoice because the customer only allowed the Energy Advisor to access part of the facility during the assessment.

Customer participation and trade ally recruitment were slow at the beginning of the program year, but the numbers began increasing as the program penetrated the market. Figures from the program monthly scorecard for the end of March, 2012, indicated the SBES program had achieved roughly 59% of expected program participation and 44% of expected measure installation for no-cost or capital

investment opportunities, with 21% of realized therms savings compared to program goal. Also, the Implementation Contractor appeared to complete post inspections on time, and had completed 10% of scheduled post onsite inspections (67/669 participant enrollment) by end of March.

The program performance metric for customer and trade ally surveys were not discussed in the program Operations Manual, but figures from the March, 2012 scorecard indicated thirty-six (36) active trade allies were involved in the program. The SBES program requires all participating trade allies to provide at least three customer leads per month to avoid removal from the program. Although the program employs a ranking methodology to assess the performance of trade allies, we could not adequately verify the process and establish if trade allies were able to meet the target. We verified that ComEd funded a customer survey that included customers that received both gas and electric measures. No customer survey responses were readily available yet for review from ComEd.

The SBES program Operations Manual provides guidelines for conducting post inspections of installed measures. The Implementation Contractor is required to inspect the installation of the first three projects completed by each trade allies and 2% of all trade ally installations after that. The Implementation Contractor is required to complete 10% post-inspections of the annual project population. The Operations Manual does not adequately clarify if the 10% post inspection includes both direct install no-cost projects and capital investment projects, or whether or not trade ally inspections only account for the 10% post inspection of annual population. Furthermore, Navigant was not provided any documentation that describes how the implementation contractor's trade ally inspection process is executed.

Navigant's review of the four project files found that inspections were not performed for direct install measures or for gas capital investment measure/projects. The inspection results from project "SBES-\_000049" and project "SBES-\_000518" indicate that post-inspections were completed for lighting measures only, although customers installed other capital investment gas measures that may require inspection.

### ***Reporting and Tracking Findings***

Navigant did not get the opportunity to review inputs or the process guide to the SBES program TrakSmart tracking database system. Instead, Navigant received and reviewed the data points and data inputs from a spreadsheet database extract (spreadsheet report dated 4/2/2012) and the Nexant weekly reporting/scorecard for 3/26/2012. Navigant compared information included in the tracking database with corresponding entries in the sample project files to determine the accuracy of information documented in the tracking database.

The structure of the spreadsheet report is simple and the inputs provide clear descriptions of the installed measures, information about paid projects, and status of pipeline projects. The spreadsheet report provides records and descriptions of installed efficient measures, the timeline progression from site assessment to measure installation and project completion, and estimates customer incentives and costs. The spreadsheet also provides detailed information about the customer including the name,

address, contact number, facility/business type and email address. However, similar information is not provided for trade allies, although this information may have been tracked by the TrakSmart database system. Trade ally identification and contact information is critical for the process evaluation.

It appears key program applicant metrics, milestones and therm savings may be captured in the TrakSmart tracking database. We could not verify information about the baseline equipment state (early replacement or replace-on-burnout) or the make and model of baseline and retrofit equipment from the tracking database.

### *Summary of Recommendations*

Navigant offers the following recommendations to improve the program implementation activities, including the quality assurance and verification procedures, and to improve the data tracking system and reporting for the SBES program.

1. **Consider revision of the program Operations Manual:** the Implementation Contractor should consider including in the Operations Manual brief guidelines for installing the direct install water devices and CFLs, identify the minimum gallons per minute (GPM) eligibility standard for the water devices, and describe procedures and frequency for conducting water-flow testing during the pre-installation site survey. If these guidelines are available elsewhere (the Implementation Contractor mentioned Energy Advisor Manual), the Operations Manual should provide appropriate references to such documentation. The manual should clarify trade ally's installation inspection targets and how they tie into annual program posts inspection targets.
2. **Consider modification of the Site Energy Assessment Report:** the Site Energy Assessment Report should include information about the condition of the baseline equipment that was replaced since these are key assumptions in the savings estimation. The form should indicate the "rated" GPMs for the efficiency water devices, or some useful specs from HVAC measures. This may be provided as an appendix to avoid customer confusion.
3. **Ensure handwritten notes are legible:** the Implementation Contractor should ensure additional handwritten notes on Energy Assessment Reports or Installation Agreement Forms are easy to read, particularly when the scope of work changes and the installation agreement needs to be modified with new measures and quantities. This is important to avoid any possibility of tracking data entry errors (e.g., handwritten notes were difficult to read in the Installation Agreement Form for project SBES-\_000044).
4. **Ensure installation Agreement Form is complete and dated, and establish a process for trade allies to confirm the scope of the revised Installation Agreement when a change is made:** Navigant observed some Installation Agreements were not dated or completed to confirm customer approval of the selected installation measures. To the extent possible, customers should be required to provide completed, marked, signed, and dated Installation Agreement Forms to verify which measures they consented to install.

In addition, although the Implementation Contractor strives to minimize paperwork and relies on invoices to verify savings and costs, Navigant suggests this process does not provide enough quality control of the work completed by the trade ally when the original Installation Agreement is modified. Customers should be required to sign next to or initial any changes to the original Installation Agreement. Then the Operations Manual should be revised to clarify what the new practice is when a work order changes.

5. **Ensure only Implementation Contractor technical staff or trade allies perform installations:** Energy Advisors should not allow customer installation of the no-cost measures even if the customer drops out of the program. In the case of project “SBES-\_000635”, after the Energy Advisor allowed the customer to install the measures, he was not allowed to visually inspect and verify the installation. Energy savings claims for this project could be rejected.
6. **Complete post inspection for both gas and lighting capital investment installation:** the Implementation Contractor should consider post inspection of both contractor-installed gas and lighting installations, but not only lighting measures as we observed with projects “SBES-\_000049” and “SBES-\_000518”. The Operations Manual should clarify if only capital investment measures require post inspection, or including direct install measures, and whether the 10% post inspection requirement is based on trade allies installations only or included any direct install inspections.
7. **Conduct random sampling of capital investment projects for post installation inspection:** the Operations Manual indicates post-inspections of 10% of all completed projects could be random or manual selection at the discretion of the Implementation Contractor. At a minimum, Navigant would expect the samples to be selected randomly from those projects requiring inspection, unless the program’s Operations Manual clarifies the objective of manual selection.
8. **Develop a simplified Access or Spreadsheet database format that serves program evaluation efforts:** if the TrakSmart database system contains all the missing fields discussed above and others, then a centralized database in Access or Excel Spreadsheet format that shows all the inputs to the TrakSmart database system could be developed that would provide easy access to the program evaluation team and program staff.
9. **Develop data dictionary and process guide to the tracking database:** the Implementation Contractor should provide a data dictionary or process guide for the TrakSmart Data Management system. This guide will enable the evaluation team and program staff to learn the process for creating customer accounts, setting up a project file, and recording project information, and what QC activities are pursued before the completion of every project data entry.
10. **Consider including additional information in the tracking system:** the Implementation Contractor can improve on the data input to the spreadsheet tracking reporting, including the information listed below. If these are tracked in the TrakSmart, they should be made available for PY1 evaluation review:
  - Complete addresses, telephone numbers and email addresses for trade allies
  - Baseline equipment conditions/efficiency (if tracked)

- The retrofit equipment brand and model specifications
  - Post installation inspection findings documented in field inspection checklist
  - Indication of referrals from the Multi-family program’s central plant survey
  - Invoice numbers from capital investment projects
11. Ensure accurate and complete tracking of project information: the Implementation Contractor should ensure complete and accurate transfer of customer application information into the tracking system. Navigant noticed project “SBES-\_000049” Installation Agreement showed the customer signed a capital investment agreement to implement a boiler reset control measure, but no record of the installation was found. The invoice and the tracking system report showed that a boiler tune-up was performed instead of a boiler reset control measure.
  12. Clarify special cases of installing water devices as part of capital investment: The Navigant team identified over 20 projects in the 5/31/2012 tracking spreadsheet report where it appears customers installed kitchen and bathroom aerators as part of capital investment installations, and both customer and trade ally received incentives. It is not clear if the program requirements allow installation of water devices as part of the capital investment measures. Navigant recommends the Implementation Contractor should include additional notes in the Operations Manual or tracking system for clarification of special cases.

## Data Collection

Navigant collected data for this verification and due diligence task through interviews with program implementation staff and the review of program documentation covering the period from April through June 2012. Navigant’s findings and recommendations were based on the following:

- Review program documentation (Application Forms, Operations Manual, etc.)
- Desk review of project files
- Review marketing and outreach efforts
- Review program operating procedures
- Review program tracking system
- Compare program activities and materials to national best practices

## Review Program Documentation

The program documentation reviewed by Navigant included the Rider 30 program’s Operating Plan<sup>43</sup>, Implementation Scope of Work<sup>44</sup>, Nicor Gas Compliance Filling<sup>45</sup>, and the SBES program Operations

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<sup>43</sup> Nicor Gas Rider 30 EEP Program Portfolio Operating Plan (Version 1.1)

<sup>44</sup> Small\_Business\_Energy\_Efficiency\_Services\_SOW\_Nicor\_WECC\_Final Rev 11 070811.docx

<sup>45</sup> Nicor Gas EEP 2011-2014 Revised Plan Filed Pursuant to Order Docket No. 10-0562 (May 24, 2011)

Manual<sup>46</sup>. Other documents that were reviewed included spreadsheet reports from the program tracking database (extract from 4/2/2012), Application Forms, Site Energy Assessment Reports, Installation Agreement Forms, and Post Installation Inspection Forms. The program’s Operations Manual clearly described the program logic and key performance indicators, and provided detailed QA/QC procedures and program guidelines for verifying customer eligibility, reviewing site energy assessment reports, installing customer approved measures, and conducting post installation inspections. The program weekly reporting highlighted program performance to date, including savings, participation and marketing issues. Marketing and outreach documents reviewed included SBES program marketing plan<sup>47</sup>, newsletters and marketing fact sheets.

### *Desk Review Projects Files*

To provide early feedback, Navigant’s evaluation team selected four SBES projects provided by the Implementation Contractor for the initial project file review. Additional project files will be reviewed later, up to a total of twelve, and further verification will be done by telephone. This selection was not intended to be based on sampling of the overall population. Projects selected included two projects with no-cost direct install measures (projects SBES-000044 and SBES-000635), and two projects with low-cost capital investment measures (projects SBES-000049 and SBES-000518). Navigant found that the project documentation files were complete and included:

1. Completed and signed Application Forms
2. Project Overview documents,
3. Site Energy Assessment Reports,
4. Installation Agreement Forms,
5. Measure specifications for the capital investment measures
6. Itemized invoices
7. Post installation inspection checklists

Navigant reviewed the savings calculation approaches included in the project files and compared entries in the project files to corresponding entries in the program tracking database for accuracy and completeness.

Navigant noticed during the project file review that project “SBES-000635” was an atypical case. The customer prevented the Implementation Contractor’s Energy Advisor from installing the no-cost measures, personally installed the capital investment measures and then refused to allow the Energy Advisor to inspect the facility to confirm the measures were installed. It is not clear if the measures were actually installed, but the savings were claimed.

Similarly for project “SBES-000049”, the customer had a limited time for the energy assessment and did not allow the entire facility to be assessed. The Installation Agreement did not match the invoice because the customer only allowed the Energy Advisor to inspect part of the facility during the

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<sup>46</sup> ComEd-Nicor SBES Program Manual - Nexant Draft DIH edit 042712.docx (Version 1, June, 2011)

<sup>47</sup> ComEd/Nicor Gas: Small Business Energy Savings Marketing Plan (June, 2011)

assessment. The trade ally and the Energy Advisor later visually inspected the additional areas of the facility and obtained customer approval to proceed with the full project. Navigant notes that visual inspection without the full energy assessment may not provide accurate energy profile of the facility, and lack of better understanding of estimated potential energy savings and energy costs. For this project, the record in the Installation Agreement Form (shows about 50 measures) did not match with the invoice and records in the tracking database (both have 300 measures). It appears that a boiler tune up measure was installed instead, although the customer had initially agreed to install boiler reset control measures.

We noticed that for the projects with capital investment opportunities (SBES-000049 and SBES-000518) equipment specifications were provided for lighting measures but not for HVAC or other gas measures. It appears onsite inspections were focused on lighting measures although the customer installed both lighting and gas measures. Customers were not adequately required to sign and date the Installation Agreement forms, as was observed in the case for projects “SBES-000044” and “SBES-000635”.

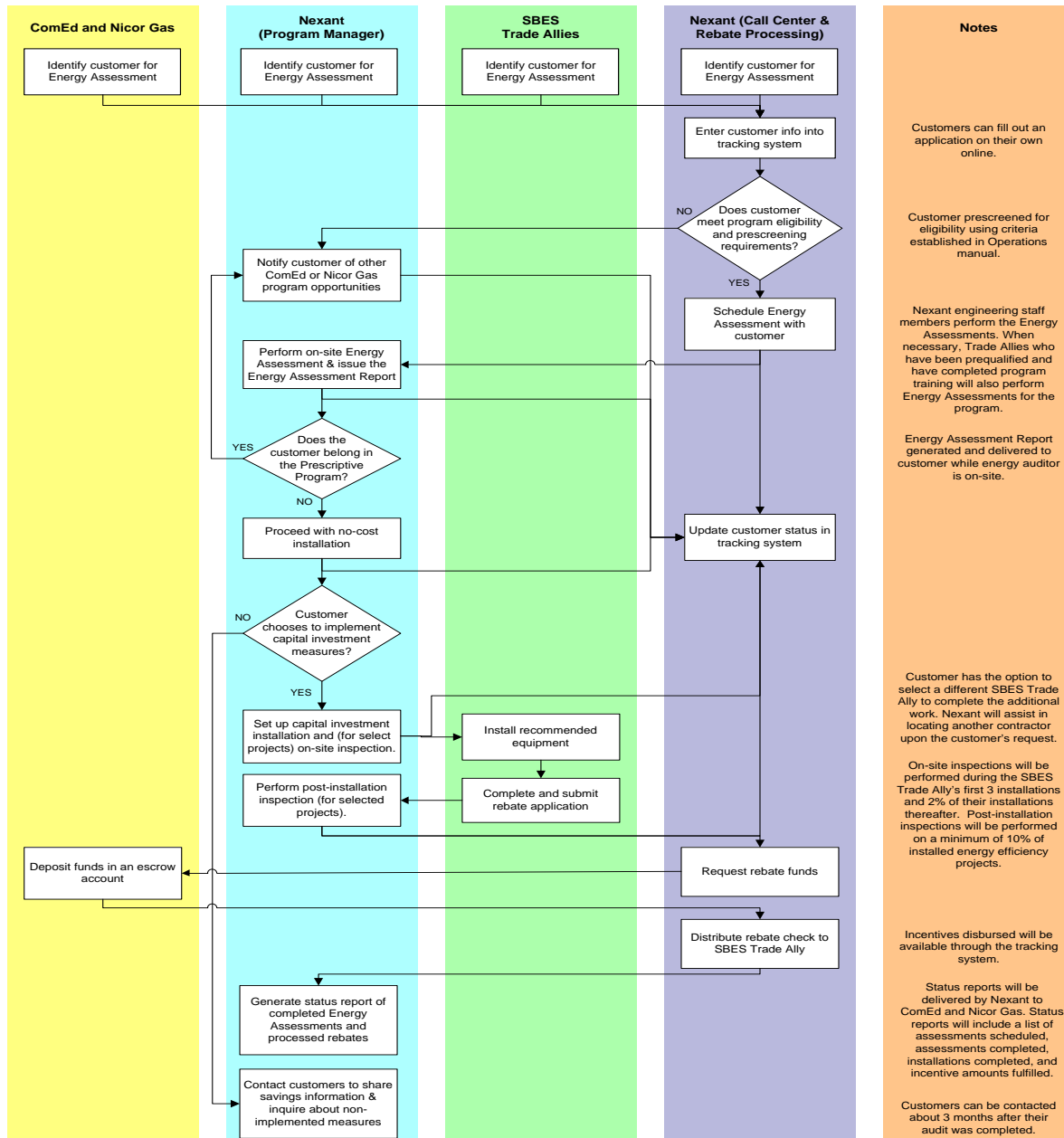
### **Review of Program Operating Procedures and Tracking System**

Navigant examined the SBES program’s operating procedures as outlined in the program Operations Manual. Below is the SBES program customer process flow. Navigant identified the following as key elements leading to final project approval and incentive payment.

1. Application Submittal and Pre-Inspection
2. Installation
3. Final Application and Incentive Approval
4. Inspection and Verification
5. Customer Service, Invoicing and Reporting



Figure 5-3. SBES Customer Process Flow



SBES Program Customer Process Flow (Source: Nicor Gas SBES Program Operations Manual, June, 2012)

### Application Submittal and Pre-Inspection

Through the SBES program outreach efforts, Nexant receive applications from trade allies and referrals from other program offerings. Some customers inquire about the SBES program and submit their own application. Project applications may be completed by the facility owner or representative such as a trade ally and submitted to Nexant. Nexant administrative support staff review the application to ensure that the information is complete and confirm the applicant is a Nicor Gas and ComEd customer. Once an application is accepted, the administrative support staff schedules the

energy assessment with the customer. The Energy Advisor's primary objective during the energy assessment is to document existing equipment and to identify opportunities for capital investment improvements. This task includes recording all nameplate information and equipment counts (type of lighting fixtures, quantity of fixtures, type and quantity of non-programmable thermostats, HVAC equipment etc.); interviewing the contact person about equipment operating schedules; and using the assessment tool to calculate the kWh, therms, and dollars potentially saved by the capital investment improvements.

After the energy assessment is complete, the Energy Advisor uses the Energy Assessment Tool to calculate the energy and cost savings and the estimated value of the installed products. An Energy Assessment Report is generated that profiles the electric and gas requirements of the customer's facility and provides estimates of energy savings and energy costs. The assessment report also provides a clear description and calculation of program incentives and customer costs, as well as the payback period for the capital investment measures. The Energy Advisor prints the assessment report and reviews the findings with the customer, explains the calculated savings, the payback of suggested products and the benefits that the SBES program equipment offered. If the customer agrees to have any of the products or improvements installed, the Energy Advisor selects the measures within the tool and prints the Installation Agreement Forms for the customer to sign. During the site visit, the Energy Advisor might also complete an assessment of the common area of the premises and suggest other lighting or heating efficiency improvements that could be rebated through the Business Prescriptive or Multi-family Programs.

### *Installation*

With the customer's approval, the Energy Advisor provides no-cost direct installation of energy-saving faucet aerators, showerheads, pre-rinse sprayers, and CFL bulbs during the assessment visit. If the customer chooses to install any of the recommended low-cost measures at pre-negotiated prices subsidized by the SBES program, he is randomly assigned an SBES vetted trade ally or he is assigned to the trade ally who influenced him to participate in the program. The customer has up to thirty days to respond to the offer. After installation, the trade ally submits all required documentation to Nexant. These documents may include an updated scope of the work performed, recycling documentation, invoices, and photos of the work. The trade ally invoices the remainder of the costs not rebated by the utilities to the customer. The project installation data is then processed into the program tracking system by Nexant staff.

### *Incentive Approval*

Two work orders are potentially recorded for each project: one work order for the no-cost direct install measures and one for the recommended capital investment low-cost measures. After installation of the direct install measures, Nexant staff checks the application for completeness by verifying the installed low-cost equipment specifications, reviewing the itemized contractor invoices or proof of purchase receipts, reviewing the accuracy of the estimated energy savings and incentives, and confirming the application was in compliance with the program rules. If the customer qualifies for the incentive,



Nexant sends an approval letter and fund allocation notice to the trade ally or contractor and authorizes the incentive check.

### *Inspection and Verification*

The post installation activities involve ensuring that the QA/QC requirements for onsite inspections outlined in the program's Operations Manual were implemented. QA/QC checks involved any customer or business manager follow-up after an installation to verify the customer's satisfaction with the work and to ensure that all devices are installed and operating. Energy Advisors usually inspect their own assessment sites. They complete the Project Verification Report (PVR) checklist at the inspection site and record any discrepancies in equipment parameters and installation characteristics. They also verify any adjusted savings estimates, review on-site notes, record reasons for discrepancies and report related information on contractor installation quality. The Implementation Contractor is required to perform post inspection and verification for 10% of all installations. Energy Advisors are generally present and observing during the first three installations of newly approved trade allies and inspect 2% of all projects after the trade ally's final qualification into the program.

### *Customer Service, Invoicing and Reporting*

In the event that a customer is dissatisfied or has an issue with program staff or delivery, the Implementation Contractor uses a complaint resolution process to address the cause of the customer's dissatisfaction. Complaint logs and resolutions are available on a weekly basis to the Program Managers at Nicor Gas and ComEd. The Implementation Contractor provides safety training for all staff involved in this program, particularly driving and personal safety training for Energy Advisors. Nexant invoices ComEd and Nicor Gas every week for trade ally incentives to reduce the turn-around time for trade ally payments. At the end of the month, or as requested by ComEd or Nicor Gas, Nexant estimates the accruals for all expenses and reports to ComEd and Nicor Gas. Nexant tracks estimated invoicing in the program tracking spreadsheet to inform ComEd and Nicor Gas about program finances.

### *Tracking System Review*

The next step in the due diligence evaluation is for Navigant to review the data fields and data inputs to the SBES program tracking database (spreadsheet format dated 4/2/2012) and the Nexant weekly reporting/scorecard (dated for 3/26/2012). All information collected and recorded during the field installation is transferred to Nicor Gas and ComEd weekly via automated transfer. ComEd's automated transfer process is approved and functional, but it appears that Nicor Gas' automated transfer process is in progress pending the completion of the TrakSmart data management system. In the interim, Nexant developed a reporting spreadsheet tool to submit weekly reports to Nicor Gas' and ComEd's program managers. Navigant was not able to review the content of the TrakSmart system and compare it with the data points and structure of the current reporting spreadsheet tool. The weekly reporting tool is an Excel spreadsheet format with different worksheets for the no-cost projects, capital investment projects and a worksheet of information about participating trade allies.

The Implementation Contractor informed Navigant that the TrakSmart Database Management System is a centralized data management system, and it is able to perform routine functions like report creation and financial reporting. Since Navigant did not have the opportunity to review the inputs to the TrakSmart system, the evaluation team could only comment on the inputs in the spreadsheet tracking report made available to the program evaluation team. The spreadsheet tracking report provided by Nexant does not contain information about the baseline equipment condition or the make and model of baseline and retrofit equipment. The Implementation Contractor mentioned that customer leads or Central Plant Survey referrals from Honeywell are kept in separate database, but this was not available to the evaluation team for review. Contact information for the participating trade allies (address, telephone number and/or email address) may be tracked in the TrakSmart system, but this was not included in the spreadsheet report.

### Benchmarking

To conduct the best practices benchmarking assessment, the evaluation team compared the Implementation Contractor’s practices (shown as a bullet list) with the *Best Practices Self-Benchmarking Tool*<sup>48</sup> from the *National Energy Efficiency Best Practices Study* (numbered items in *italic* font) for C&I programs. The benchmarking categories used were Quality Control and Verification, and Reporting and Tracking.

**Table 5-11. Comparison of Implementation Contractor Practices to Best Practices Tool**

ID	Best Practice	Score
1	Assure quality of product through independent testing procedures	Meets best practice.
2	Use measure product specification in program requirements and guidelines.	Needs some improvement.
3	Use incremental costs to benchmark and limit payments, and set an incentive strategy to maximize net not gross program impacts.	Meets best practice
4	Develop inspection and verification procedures during the program design phase.	Needs some improvement.
5	Implement a contractor screening/certification/training process.	Meets best practice
6	Conduct an Independent audit for pre- or post-installation inspections.	Needs some improvement.
7	Always inspect the first job submitted by a new vendor or Contractor	Meets best practice
8	Build in statistical features to the sampling protocol to allow a reduction in the number of required inspections based on observed performance and demonstrated quality of work.	Needs some improvement.
9	Tie staff performance to independently verified results.	Meets best practice
10	Assess customer satisfaction with the product through evaluation.	Meets best practice

<sup>48</sup> See the Best Practices Self-Benchmarking Tool developed for the Energy Efficiency Best Practices Project: <http://www.eebestpractices.com/benchmarking.asp>

### *Quality Control and Verification*

1. *Assure quality of product through independent testing procedures.*
  - The program provides equipment (e.g. showerheads, CFLs and faucet aerators) that meet or exceeded product quality standards through various standards and certifications for such equipment.
  - The SBES program verifies that low-cost measures meet the prescribed efficiency standards using third-party databases (i.e. ENERGY STAR, GAMA, and AHRI) and laboratory testing.
2. *Use measure product specification in program requirements and guidelines.*
  - The SBES direct install program does not use product specifications to establish eligibility, but requires one-to-one replacement of existing devices with the new low-flow water devices. CFL bulbs are installed to replace existing incandescent bulbs.
  - The program's Operations Manual and the Portfolio Operating Plan outline the eligible small business energy conservation measures and the qualifying efficiency standards.
3. *Use incremental costs to benchmark and limit payments, and set an incentive strategy to maximize net not gross program impacts.*
  - For the low cost measures, payments and rebate formulas are tied to measure incremental costs. The incentive strategy for all measures considers the likely level of free-ridership and seeks to maximize net savings.
4. *Develop inspection and verification procedures during the program design phase.*
  - Procedures for inspection and verification are detailed in the program Operations Manual. Standardized inspection forms were designed and used.
  - The Implementation Contractor appears to inspect only lighting measures and excludes capital investment gas measures. Navigant recommends that the post inspection for capital investment projects should include all electric and gas measures. The program Operations Manual should clarify if the 10% post inspection requirement includes any direct install measures or only capital investment measures.
5. *Implement a contractor screening/certification/training process.*
  - The SBES program utilizes Nexant staff to:
    - inform and recruit participating trade allies

- organize orientation meetings and conduct in-person visits
  - train and equip trade allies to communicate program information to customers.
- Current trade ally participation has been impressive. Active recruiting has stopped but any trade ally seeking to join the program will be considered for acceptance.
6. *Conduct an independent audit for pre- or post-installation inspections.*
    - The SBES Implementation Contractor has a goal to inspect 10% of all small business retrofit projects completed to verify installation and to match model and serial numbers with those provided on the incentive claim. It appears the Implementation Contractor is on track to complete the required 10% onsite inspections goal if inspections continue to keep pace with installations (67 inspections out of 669 completed assessments by end of March, 2012).
    - The post inspection task was conducted by the Implementation Contractor's Energy Advisors in PY1. Although, the Implementation Contractor mentioned that the Energy Advisors are independent to inspect the capital investment installations from trade allies. Navigant recommends, in the future, the Implementation Contractor should consider subcontracting the post inspection task as part of additional program QA/QC strategy (similar to what is implemented in the case of the Rider 30 Business Prescriptive Rebate program).
  7. *Always inspect the first job submitted by a new vendor or Contractor*
    - The SBES Implementation Contractor is required to perform on-site inspections during the first three installations of newly approved trade allies and 2% of all inspections after that. The program Operations Manual should clarify how this process is accomplished by the Implementation Contractor.
  8. *Build in statistical features to the sampling protocol to allow a reduction in the number of required inspections based on observed performance and demonstrated quality of work.*
    - According to the SBES program Operations Manual, sampling of trade ally installations for post inspection may be random or manual. Navigant would expect all the samples to be selected randomly from those projects requiring inspection, unless the program's Operations Manual clarifies the objective for manual selection.
  9. *Tie staff performance to independently verified results.*
    - The Implementation Contractor's performance is based on the program evaluator's independently verified results.
  10. *Assess customer satisfaction with the product through evaluation.*

- Navigant is conducting a process and impact evaluation for the SBES program. Navigant’s process evaluation efforts will estimate customer satisfaction with the SBES program.

**Table 5-12. Comparison of IC Reporting and Tracking Practices to Best Practices Tool**

ID	Best Practice	Score
1	Define and identify key information needed to track and report early in the program development process	Needs some improvement.
2	Use automated or otherwise regularly scheduled notification to achieve close monitoring and management of project progress.	Meets best practice
3	Design program tracking system to support the requirements of evaluators as well as program staff.	Needs some improvement.
4	Set reasonable and accurate expectations for energy savings and measure performance	Meets best practice
5	Integrate or link with other appropriate systems such as cross-program databases, customer information systems (CIS) and marketing or customer relationship management (CRM) systems	Needs significant improvement.
6	Verify accuracy of invoices to ensure the reporting system is recording actual product installations by target market.	Needs some improvement.

### *Reporting and Tracking Benchmarking*

1. *Define and identify key information needed to track and report early in the program development process*
  - The SBES program data requirements are defined early in the program development process and are tracked in the program tracking database. This memo is one step in the process of identifying key information. All the inputs into the TrakSmart tracking system were not available to Navigant to verify if all key program metrics are adequately tracked.
2. *Use automated or otherwise regularly scheduled notification to achieve close monitoring and management of project progress.*
  - The Implementation Contractor reports weekly to Nicor Gas on all projects. These reports are not automatically generated. The report highlights potential and realized energy savings and summarizes program key performance indicators, application changes and marketing challenges.
3. *Design program tracking system to support the requirements of evaluators as well as program staff.*
  - The Implementation Contractor indicates the TrakSmart tracking system is fully electronic and allows real-time reporting of routine functions like monthly portfolio and program reporting and financial tracking.

- The spreadsheet report provided by the Implementation Contractor to Navigant contained customer/trade ally and impact data. This data enables the Implementation Contractor and the evaluation team to track the timeline of each project and pinpoint important milestones in the process. The Implementation Contractor could do more. If all the missing data fields in the spreadsheet extract (indicated above in the summary recommendations) exist in the main TrakSmart database system, then a more complete Access or Excel file showing all the inputs to the TrakSmart database system could be extracted. This step would give the evaluation team access to evaluate the entire database.
4. *Set reasonable and accurate expectations for energy savings and measure performance*
    - The Implementation Contractor meets with potential participants before program participation to discuss their expectations for energy and bill savings. The site energy assessment tool provides estimated savings to the customer during the initial site energy assessment.
  5. *Integrate or link with other appropriate systems such as cross-program databases, customer information systems (CIS) and marketing or customer relationship management (CRM) systems*
    - It appears key program applicant metrics, milestones and therm savings are captured in the TrakSmart tracking database. But the Implementation contractor mentioned to Navigant that the TrakSmart tracking system did not integrate or link with other appropriate databases such as customer and trade ally survey feedback, marketing and outreach information, complaint logging, leads or common area referral database. Navigant suggests linking up these files or submitting all these data for review would streamline the evaluation efforts.
  6. *Verify accuracy of invoices to ensure the reporting system is recording actual product installations by target market.*
    - Customers or contractors are required, as part of the SBES program terms and conditions, to submit copies of all invoices or other reasonable documentation of the costs associated with purchasing the qualified equipment. As part of the application review process, program staff compares invoices and purchase orders to the application information to verify measure installation. Incentives are paid only after the Implementation Contractor verifies the invoices are genuine and that all equipment meets the program requirements.
    - The Implementation Contractor strives to minimize paperwork and relies on invoices to verify final project savings and costs. Navigant suggests this process does not provide enough quality control of the work completed by the trade ally. Customers should be required to sign next to or initial any changes to the original installation agreement. Then the Operations Manual should be revised to clarify what the new practice is when a work order changes.



## 5.6 *Program Theory Logic Model Review*

### **Small Business Energy Savings Program Theory**

Program theory is essentially a structured description of the various elements of a program's design: goals, motivating conditions/barriers, target audience, desired actions/behaviors, strategies/rationale, and messages/communications vehicles. The following subsections describe the Nicor Gas Small Business Energy Savings (SBES) program in these terms.

### **Program Goals**

The main goal of the SBES Program is to produce long-term natural gas savings in the small commercial/industrial sector by ensuring that customers receive the education and assistance they require to make cost-effective decisions in their installation of high-efficiency gas saving equipment and other targeted prescriptive cost-effective measures.

### **Motivating Conditions**

The program is designed to achieve energy savings goals by educating Nicor Gas non-residential customers about natural gas savings opportunities through on-site surveys, and to achieve immediate savings by providing direct installation of specific **products and incentives for select natural gas energy efficiency measures**.

### **Target Audience**

The target market for this program will be those Nicor Gas commercial/industrial customers using under 60,000 therms of gas annually. Customers most likely to be approved to participate in the program and realize the biggest savings include those with:

- Long building operational hours (e.g., 10 hours or more Monday through Friday and/or operation on weekends)
- Facilities built prior to 2007
- Facilities that were originally built for a different end-use

### **Desired Actions/Behaviors**

The program seeks to change contractors' audit practices, increase small business facility performance through several measure updates, and increase the number of assessments occurring in Nicor Gas's service territory. Trade allies will market the program to interested and potential program participants and will deliver audit and direct installation services to small business customers.

### **Strategies/Rationale**

The plan is to use customer education as a primary tool to stimulate action toward installing the recommended measures or to steer customers to other Nicor Gas programs, if appropriate. Relationships with trade allies are a key strategy for the successful delivery of the SBES program to small customers as incentives are paid directly to the trade allies. Product and installation fees are negotiated with Nicor Gas for each measure. The customer is invoiced for the remaining cost of the installed measures by the contractor.

### **Messages/Communications Vehicles**

To solicit small business customer participation, the program implementation contractor, Nexant, designed a marketing program that in PY1 included the following activities:

- Worked with approved trade allies who performed door-to-door marketing and customer recruitment.
- Recruited trade allies to cooperate with local community organizations who helped facilitate outreach activities, educational opportunities, and on-site visits as part of a program awareness campaign.
- Offered program fact sheets at customer events, presentations, Chamber of Commerce meetings, festivals, and industry group meetings.
- Utilized traditional marketing efforts, e.g., direct mail.
- Left bi-fold brochure with customers for review.

During PY2, Nexant will use a more targeted approach to reach small business customers. The Energy Advisors will work directly with trade allies to reach customers in a geographically targeted area. The Energy Advisors plan to enter a neighborhood and market the program door-to-door. This approach is currently in a trial mode in selected communities.

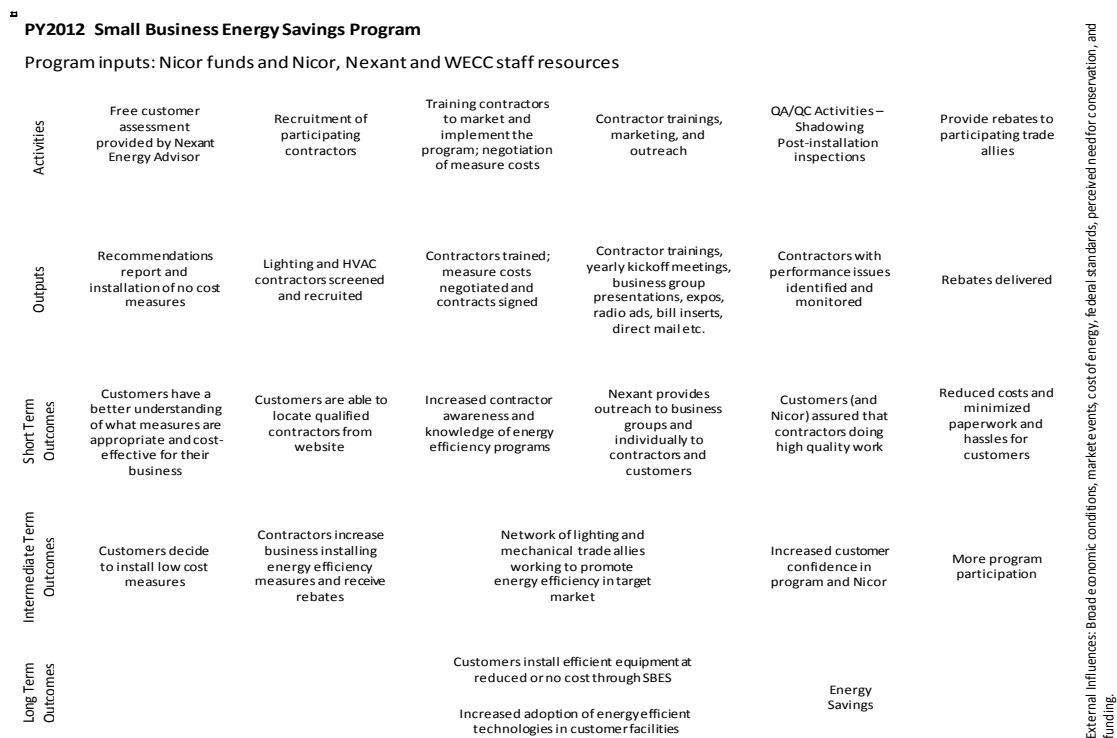
The Implementer encourages the electric and gas trade allies to partner with each other so the customer can get the full benefit from the program. Nicor Gas and ComEd provide trade allies in the program with collateral material that can be used for cooperative advertising for the program.

In addition, Nicor Gas provides program support by umbrella marketing of the programs in conjunction with ComEd including a few television spots.

### **Program Logic**

The following section describes how the Small Business Energy Savings program activities lead to achieving the program energy savings goals. Figure 5-4 presents the program logic model diagram showing the linkages between activities, outputs and outcomes, and identifying potential external influences. The diagram presents the key features of the program.

**Figure 5-4. Small Business Energy Savings Program Logic Model**



**Resources**

The program budget supports the marketing, training, education, promotion, and quality assurance activities of the program implementation contractor, Nexant, to develop a community of contractors committed to using efficient business energy audit practices. The budget also supports marketing and education for small business owners in the Nicor Gas/ComEd service area.

Various promotional resources for advertising and promotions are included, and resources for program administration include program database management. The budget also supports program incentives paid directly to the contractors per their negotiated contract.

There are also external influences that can help or hinder achieving anticipated outcomes. Key program inputs and potential external influences are shown in Table 5-14.

**Table 5-13. Program Inputs and Potential External Influences**

<b>Program Inputs</b>
<ul style="list-style-type: none"> <li>• Nicor Gas/ComEd ratepayer funds</li> <li>• Nicor Gas/ComEd and WECC staff resources, knowledge and experience managing the program</li> <li>• Nexant’s staff resources and experience implementing the program</li> </ul>
<b>External Influences and Other Factors</b>
<ul style="list-style-type: none"> <li>• Attitudes and marketing efforts of trade allies</li> <li>• Economic conditions</li> <li>• Weather conditions</li> <li>• Availability of financing/capital</li> <li>• Other energy efficiency programs</li> </ul>

**Outputs, Outcomes and Key Measurement Indicators**

The following section distinguishes between outputs and outcomes. In this document, outputs are defined as the immediate results from specific program activities. Examples for this program would be the number of contractors signing contracts to market the program to small business customers to perform energy assessments or the number of small businesses receiving energy assessments.

Outcomes are distinguished from outputs by their less direct (and often harder to quantify) results from specific program activities. Outcomes represent anticipated impacts associated with Nicor Gas’ program activities and will vary depending on such factors as the ability of small business customers to make capital investments as affected by broader economic conditions. Program activities will lead to immediate outputs that, if successful, will collectively work toward achievement of anticipated intermediate and ultimate program outcomes.

The following tables list outputs (Table 5-14.) and outcomes (Table 5-15.). For each indicator, a proposed data source or collection approach is presented.

**Table 5-14. Program Outputs, Key Performance Indicator and Potential Data Sources**

Outputs	Indicators	Data Sources and Potential Collection Approaches
Recommendations report and installation of no-cost measures	Number of energy assessments conducted by energy advisors	Interviews with energy advisors; program tracking data
Lighting and HVAC contractors screened and recruited	Number of participating contractors	Program tracking data; interviews with program staff
Contractors trained; measure costs negotiated and contracts signed	Number of participating contractors; number of contracts signed	Program tracking data
Contractor trainings, yearly kickoff meetings, business group presentations, expos, radio ads, bill inserts, direct mail etc.	Number of contractors attending trainings; number of group presentations; number of ads, bill inserts, direct mail pieces delivered	Marketing/communication records; interviews with program staff and contractors
Contractors with performance issues identified and monitored	Number of contractors warned or dropped from program	Program tracking data

**Table 5-15. Program Outcomes, Key Performance Indicators and Potential Data Sources**

Outcomes	Key Performance Indicators	Data Sources and Potential Collection Approaches
<b>Immediate Term Outcomes</b>		
Customers have a better understanding of what measures are appropriate and cost-effective for their business	Number of small business customers participating in the program	Program tracking data
Customers are able to locate qualified contractors from website	Trade ally familiarity with energy efficient equipment in their area of expertise	Participating contractor interviews
Increased contractor awareness and knowledge of energy efficiency programs	Number of small business customers participating in other Nicor programs	Program tracking data
Nexant provides outreach to business groups and individually to contractors and customers	Number of meetings with business groups, contractors and trade allies	Program tracking data
Customers (and Nicor) assured that contractors doing high quality work	Number of shadowing or post-inspections with quality concerns, number of customer complaints about program; customer satisfaction with contractors	Program tracking data; customer survey
Reduced costs and minimized paperwork and hassles for customers	Customer satisfaction with the program	Customer survey
<b>Intermediate Term Outcomes</b>		
Customers decide to install low cost measures	Increased program participation	Program tracking data
Contractors increase business installing energy efficiency measures and receive rebates	Increase contractor satisfaction with the program; contractors hire more staff	Contractor interviews
Network of lighting and mechanical trade allies working to promote energy efficiency in target market	Increased program participation; increased number of active contractors	Program tracking data
Increased customer confidence in program and Nicor	High customer satisfaction scores with the SBES Program and with Nicor	Customer survey
More program participation	Number of small business customers installing low cost measures	Program tracking data
<b>Ultimate Outcomes</b>		
Customers install efficient equipment at reduced or no cost through SBES	Number of measures installed by participating measures	Program tracking data
Increased adoption of energy efficient technologies in customer facilities	Increase in program participation and spillover	Program tracking data; customer survey
Energy savings	Verified kW and kWh savings	Program tracking data, engineering review of savings algorithms

## 5.7 Data Collection Instruments

### 5.7.1 Nicor Gas Program Staff and Implementer In-Depth Interviewer Guide

## Nicor Gas Evaluation

### Program Staff and Implementer In-Depth Interview Guide (Interviews to be Conducted Separately)

April 17, 2012

Name of Interviewee: \_\_\_\_\_ Date: \_\_\_\_\_

Title: \_\_\_\_\_ Company: \_\_\_\_\_

Role in Program: \_\_\_\_\_

*[Note to Reviewer] The Interview Guide is a tool to guide process evaluation interviews with utility staff and implementation contractors. The guide helps to ensure the interviews include questions concerning the most important issues being investigated in this study. Follow-up questions are a normal part of these types of interviews. Therefore, there will be sets of questions that will be more fully explored with some individuals than with others. The depth of the exploration with any particular respondent will be guided by the role that individual played in the program's design and operation, i.e., where they have significant experiences for meaningful responses. Where possible, interview date/times will be arranged in advance. The interviews may be audio taped.*

#### Introduction

Hi, may I please speak with [NAME]?

My name is \_\_\_ and I'm calling from Navigant Consulting, we are part of the team hired to conduct an evaluation of the Nicor Gas \_\_\_\_\_ program. We're conducting interviews with program managers and key staff in order to improve our understanding of the program. At this time we are interested in asking you some questions about the Nicor Gas \_\_\_\_\_ program. The questions will only take about an hour. Is this still a good time to talk? [IF NOT, SCHEDULE A CALL BACK.]

Ok, great. [Optional: If you don't mind, I would like to do a voice recording our conversation to speed up the note taking. Is that OK? I'm going to switch you to speaker phone. I am in an enclosed, private office.]

#### Roles and Responsibilities

*[For respondents that were interviewed as part of the Rider 29 study focus questions/responses on any changes since last interview]*

1. Can you briefly summarize your role in the Nicor Gas Small Business Program: What are your main responsibilities?
2. Can you explain who is involved in the program implementation, and what their roles are? *[Probe for all significant actors with responsibility in program delivery including implementer, account managers, and program allies.]*
  - a. What is WECC responsible for? What is Nexant responsible for? Rebate Processing?
  - b. Manage Data? / Tracking Targets?
  - c. Planning and oversight
3. Roughly, how many people are assigned to work on this program? What are your near-term plans for adding staff? From your perspective, is staffing adequate for this program to meet its goal? (If not): What areas/functions do you feel are not adequately staffed?

4. What are the formal and informal communication channels between these groups (between WECC and Nexant (the implementation contractor))? Do you feel information is shared in a timely manner?
5. Are there any documents, other than what has been provided on the SharePoint site, that outline the roles and responsibilities of program staff for the program? Operations manual, policies and procedures guide? Can we get a copy?

### **Overall Goals and Objectives**

6. According to the most recent monthly report, you are [ahead/behind] on PY1 goals. Why do you think this is? Do you think you feel the PY2 goals are realistic? Why or why not?
7. Outside of the quantitative goals (e.g., \$, \$/kWh, savings and participation rates), in your own words, what are the key goals and objectives of this program?

### **Marketing and Promotion**

8. Please describe your program marketing campaign in your own words. What are the marketing channels that are used? (bill inserts, TV, newspaper, radio, workshops, community events?)
  - a. How often does each activity occur?
  - b. Who is in charge of developing materials?
  - c. Who is in charge of marketing activities?
  - d. Do you have a written marketing plan?
9. Do you anticipate making any changes to marketing efforts for Program Year 2 (starting June 1 2013)? If so, please describe these changes.

### **Trade Allies**

10. Could you talk a bit about the program efforts that specifically target trade allies?
11. Is there one staff member that oversees the program trade ally network? Or staff that specialize in different equipment markets? Lighting, HVAC, Motors, etc.?
12. How are trade allies recruited for the program(s)? Which types of trade allies are choosing to participate in the program(s) and which are not?
13. Do you have a sense of trade allies' satisfaction with their participation in the trade ally program?
14. What kind of training is provided to them as part of the registration process? What role do they have in marketing the program(s)? What kind of support, if any, is provided to them for marketing the program(s) to their customers?
15. Have allies requested any other types of support/collateral, etc. If so, what have they requested and how are you responding to their requests?
16. Are there any quality control procedures in place for trade allies? What is done if a complaint is received, for example? Are there any situations where they would be dropped from the program for poor performance?

### **Program Participation**

We are also trying to learn of any process related issues that may arise from the current design of the program(s).

17. Have you received any feedback from customers on various aspects of the program?



18. What do customers do if they have questions about the participation process? Is there a systematic process in place for responding to customer inquiries? How quickly are their questions answered? What improvements can be made?
19. What is the target review time between receipt of the pre-approval application and letter of approval? What is the average review time? What, if anything, slows down review time?
20. Is there a process in place for communicating to customers the status of their application? Is there any system in place to track project progress? If so, please describe.
21. What is the target processing time between final documentation and payment? What percent of applications are actually processed within that amount of time? What, if anything, slows down processing time?

**Incentives**

22. What do you perceive to be the level of satisfaction among program participants with the current incentive amounts for the low cost measures?
23. How do trade allies perceive the incentive levels for the low cost measures? What specific feedback have they given? Have you heard any feedback from trade allies about the percent of total project cost caps, and if so, what have you heard?

**Call Center**

24. Are customers/contractors making use of the phone number to program staff listed on the application form? [Probe for call volume.] What are the main issues raised by customers/contractors?

**Data Tracking**

25. What systems are in place for data tracking? Who captures the data and how? Can you briefly describe what data are tracked for the program(s)? What about application attachments and calculations? What about review history and revisions to savings or incentive amount?
26. Do you feel all important information is captured and stored in a way to best support program efforts? Is the information accurate and current? Are there additional types of reports or information that you would find beneficial? Is there a process for requesting additional data?

**Quality Assurance and Quality Control (WECC and the IC)**

27. Is there any additional documentation, other than what you have provided on the SharePoint site, that describes the quality assurance procedures? If so, can we obtain a copy?
28. Can you provide a brief description of your quality procedures? What kind of quality procedures are in place to verify equipment quantities and eligibility? Project completion? What is the process for verifying savings?
29. Approximately, what percentage of all projects is pre-inspected and post-inspected? How do you determine if a project requires inspection (both pre and post)?
30. Who conducts pre and post inspections and how are they documented? Do they use standardized data collection forms? How can we arrange to obtain these documents?
31. When are on-site measurements conducted as part of the pre and post verification? Which measures and business types?

**Program Adjustments and Enhancements**

32. From your experience to date, are there elements in design, structure, and/or operation that should be modified to make the program(s) work better? If so, what would you recommend? Why do you think this change is needed?
33. Do you feel that free-ridership is a major concern for the program(s)? [Please explain.]



34. Do you see this program is leading participants to undertake still additional energy savings projects outside of the Nicor Gas programs? If so, what types of measures or projects?

35. Is the program having any impacts on non-participants – driving any increased energy efficient projects or behaviors - that you are aware of?

36. Do you think the current economic conditions are affecting the program? If so, how?

**Other**

37. We are also planning on talking to \_\_\_\_\_ and \_\_\_\_\_ about this program. Are there any additional people with key roles that we should talk to?

38. Do you have any other comments or suggestions for us?

Thank you very much for taking the time in assisting us with this evaluation. Your contribution is a very important part of the process.

We might follow-up with you by phone later, if additional questions arise.

5.7.2 ComEd/Nicor Gas Trade Ally In-Depth Interviewer Guide

ComEd/Nicor Gas and ComEd/Peoples & North Shore Gas Evaluation for the Small Business Energy Savings Program  
Final Version August 3, 2012  
Contractor In-Depth Interview Guide

<b>Respondent name:</b>	
<b>Respondent phone number:</b>	
<b>Respondent title:</b>	
<b>Email Address:</b>	
<b>Respondent Company</b>	
<b>Date:</b>	
<b>Status:</b>	
<b>Utilities</b>	<b>ComEd/Nicor Gas</b>
	<b>ComEd/Peoples Gas and North Shore Gas</b>
	<b>Both gas companies</b>

Section	Topics	Questions
Background	What type of business does the trade ally conduct and what types of experience does this trade representative have?	Q1-Q3
Marketing and Participation	How did trade ally become aware of this program and other utility programs? Do you refer customers to other utility programs? Is the level of utility marketing sufficient? Has word of mouth marketing had an impact?	Q4-Q8
Program Barriers	How could the program be changed to overcome the barriers encountered by customers and trade allies?	Q9-Q12
Administration and Delivery	How do you market the program? How do you provide customers with service for both electric and gas energy efficient equipment? Does program delivery occur in a timely manner? Do you need more training?	Q13-Q21
Program Satisfaction	How satisfied are trade allies with the program? How satisfied are customers with the program? Do the inspections increase or decrease customer satisfaction?	Q22-Q25

Section	Topics	Questions
Economic Indicators	How do the current economic conditions impact the program? Have your business revenues grown? Have you hired more employees? Do you plan on continuing your participation?	Q26-Q31
Free-ridership and Spillover	Would small business customers have installed the equipment without the program (free-ridership)? About what percentage of customers have installed additional energy efficient equipment without an incentive (spillover)?	FR3a-S2

*[Note to Reviewer] The Interview Guide is a tool to guide process evaluation interviews with utility staff and implementation contractors. The guide helps to ensure the interviews include questions concerning the most important issues being investigated in this study. Follow-up questions are a normal part of these types of interviews. Therefore, there will be sets of questions that will be more fully explored with some individuals than with others. The depth of the exploration with any particular respondent will be guided by the role that individual played in the program’s design and operation, i.e., where they have significant experiences for meaningful responses. The interviews will be audio taped and transcribed.*

**Introduction**

(Note: the interviewer should change the introduction to match his/her own interviewing style)

Hi, may I please speak with [NAME]?

My name is \_\_\_ and I’m calling from Navigant Consulting. We are part of the team hired to conduct an evaluation of the [ComEd/Nicor Gas or ComEd/Peoples and North Shore Gas] Small Business Energy Savings Program. At this time we are interested in asking you some questions about your experiences with the Small Business Energy Savings program. The questions will only take about a half hour. Is this a good time to talk? [IF NOT, SCHEDULE A CALL BACK.]

I want to let you know that this call will be recorded for quality control purposes. Responses will remain confidential and only be reported in aggregate with other responses.

**Background**

2. Can you briefly describe the company you work for and the type of business it conducts?

- How many full-time employees are employed at your company? Who are your primary business customers?
- Do you mainly serve small businesses, large businesses or a mix of the two? Do you
  - Install Gas Measures only
  - Install Electric Measures only
  - Install both Gas and Electric measures

3. Can you briefly summarize your roles and responsibilities at your company? For how long have you carried these out?

4. How would you describe your familiarity with your company’s alliance with the [ComEd/Nicor Gas or ComEd/Peoples Gas and North Shore Gas] Small Business Energy Savings Program?

[ONLY ASK IF RESPONDENT PARTICIPATES IN BOTH PROGRAMS]

5. I understand that you participate in both the Nicor Gas and the Peoples Gas and North Shore Gas programs. What are the major differences between the two programs? Is one easier to participate in than the other?

**Marketing**

6. How did you (the contractor) become aware of the program?

7. What other ways can the utilities and program implementers boost program awareness with contractors?

8. Are you aware of other ComEd, Nicor Gas, Peoples Gas and North Shore Gas Programs?

[ONLY ASK IF 5 = YES]]

9. Have you referred any customers to other ComEd, Nicor Gas, Peoples Gas and North Shore Gas] business programs?
10. Do you have any materials that you can leave with customers describing the full range of [ComEd/Nicor Gas or Peoples Gas and North Shore Gas] programs? (ASK SEPARATELY ABOUT EACH IF IN BOTH PROGRAMS)
11. What kind of support, if any, do [Nexant/Franklin Energy] provide to you for marketing the Small Business Energy Savings Program to your customers?
12. Do you use utility-produced marketing materials? Cooperatively?
13. Do you think promotional efforts are successful? How do your customers hear about the program?
14. Do you think the level of marketing and promotion of the Small Business Energy Savings Program has been appropriate so far?
15. Do you think they reach the right audience?
16. If the utilities or implementers are missing areas of opportunity, what are those areas?
17. Have you noticed any spontaneous word- of- mouth marketing among [ComEd/Nicor Gas or ComEd/Peoples Gas and North Shore Gas'] customers?
18. For example, do customers know of other participating businesses?

**Program Characteristics and Barriers – ask about both programs**

19. What areas could be improved to create a more effective program for customers and program partners?
20. Do you have any recommendations for what could be modified to make the program work better (e.g., incentive levels, eligible equipment, etc.)? Why do you think this change is needed?
21. Do you think the utilities should add more measures to the Capital Improvements list? What would you like to see added to the program? Do you think this would increase program participation?
22. Have you looked at the any of the utilities’ websites? Which ones? Why did you visit this website? Did you find the information you needed there?
23. What barriers have you encountered with the program? [ONLY ASK IF THEY PARTICIPATE IN BOTH PROGRAMS] Are there different barriers between the two programs?

**Administration and Delivery**

24. Do you actively market the program to your customers? How did you decide which [ComEd/Nicor Gas or ComEd/Peoples Gas and North Shore Gas] customers to contact about the program? Are these customers current customers of yours?
25. Did you market to targeted geographic areas?
26. This program provides rebates for electric and gas measures. Did you provide customers with the full program? Did you partner with another trade ally or provide all the services yourself? Do you currently partner with another company?
27. As an [electrical contractor/ or an HVAC contractor], do you plan to partner with [an HVAC contractor/ or an electrical contractor] to be able to install the complete list of measures offered in the next program year? If no, why not?
28. After the customer agrees to install the recommended equipment, how long does it usually take to schedule the installation?
29. Are customers confused by any forms they need to fill out? Are customers confused about the SBES implementation process?
30. How long did it take [Nexant/Franklin Energy] to process your payment after installation? Is this an acceptable amount of time?

31. Are you able to provide qualified customers with a loan arrangement? Who finances these loans? About what percent of your SBES program sales are financed? What percent of customers request financing?
32. Did you know whom to contact for help with this program? Who would you call? What is the name of the company implementing the program?
33. What training did you receive in how to deliver this equipment to small business customers? Would more training be useful? What types of training would be helpful?

### **Satisfaction with the SBES Program**

34. Are you satisfied with the program? Why or why not?
35. Has the program allowed your organization to provide an increased level of customer service? Are customers satisfied with the program? Why or why not?
36. Have you had any call backs and if so, on what measures?
37. Do you think customers like the assigned trade ally approach or do some customers say they want their own contractor?
38. Are the incentives levels effective at encouraging customers to install equipment they would not have considered without the program?
39. What has been the impact of the recent increases in incentive levels from last program year?
40. The implementers (Nexant or Franklin Energy) conduct pre and post inspections of the installations. Are these inspections conducted quickly? Do they present a barrier to participation or are they a burden on customers? Do the pre-inspections unnecessarily delay installations? Do the post-inspections unnecessarily delay incentive payments?

### **Economic Indicators**

41. Do you think the current economic conditions are affecting the program? If so, how?
42. Do you find the SBES Program is a competitive advantage for your firm?
43. Have your business revenues grown in the past year (Y/N)? [IF YES] Would you attribute any of that growth to the Small Business Energy Savings Program? About what % (+/- 10%)
44. Have you hired more employees because of work generated by the Small Business Energy Savings Program? How many? In the next year will you hire more employees to handle increased work generated by the program? About how many?
45. Do you plan to continue participating in the program [both programs] through 2013?

### **FREE-RIDERSHIP**

*[Ask the following for all the measures incorporated in aggregate]*

46. FR3a On a scale of 0 to 10 where 0 is NOT AT ALL IMPORTANT and 10 is EXTREMELY IMPORTANT, how important was the PROGRAM in influencing your decision to work with small business customers? (This includes incentives as well as program services and information) [SCALE 0-10]
47. C1 Were you selling your services to small businesses that qualify for this program prior to participating in the SBES program? [IF YES]
48. About what percent of your sales (units or dollars) were to these small businesses before the program? Thinking about your 2010 sales to small businesses only, about what percent of your sales do you think were of energy efficient equipment in 2010 – before the program? Was it more than 50% or less than 50%? More or less than 75% or 25%? Etc. (narrow down ideally to a 10% range – e.g., 20-30%)
49. C2 About what percent of your total sales do you think were to small businesses in 2011 after you became a program approved

trade ally?

- 50. Thinking again about those small businesses in 2011, about what percent of your sales were of energy efficient equipment? Was it more than 50% or less than 50%? More or less than 75% or 25%? Etc.
- 51. C3. Of the [number of projects in program] projects in 2011, how many of these small businesses were your customers before they participated in the program?
- 52. C4. Of the small businesses who were your customers before the program, how many of them had EVER installed energy efficient equipment that you are aware of?

ONLY ASK IF C4. > 0.

- 53. What type of equipment was it? When was that project installed?
- 54. C5. Did the customer receive a rebate from a utility program for installing that energy efficient equipment? (Electric only, no gas rebates existed in Illinois before PY1) [ONLY ASK IF C5. = NO]
- 55. C6. Why do you think the customer did not receive a rebate for this equipment?
- 56. C7. After their program participation, have any of the SBES program participants asked your organization to install additional energy efficient equipment?

[ONLY ASK IF C7. = YES]

- 57. What did you install? Why did they want more equipment? Did the equipment qualify for a utility incentive?

*I would now like to ask about what you would have done if the program had not been available.*

- 58. FR3b Using a 0 to 10 likelihood scale where 0 is NOT AT ALL LIKELY and 10 is EXTREMELY LIKELY, if the PROGRAM had not been available, what is the likelihood that you would have been selling the same energy efficient equipment to small businesses? [SCALE 0-10]

C9 If this program was not available, what do you think your Small Business Energy Savings customers would have installed? [RECORD VERBATIM RESPONSE]

Don't know  
Refused

C10. If the program were not available to your customers and potential customers in the future, how would their decisions regarding lighting and HVAC equipment be different? [RECORD VERBATIM RESPONSE]

Don't know  
Refused

C11. In the absence of the SBES program, how would your business be different? [RECORD VERBATIM RESPONSE]

Don't know  
Refused

I only have a few more questions left for you.

### Spillover

- 59. S1. How many of your small business customers purchase program equipment and do not apply for the incentive offered by the utility? [Ask about which measure types and rough scope.] a. Why is that, in your experience? (e.g., too time-consuming, too much paperwork, incentive too small to bother)
- 60. S2. As a result of increased program awareness, how many of your small business customers choose to implement other energy efficiency measures not incented by the program (things like pipe wrap or other energy efficiency equipment)?

[ONLY ASK IF S2. > 0]



61. What types of additional measures do they usually install? (Try to develop a number for each type.)

**CLOSING SECTION**

62. That brings us to the end of my questions for you. Is there anything else that you would like to let us know based on the topics we covered today?

63. On behalf of [ComEd/Nicor Gas or ComEd/Peoples Gas and North Shore Gas], we thank you for your time today. If in reviewing my notes, I discover a point I need to clarify, is it all right if I follow-up with you by phone or email? [IF YES, VERIFY PHONE NUMBER OR EMAIL]



5.7.3 ComEd/Nicor Gas Energy Advisor In-Depth Interviewer Guide

**ComEd/Nicor Gas and ComEd/Integritys Evaluation for the Small Business Energy Savings Program  
Energy Advisor In-Depth Interview Guide**

<b>Respondent name:</b>	
<b>Respondent phone number:</b>	
<b>Respondent title:</b>	
<b>Respondent Company</b>	
<b>Date:</b>	
<b>Status:</b>	

**The energy advisor is employed by the implementer and conducts the assessment and installs the no-cost measures.**

*[Note to Reviewer] The Interview Guide is a tool to guide process evaluation interviews with utility staff and implementation contractors. The guide helps to ensure the interviews include questions concerning the most important issues being investigated in this study. Follow-up questions are a normal part of these types of interviews. Therefore, there will be sets of questions that will be more fully explored with some individuals than with others. The depth of the exploration with any particular respondent will be guided by the role that individual played in the program’s design and operation, i.e., where they have significant experiences for meaningful responses. The interviews will be audio taped and transcribed.*

**Introduction**

Hi, may I please speak with [NAME]?

My name is \_\_\_ and I’m calling from Navigant Consulting, we are part of the team hired to conduct an evaluation of ComEd/Nicor Gas or ComEd/Integritys’ Small Business Energy Savings Program. We’re conducting interviews with Energy Advisors in order to improve our understanding of this program. The questions will only take about a half hour. Is this a good time to talk? [IF NOT, SCHEDULE A CALL BACK.]

### **Background**

1. Can you briefly summarize your roles and responsibilities at Nexant/Franklin Energy for the SBES Program? For how long have you carried these out?

### **Marketing and Participation**

2. How do customers become aware of the program? What other ways can Nexant/Franklin Energy use to boost program awareness with contractors/customers?
3. Are you aware of the other ComEd, Nicor Gas, / ComEd/Integrys Programs? Have you referred any customers to other ComEd, Nicor Gas/ ComEd/Integrys business programs? Do you have any materials that you can leave with customers describing the full range of ComEd/Nicor Gas/Integrys Programs? (ASK SEPARATELY ABOUT EACH)
4. Do you market the SBES Program directly to customers? How? Do you distribute utility-produced marketing materials?
5. Do you think level of marketing and promotion of the Small Business Energy Savings Program has been appropriate so far? Do you think promotional efforts are successful? Do you think they reach the right audience?
6. Have you noticed any spontaneous word- of- mouth marketing among ComEd/Nicor Gas or ComEd/Integrys' customers?

### **Program Characteristics and Barriers**

7. What could be modified to make the program work better from your perspective (e.g., incentive levels, eligible equipment, etc.)? If so, what would you recommend? Why do you think this change is needed?

### **Administration and Delivery**

8. About what percentage of the customers you talk to about the program agree to an assessment of their energy use?
9. Of those who agree to an assessment of their facility, about what percentage agrees to install at least one no-cost measure?
10. Of those who agree to install a no-cost measure, what percentage agrees to install at least one low-cost measure?
11. After the customer agrees to install the recommended low-cost equipment, how long does it take for the contractor to install the low-cost equipment?

### **Thermostat Installation**

#### **IF THERMOSTAT IS INSTALLED AS PART OF THE NO COST MEASURES (INTEGRYS):**

12. Are you trained to program the thermostat to lower the temperature in the evening or raise it for air conditioning before leaving the facility? Are you required to teach the customer how to use the programmable thermostat? Do you think this training is effective for customers?

### **Satisfaction with the SBES Program**

13. Do you think contractors are satisfied with the program? Why or why not?
14. Do you think customers are satisfied with the program? Why or why not?
15. Are the incentives levels effective at encouraging customers to install equipment they would not have considered without the program? About what percent of your customers were planning to install any of the no-cost/low cost equipment without the incentive?
16. What barriers prevent customers from participating in the program? How can these barriers be reduced, in your opinion?
17. Do you conduct pre- or post-installation inspections? Are these inspections scheduled quickly? Do they present a barrier to participation or are they a burden on customers? Do the pre-inspections unnecessarily delay installations? Do the post-inspections unnecessarily delay incentive payments?
18. Do you think the current economic conditions are affecting the program? If so, how?

### **Thank you and closing.**

5.7.4 ComEd/Nicor Gas Energy Program Implementer In-Depth Interviewer Guide

Nicor Gas Evaluation

**Program Staff and Implementer In-Depth Interview Guide  
Small Business Energy Savings Program  
(Interviews to be Conducted Separately)**

May 15, 2012 draft

Name of Interviewee: \_\_\_\_\_ Date: \_\_\_\_\_  
 Title: \_\_\_\_\_ Company: \_\_\_\_\_  
 Role in Program: \_\_\_\_\_

*[Note to Reviewer] The Interview Guide is a tool to guide process evaluation interviews with utility staff and implementation contractors. The guide helps to ensure the interviews include questions concerning the most important issues being investigated in this study. Follow-up questions are a normal part of these types of interviews. Therefore, there will be sets of questions that will be more fully explored with some individuals than with others. The depth of the exploration with any particular respondent will be guided by the role that individual played in the program’s design and operation, i.e., where they have significant experiences for meaningful responses. Where possible, interview date/times will be arranged in advance. The interviews may be audio taped.*

**Introduction**

Hi, may I please speak with [NAME]?

My name is \_\_\_ and I’m calling from Navigant Consulting, we are part of the team hired to conduct an evaluation of the Nicor Gas Small Business Energy Savings Program. We’re conducting interviews with program managers and key staff in order to improve our understanding of the program. At this time we are interested in asking you some questions about the Nicor Gas SBES program. The questions will only take about an hour. Is this still a good time to talk? [IF NOT, SCHEDULE A CALL BACK.]

Ok, great. [Optional: If you don’t mind, I would like to do a voice recording our conversation to speed up the note taking. Is that OK? I’m going to switch you to speaker phone. I am in an enclosed, private office.]

**Roles and Responsibilities**

*[For respondents that were interviewed as part of the Rider 29 study focus questions/responses on any changes since last interview]*

1. Can you briefly summarize your role in the ComEd/Nicor Gas/Integrus Gas Small Business Energy Savings Program: What are your main responsibilities? Has your role changed over time?
2. Can you explain who is involved in the program implementation, and what their roles are? If NICOR GAS: What is the role of WECC in delivering this program, if any?
3. Roughly, how many people are assigned to work on this program? What are your near-term plans for adding staff? From your perspective, is staffing adequate at Nexant for this program to meet its goal? (If not): What areas/functions do you feel are not adequately staffed?
4. What are the formal and informal communication channels between these groups (between WECC and Nexant (the implementation contractor)) and the utilities? Do you feel information is shared in a timely manner?
5. Are there any documents, other than what has been provided on the SharePoint site, that outline the roles and responsibilities of program staff for the program? Operations manual, policies and procedures guide? Can we have access to these documents?

### Overall Goals and Objectives

6. According to the most recent monthly report, you are [ahead/behind] on PY1 quantitative goals. Why do you think this is? Were the PY1 goals realistic given that it was a ramp up year? Why or why not?
7. Outside of the quantitative goals (e.g., \$, \$/kWh, savings and participation rates), in your own words, what are the key goals and objectives of this program? The operating plan says that education and awareness of the benefits of energy efficiency for target audiences will be the key to the marketing strategy. What has this meant for the development of marketing the SBES program?

### Marketing and Promotion

8. Do you have a written marketing plan from either Nexant or Franklin Energy?

Please describe your program marketing campaign in your own words. Are any of the following marketing channels used? (Bill inserts, TV, newspaper, radio, workshops, community events, emails, social media?)

- a. How often does each activity occur?
  - b. Who is in charge of developing materials?
  - c. Who is in charge of marketing activities?
  - d. Do you have a written marketing plan?
9. Is there any additional marketing material that has not been provided on the SharePoint site? If so, can we arrange to get access to the marketing collateral you use?
  10. Do you anticipate making any changes to marketing efforts for Program Year 2 (starting June 1 2012)? If so, please describe these changes.
  11. One idea in the Nicor Gas operations plan was for Nexant to use direct mail or outbound telemarketing to market the program? Have these methods been used by Nexant?
  12. The issue with split incentives – Energy Advisors should work with landlords to obtain permission to install the no-cost equipment and to encourage them to share the costs of the low cost equipment? Is this happening?

### Trade Allies

13. Could you talk a bit about the program efforts that specifically target trade allies? How involved are you in the relationships with trade allies? Are you involved at all in the formal RFP process to solicit trade allies?
14. Is there one staff member that oversees the program trade ally network? Who is this at Nexant/Franklin Energy?
15. Who recruits trade allies? Which types of trade allies are choosing to participate in the program(s) and which are not? How many trade allies are currently participating in the program? How many would you say are active participants?
16. Do you have a sense of trade allies' satisfaction with their participation in the trade ally program? From the Surveys? How often do you conduct trade ally surveys? How many trade allies complete the surveys? Do you track the results of these surveys? May we have access to these reports? Do the surveys raise any flags with the program implementation?
17. What kind of training is provided for trade allies as part of the registration process? What role do they have in marketing the program(s)? What kind of support, if any, is provided to them for marketing the program(s) to customers?
18. Have trade allies requested any other types of support/collateral, etc. If so, what have they requested and how are you responding to their requests? If so, what have they requested and how are you/Nexant/Franklin Energy responding to their requests

19. Are there any quality control procedures in place for trade allies? What is done if a complaint is received, for example? Have you had to drop any trade allies from the program for poor performance? Have any trade allies been dropped for not providing the three leads a month to the program?
20. How many trade allies are currently participating in the Nexant program? How many would you say are active participants? Is this enough for the program to be successful?
21. What kind of support, if any, is provided by ComEd/Nexant/Franklin Energy to the trade allies for marketing the program(s) to their customers?

### **Program Participation**

We are also trying to learn of any process related issues that may arise from the current design of the program(s).

22. Could you briefly describe the process for participation in the program(s) from the customer perspective? Who drives participation: implementers, customers, trade allies?
23. Have you personally received any feedback from customers on the program?
24. What do customers do if they have questions about the participation process? Is there a systematic process in place for responding to customer inquiries? How quickly are their questions answered? What improvements can be made? Are these questions answered by the implementer? What happens if a customer calls the utility? Is the call routed to the implementer?
25. Is there a system in place to track project progress? If so, please describe. Is the process to transfer customer lead to other program, such as the BEER program, when appropriate, working?
26. What is the target processing time between final documentation and payment to the contractor? What percent of applications are actually processed within that amount of time? What, if anything, slows down processing time? How can this bottle neck be changed?
27. Does the post-inspections performed by Nexant/Franklin Energy ever slow down the payment to the contractor? How does the post inspection process work?

### **Thermostat Installation**

IF THERMOSTAT IS INSTALLED AS PART OF THE NO COST MEASURES (INTEGRYS):

28. Are the technicians trained to program the thermostat to lower the temperature in the evening or raise it for air conditioning before leaving the facility? Are they required to teach the customer how to use the programmable thermostat? Do you think this training is effective?

IF THERMOSTAT IS INSTALLED AS PART OF THE LOW COST MEASURES (NICOR GAS):

1. Are the contractors trained to program the thermostat to lower the temperature in the evening or raise it for air conditioning before leaving the facility? Are they required to teach the customer how to use the programmable thermostat? Do you think this training is effective?

### **Incentives**

29. What do you perceive to be the level of satisfaction among program participants with the current incentive amounts?
30. How do trade allies perceive the incentive levels? What specific feedback have they given?

**Call Center**

31. Are customers/contractors making use of the phone number to program staff listed on the application form? [Probe for call volume.] What are the main issues raised by customers/contractors with program staff?

**Data Tracking**

32. What systems are in place for data tracking? Who captures the data and how?
33. Can you briefly describe what data are tracked for the program(s)? What about application attachments and calculations? What about review history and revisions to savings or incentive amount?
34. Do you feel all important information is captured and stored in a way to best support program efforts? Is the information accurate and current? Are there additional types of reports or information that you would find beneficial? Is there a process for requesting additional data? For modifying/changing the information?
35. Is the system used for data tracking linked with any other systems such as databases with customer account information or ones that track marketing activities?

**Quality Assurance and Quality Control (WECC and the IC)**

36. Are there any additional documents, other than what you have provided on the SharePoint site, that describe the quality assurance procedures? If so, can we obtain a copy?
37. Can you provide a brief description of your quality procedures? What kind of quality procedures are in place to verify equipment quantities and eligibility? Project completion? What is the process for verifying savings?
38. Approximately, what percentage of all projects is post-inspected? How do you determine if a project requires inspection? How many projects are inspected during installation?
39. How are they documented? Do they use standardized data collection forms? How can we arrange to obtain these documents?
40. When are on-site measurements conducted as part of the pre and post verification? Which measures and business types? Are they ever needed for this program?

**Program Adjustments and Enhancements**

41. From your experience to date, are there elements in design, structure, and/or operation that should be modified to make the program(s) work better? If so, what would you recommend? Why do you think this change is needed?
42. Do you feel that free-ridership is a major concern for the program? [Please explain.]
43. Do you see this program as leading participants to undertake additional energy savings projects using other Nicor Gas/Integrays/ComEd programs? Will participants install additional equipment outside of the Nicor Gas/Integrays/ComEd programs? If so, what types of measures or projects?
44. Is the program having any impacts on non-participants – driving any increased energy efficient projects or behaviors- that you are aware of?
45. Do you think the current economic conditions are affecting the program? If so, how?



**Other**

46. We are also planning on talking to \_\_\_\_\_ and \_\_\_\_\_ about this program. Are there any additional people with key roles that we should talk to? WECC?

47. Do you have any other comments or suggestions for us?

*Thank you very much for taking the time in assisting us with this evaluation. Your contribution is a very important part of the process.*

*We might follow-up with you by phone later, if additional questions arise.*

5.7.5 ComEd/Nicor Gas Energy Small Business Energy Savings Program Participant Survey

**NICOR GAS/ComEd or INTEGRYS/COMED SMALL BUSINESS ENERGY SAVINGS PROGRAM  
PARTICIPANT SURVEY  
PY1 FINAL (8/08/2012)**

**Table 5-16. Small Business Energy Savings Program Survey Topics**

Topics	Research Questions
Measure Modules: 1) Direct Install Measures 2) Capital Investment Lighting Measures 3) Capital Investment Non-lighting (HVAC, Tune-Up, other)	<ul style="list-style-type: none"> <li>• Impact Direct Install Measure issues</li> <li>• Persistence</li> <li>• Hours of use</li> <li>• Tune-up baseline check</li> <li>• Early Replacement check</li> <li>• Programmed thermostats</li> </ul>
NTG	<ul style="list-style-type: none"> <li>• Would the customer have installed the energy efficient equipment without the program?</li> </ul>
Spillover Module	<ul style="list-style-type: none"> <li>• Did the SBES Program encourage the customer to install energy efficient equipment without an incentive? Why?</li> </ul>
Process Module  Firmographics Model	<ul style="list-style-type: none"> <li>• Satisfaction</li> <li>• Marketing and Outreach</li> <li>• Benefits and Barriers</li> <li>• Feedback and Recommendations</li> <li>• Ownership</li> <li>• Type</li> <li>• Age</li> <li>• Number of employees</li> </ul>

**Participation Type** = *Direct Install Direct Install Contractor Installed Contractor Installed Only Assessment Only*

**Enduse** = *Lighting Gas Non-lighting Electric Non-lighting*

**Direct Install** = *List of measures installed during the assessment*



## INTRODUCTION

### [READ IF CONTACT=1]

Hello, this is \_\_\_\_ from Opinion Dynamics calling on behalf of ComEd and Nicor Gas. *This is not a sales call.* May I please speak with <PROGRAM\_CONTACT>?

Our records show that <COMPANY> installed energy efficient <ENDUSE> through the Small Business Energy Savings Program sponsored jointly by ComEd and/or [Nicor Gas/Integrys Gas]. We are calling to do a follow-up study about <COMPANY>'s participation in this incentive program. I was told you're the person most knowledgeable about this project. Is this correct? [IF NOT, ASK TO BE TRANSFERRED TO MOST KNOWLEDGABLE PERSON OR RECORD NAME & NUMBER.]

This survey will take about 20 minutes. Is now a good time? [If no, schedule call-back]

### [READ IF CONTACT=0]

Hello, this is \_\_\_\_ from Opinion Dynamics calling on behalf of ComEd and [Nicor Gas/Integrys Gas]. I would like to speak with the person most knowledgeable about the recent assessment and changes in lighting, cooling or other energy-related equipment for your firm at this location.

[IF NEEDED] Our records show that <COMPANY> purchased and installed energy efficient <ENDUSE> and your contractor received an incentive of <INCENTIVE AMOUNT> from ComEd and/or [Nicor Gas/Integrys Gas]. We are calling to do a follow-up study about your firm's participation in this incentive program, which is called the Small Business Energy Savings Program. I was told you're the person most knowledgeable about this project. Is that correct? [IF NOT, ASK TO BE TRANSFERRED TO MOST KNOWLEDGABLE PERSON OR RECORD NAME & NUMBER.]

This survey will take about 20 minutes. Is now a good time? [If no, schedule call-back]

## SCREENING QUESTIONS

A1. Just to confirm, between June 1, 2011 and May 31, 2012 did <COMPANY> participate in the Small Business Energy Savings Program offered by ComEd and/or [Nicor Gas/Peoples/North Shore Gas] at <ADDRESS>?

IF MORE EXPLANATION IS NEEDED: This is a program where your business may have received a free energy assessment, an offer of free energy savings products, and a report.

IF <PARTICIPATION\_TYPE>=[CAPITAL IMPROVEMENT OR DIRECT INSTALL+CAPITAL IMPROVEMENT]:

Program incentives were paid directly to your contractor who implemented one or more energy saving capital improvement projects or equipment improvements and tune-ups.

- 1 Yes, participated as described
- 2 Yes, participated but at another location
- 3 NO, did NOT participate in program [if this is answered, go to A2]
- 00 Other, specify [if this is answered, go to A2]
- 98 Don't know [if this is answered, go to A2]
- 99 Refused [if this is answered, go to A2]

### [SKIP A2 IF A1=1, 2]

A2. Is it possible that someone else dealt with the energy-efficient product installation?

- 1 Yes, someone else dealt with it
- 2 No
- 00 Other, specify
- 98 Don't know
- 99 Refused

[IF A2=1, ask to be transferred to that person. If not available, thank and terminate. If available, go back to A1]

[IF A1=2,3,00,98,99: Thank and terminate. Record disposition as "Could not confirm participation".]



Before we begin, I want to emphasize that this survey will only be about the energy saving products and services received through the Small Business Energy Savings Program at <ADDRESS>.

[IF <PARTICIPATION\_TYPE=DIRECT INSTALL OR DIRECT INSTALL+CAPITAL IMPROVEMENT ASK QA0-QA7]

## **Direct Install Measures**

QA0. Were you present when <COMPANY> was visited by an Energy Advisor from the Small Business Energy Savings Program who conducted an assessment of your facility’s energy saving opportunities and who may have directly installed free energy saving products?

QA1. I am going to read a list of energy saving products that our records indicate were installed in your facility or building. Please confirm which of the following were installed during the energy assessment. Also, let me know how many were installed?

Free Products	Direct_install	QA1			QA1_Num
	Yes, data from database	Yes, confirmed	No, not installed	DK/NA	If Yes, How many were installed?
13 W CFLs					
20 W CFLs					
23 W CFLs					
Bathroom Faucet Aerators (gas)					
Bathroom Faucet Aerators (electric)					
Kitchen Faucet Aerators (gas)					
Kitchen Faucet Aerators (electric)					
Showerheads (gas)					
Showerheads (electric)					
Pre-Rinse Sprayer					
Hot Water Temperature Reset					
Vending Miser					
Cooling Miser					

QA2. Is (are) all of the free product(s) still installed in the original locations?

1. Yes
2. No
98. Don’t know
99. Refused

[IF QA2=2 Ask QA2a, ELSE SKIP TO QA7]

QA2a. Which free products are not installed in their original locations?  
(Mention 1, Mention 2, Mention 3,...)

**For each measure mentioned in QA2a, ask QA3-QA6**

QA3. How many were removed from their original locations (please be specific)?

QA4. If the device(s) is NOT installed at original location, what happened to the device? (*Interviewer: read list and record one response*).

1. It is installed at some other location in the facility
2. It is in storage
3. It was sold or given away
4. It was thrown away
00. Other, specify
98. Don't know
99. Refused

QA5. Why [was/were] the device(s) moved from [their/its] original locations? (*Record/answer all that apply*)

1. (Equipment failed)
2. (Didn't work properly)
3. (Wrong size – too small or too large)
4. (Low water flow)
5. (Didn't like the color)
6. (Didn't like the appearance/unattractive)
00. (Other, specify)
98. (Don't know)
99. (Refused)

QA6. What did you replace the device with? (*Record/answer all that apply*)

1. With a new high efficiency device
2. With a less efficient device
3. Re-installed old equipment
4. Did not replace
00. Other, specify
98. Don't know
99. Refused

[IF PRSV=1, ASK QA7]

QA7. How many hours per day would you estimate the pre-rinse sprayer(s) is (are) used at this site?

1. About one half hour
2. About one to two hours
3. About 3 hours
00. Other, specify
98. Don't know
99. Refused

ASK QA8 ONLY IF NO MEASURES WERE CONTRACTOR INSTALLED.

QA8. The Energy Advisor may have recommended a number of energy efficient steps you could take to reduce your energy usage. Why did you decide not to take any of these steps when a rebate was available?

[RECORD OPEN ENDED RESPONSE]

## **GO TO PROCESS MODULE IF DI ONLY–BEGINS WITH S0**

### **Capital Investment LIGHTING MODULE** [ASK MODULE IF PARTICIPATION\_TYPE = CI OR DI+CI AND ENDUSE= LIGHTING]

NOTE: THREE MEASURE VARIABLES ARE MEASD1, MEASD2 AND MEASD3.

A3. I'd like to confirm some information in our database. Our records show that a contractor installed the following lighting measures through the Small Business Energy Savings Program. Is this correct?

[ASK A3a IF MEASD1 <> BLANK]

A3a <MEASD1>

- 1 Yes
- 2 No, did not install
- 8 Don't know
- 9 Refused

[ASK PL3a IF A3a=1]

PL3a Is the lighting still installed?

- 1. Yes
- 2. No
- 98. Don't know
- 99. Refused

[ASK A3b IF MEASD2 <> BLANK]

A3b <MEASD2>

- 1 Yes
- 2 No, did not install
- 8 Don't know
- 9 Refused

[ASK PL3b IF A3b=1]

PL3b Is the lighting still installed?

- 1. Yes
- 2. No
- 98. Don't know
- 99. Refused

[ASK A3c IF MEASD3 <> BLANK]

A3c <MEASD3>

- 1 Yes
- 2 No, did not install
- 8 Don't know
- 9 Refused

[ASK PL3c IF A3c=1]

PL3c Is the lighting still installed?

- 1. Yes
- 2. No
- 98. Don't know
- 99. Refused

L4 After you completed the installation of the new fixtures, did you install additional lighting fixtures in that same space at a later time to increase the amount of lighting?

- 1 Yes
- 2 No
- 8 (Don't know)
- 9 (Refused)

[ASK IF L4=1, ELSE GO TO NEXT LIGHTING MEASURE]

L5 How many of these additional new fixtures did you install? [NUMERIC OPEN END, 1 TO 3000; 98=Don't know, 99=Refused]

**If PL3a=2 or PL3b=2 or PL3c=2, ask QA4-QA6 for each:**

QA4. You mentioned that <MEASD1/MEASD2/MEASD3> is no longer installed. What happened to the lighting equipment? (Read list and record one response).

- 1. It is installed at some other location in the facility
- 2. It is in storage
- 3. It was sold or given away
- 4. It was thrown away
- 00. Other, specify
- 98. Don't know
- 99. Refused

QA5. Why [was/were] the lighting equipment moved from [their/its] original locations? (Record/answer all that apply)

- 1. (Equipment failed)
- 2. (Didn't work properly)
- 3. (Didn't like the color)
- 4. (Didn't like the appearance/unattractive)
- 00. (Other, specify)
- 98. (Don't know)

99. (Refused)

QA6. What did you replace the lighting equipment with? *(Record/answer all that apply)*

- 1. With new high efficiency lighting
- 2. With less efficient lighting
- 3. Re-installed old equipment
- 4. Did not replace
- 00. Other, specify
- 98. Don't know
- 99. Refused

## HOURS OF USE – LIGHTING

Now we'd like to talk about the hours that your interior lighting equipment is in operation.

LH1a Are you typically open every day, Monday through Friday?

- 1 Yes
- 2 No
- 8 Don't know
- 9 Refused

[ASK LH1b IF LH1a=2]

LH1b How many days are you CLOSED Monday through Friday?

- 1 One
- 2 Two
- 3 Three
- 4 Four
- 5 Five
- 8 Don't know
- 9 Refused

[IF LH1b=5, SKIP TO LH4]

LH2 At what time do your indoor lights currently turn on during weekdays (Monday - Friday)? (Enter 2400 for 24-hour operation, enter 0 for never on)

LH2a Enter hours and minutes, e.g., 0530 for 5:30

- LH2b
- 1. AM
  - 2. PM

[SKIP LH3 IF LH2=24hr or never]

LH3 At what time do your indoor lights currently turn off during weekdays (Monday - Friday)? (Enter 2400 for 24-hour operation, enter 0 for never on)

LH3a Enter hours and minutes, e.g., 0530 for 5:30

- LH3b
- 1. AM
  - 2. PM

LH4 Does the lighting equipment operate on a different schedule on weekends (Saturday and Sunday)?

- 1 Yes

- 2 No
- 8 Don't know
- 9 Refused

[ASK IF LH4=1, ELSE SKIP TO LH9]

LH5 On Saturdays, at what time does the indoor lighting equipment turn-on? (Enter 2400 for 24-hour operation, enter 0 for never on)

LH5a Enter hours and minutes, e.g., 0530 for 5:30

- LH5b 1. AM
- 2. PM

[SKIP LH6 IF LH5=24hr or never]

LH6 And when does the indoor lighting equipment turn off on Saturdays? (Enter 2400 for 24-hour operation, enter 0 for never on)

LH6a Enter hours and minutes, e.g., 0530 for 5:30

- LH6b 1. AM
- 2. PM

LH7 And on Sundays, at what time does the indoor lighting equipment turn on? (Enter 2400 for 24-hour operation, enter 0 for never on)

LH7a Enter hours and minutes, e.g., 0530 for 5:30

- LH7b 1. AM
- 2. PM

[SKIP LH8 IF LH7=24hr or never]

LH8 And when does the indoor lighting equipment turn off on Sundays? (Enter 2400 for 24-hour operation, enter 0 for never on)

LH8a Enter hours and minutes, e.g., 0530 for 5:30

- LH8b 1. AM
- 2. PM

LH9a During hours when your business is OPEN, approximately what percentage of the indoor lights are kept on? [NUMERIC OPEN END, 0 TO 100; 998=DON'T KNOW, 999=REFUSED]

[SKIP LH9b IF LH1a=1 AND LH2a = 2400 AND LH4 = 2] (Business is open 24/7)

LH9b During hours when your business is CLOSED, approximately what percentage of the indoor lights are kept on? [NUMERIC OPEN END, 0 to 100; 998=Don't know, 999=Refused]

LH10a Are there any months during the year when the operating schedule for the indoor lighting differs significantly from what you just described?

- 1 Yes
- 2 No
- 8 Don't know
- 9 Refused

[ASK LH10b-e IF LH10a=1; ELSE SKIP TO non-lighting MODULE]

LH10b How many hours per day does your indoor lighting typically operate during the periods with different operating schedules?  
 [NUMERIC OPEN END, 0 TO 24; 98=DON'T KNOW, 99=REFUSED]

LH10c And how many days per week?  
 [NUMERIC OPEN END, 0 TO 7; 8=DON'T KNOW, 9=REFUSED]

LH10d How many months per year does the equipment run on the alternative schedule? [NUMERIC OPEN END, 0 TO 12; 98=DON'T KNOW, 99=REFUSED]

LH10e During hours when your business is OPEN, on the alternative schedule, approximately what percentage of the indoor lighting is kept on? [NUMERIC OPEN END, 0 TO 100; 998=DON'T KNOW, 999=REFUSED]

[SKIP LH10f IF LH10b = 24]

LH10f During hours when your business is CLOSED on the alternative schedule, approximately what percentage of the indoor lights are kept on? [NUMERIC OPEN END, 0 to 100; 998=Don't know, 999=Refused]

**NON-LIGHTING MODULE** [ASK IF ENDUSE = GAS NONLIGHT OR ELEC NONLIGHT AND PARTICIPATION\_TYPE = CI OR CI+DI =1, ELSE SKIP TO NET TO GROSS BATTERY]

NL3. Our records show that you implemented the following non-lighting energy saving measures through the Small Business Energy Savings Program. Is this correct?

	Contractor implemented	NL3			NL3_Nu m
		Yes, data from database	Yes, confirmed	No, not installed/ implemented	DK/NA
Low Cost Products					
Guest room energy management					
Installation of programmable thermostats					
Steam traps					
Boiler tune-ups					
Boiler reset controls					



Furnaces of at least 92% AFUE					
Water heaters of at least 88% thermal efficiency					
Furnace tune-ups					

**Measure Loop**

[Loop 1: ASK IF MEASD1=1. Loop 2: ASK IF MEASD2=1. Loop 3: ASK IF MEASD3=1.]  
 [For Loop 2, replace “1” at the end of read-ins with “2”; for Loop 3, replace “1” with “3”.]

The following questions are about the <MEASD1> implemented through the Small Business Energy Savings Program.

**[IF MEASD1= BOILER TUNE-UP OR FURNACE TUNE-UP, ASK NL4 AND NL5]**

- NL4 Prior to receiving this tune-up on your heating system through this program, when did you last tune-up your heating equipment?
- 1. Within the past three years
  - 2. More than three years ago
  - 3. Never had a tune-up
  - 00. Not applicable
  - 98. Don’t know
  - 99. Refused

- NL5 Prior to receiving an energy assessment through this program, did <COMPANY> have a maintenance contract for the heating system equipment?
- 1. Yes
  - 2. No
  - 98. Don’t know
  - 99. Refused

**[IF MEASD1= BOILER TUNE-UP OR FURNACE TUNE-UP, SKIP TO NEXT MEASURE]**

**REMOVED EQUIPMENT**

- NL6 Did the <MEASD1> installed through the Small Business Energy Savings Program replace old or outdated equipment at this facility, or was it an addition of new equipment?
- 1 (Addition of new equipment - did not replace anything)
  - 2 (Replacement of old or outdated equipment)
  - 00 (Other, specify)
  - 98 (Don't know)
  - 99 (Refused)

[SKIP NL7 NL8 AND NL9 IF NL6=1,98,99]



NL7. Approximately how old was the existing equipment?

- \_\_\_ Estimated Age
- 98 (Don't know)
- 99 (Refused)

**IF RESPONDENT HAS TROUBLE ESTIMATING AGE OF EQUIPMENT, ASK:**

NL7a. Approximately in what year was the existing equipment purchased?

- \_\_\_ Estimated Year of Purchase
- 98 (Don't know)
- 99 (Refused)

NL8. How much longer do you think it would have lasted?

- \_\_\_ Estimated Remaining Useful Life
- 98 (Don't know)
- 99 (Refused)

NL9. Which of the following statements best describes the performance and operating condition of the equipment you replaced through the Small Business program?

- 1 Existing equipment was fully functional and without significant problems
- 2 Existing equipment was fully functioning, but with significant problems
- 3 Existing equipment had failed or did not function.
- 4 Not applicable, ancillary equipment (VSD, EMS, controls, etc.)
- 5 Other (RECORD VERBATIM)
- 98 (Don't know)
- 99 (Refused)

**[IF MEASD1=GUEST ROOM ENERGY MANAGEMENT OR MEASD1=PROGRAMMABLE THERMOSTAT, ASK NL10, NL11, AND NL12]**

NL10 In the spaces where the <MEASD1> devices were installed, do have electric heating or natural gas heating?

- 1 (Electric space heating)
- 2 (Natural gas space heating)
- 98 (Don't know)
- 99 (Refused)

NL11 Since installing the <MEASD1> device, have you or a contractor programmed the temperature settings?

- 1 (Yes)
- 2 (No)
- 98 (Don't know)
- 99 (Refused)

**[IF NL11=1, ASK NL12]**

- NL12 Has the <MEASD1> been programmed to maintain a different temperature during unoccupied periods than occupied periods?
- 1 (Yes)
  - 2 (No)
  - 98 (Don't know)
  - 99 (Refused)

[IF MEASD1=GUEST ROOM ENERGY MANAGEMENT OR MEASD1=PROGRAMMABLE THERMOSTAT SKIP TO NEXT MEASURE]

[End of NON-LIGHTING MODULE] [ASK NON-LIGHTING MODULE ABOUT MEASD2 AND MEASD3]

## **PY1/4 NET-TO-GROSS MODULE VARIABLES**

*Variables for the net-to-gross module:*

<NTG> (B=Basic rigor level, S= Standard rigor level. All questions here are asked if the standard rigor level is designated. Basic rigor level is designated through skip patterns)

<UTILITY> (ComEd/Nicor Gas or ComEd/Integrays)

<PROGRAM> (Name of energy efficiency program)

<ENDUSE> (Type of measure installed; from program tracking dataset)

<OTHERPTS> (Variable to be calculated based on responses. Equals 1- minus response to N3p.)

<FINCRIT1> (Variable to be calculated based on responses. Equals 1 if payback period WITHOUT incentive is shorter than company requirement. See instructions below.)

<FINCRIT2> (Variable to be calculated based on responses. Equals 1 if payback period WITH incentive is shorter than company requirement. See instructions below.)

<MSAME> (Equals 1 if same customer had more than one project of the same end-use type; from program tracking database)

<NSAME> (Number of additional projects of the same end-use type implemented by the same customer; from program tracking database)

<FSAME> (Equals 1 if same customer also had the same measures installed at a different facility; from program tracking database)

<FDESC> (Type of end-use of a different measure type at the same facility; from program tracking database)

## **NET-TO-GROSS BATTERY**

I'd now like to ask a few questions about the <ENDUSE> you installed through the program.

- N1 When did you first learn about <UTILITY>'s Program? Was it BEFORE or AFTER you first began to THINK about implementing this measure? (NOTE TO INTERVIEWER: "this measure" refers to the specific energy efficient equipment installed through the program.)

- 1 Before
- 2 After
- 8 Don't know
- 9 Refused

[ASK N2 IF N1=2, 8, 9]

N2 Did you learn about <UTILITY>'s Program BEFORE or AFTER you DECIDED to implement the measure that was installed? (NOTE TO INTERVIEWER: "the measure" refers to the specific energy efficient equipment installed through the program.)

- 1 Before
- 2 After
- 8 Don't know
- 9 Refused

N3 Next, I'm going to ask you to rate the importance of the program as well as other factors that might have influenced your decision to implement this measure. Think of the degree of importance as being shown on a scale with equally spaced units from 0 to 10, where 0 means not at all important and 10 means extremely important. Now using this scale please rate the importance of each of the following in your decision to implement the measure at this time. [FOR N3a-n, RECORD 0 to 10; 96=Not Applicable; 98=Don't Know; 99=Refused]

(If needed: How important in your DECISION to implement the project was...)

N3b. Availability of the PROGRAM incentive

N3c. Information provided through the technical assistance you received from <UTILITY> or [Nexant/Franklin Energy] field staff

N3f. Recommendation from a <UTILITY or Implementer> program staff person

N3h. Information from <PROGRAM> or <UTILITY> marketing materials

N3o. Information in assessment report

N3n. Were there any other factors we haven't discussed that were important in your decision to install this MEASURE?

- 00 [Record verbatim]
- 96 Nothing else was important
- 98 Don't Know
- 99 Refused

[ASK N3nn IF N3n=00]

N3nn. Using the same zero to 10 scale, how would you rate the influence of this factor? [RECORD 0 to 10; 98=Don't Know; 99=Refused]

N3p If you were given a TOTAL of 100 points that reflect the importance in your decision to implement the <ENDUSE>, and you had to divide those 100 points between: 1) the program and 2) other factors, how many points would you give to the importance of the PROGRAM?  
Points given to program: [RECORD 0 to 100; 998=Don't Know; 999=Refused]

[CALCULATE VARIABLE "OTHERPTS" AS: 100 MINUS N3p RESPONSE; IF N3p=998, 999, SET OTHERPTS=BLANK]

N3o And how many points would you give to other factors? [RECORD 0 to 100; 998=Don't Know; 999=Refused] [The response should be equal to <OTHERPTS> because both numbers should equal 100. If response is not <OTHERPTS> ask INC1]

INC1 The last question asked you to divide a TOTAL of 100 points between the program and other factors. You just noted that you would give <N3p RESPONSE> points to the program. Does that mean you would give <OTHERPTS> points to other factors?

- 1 Yes
- 2 No
- 98 Don't know
- 99 Refused

[IF INC1=2, go back to N3p]

### CONSISTENCY CHECK ON PROGRAM IMPORTANCE SCORE

[ASK IF (N3p>69 AND ALL OF (N3b, N3c, N3f, N3h, N3o AND N3mm)=0,1,2,3), ELSE SKIP TO N4aa]

N4 You just gave <N3p RESPONSE> points to the importance of the program. I would interpret that to mean that the program was quite important to your decision to install this equipment. Earlier, when I asked about the importance of individual elements of the program I recorded some answers that would imply that they were not that important to you. Just to make sure I have recorded this properly, I have a couple questions to ask you.

N4a When asked about THE AVAILABILITY OF THE PROGRAM INCENTIVE, you gave a rating of ...<N3B RESPONSE> ... out of ten, indicating that the program incentive was not that important to you. Can you tell me why the incentive was not that important?

- 00 [Record VERBATIM]
- 98 Don't know
- 99 Refused

N4b When I asked you about THE INFORMATION IN THE TECHNICAL ASSESSMENT REPORT, for instance, you gave a rating of ...<N3o RESPONSE> ... out of ten, indicating that the information provided was not that important to you. Can you tell me why the information provided was not that important?

- 00 [Record VERBATIM]
- 98 Don't know
- 99 Refused

N4c When I asked you about THE RECOMMENDATION FROM A <UTILITY> PROGRAM STAFF PERSON, you gave a rating of ...<N3F RESPONSE> ... out of ten, indicating that the information provided was not that important to you. Can you tell me why the information provided was not that important?

- 00 [Record VERBATIM]
- 98 Don't know
- 99 Refused

N4d When asked about THE INFORMATION from the <PROGRAM> or <UTILITY> MARKETING MATERIALS, you gave a rating of ...<N3H RESPONSE> ... out of ten, indicating that this information

from the program or utility marketing materials was not that important to you. Can you tell me why this information was not that important?

- 00 [Record VERBATIM]
- 98 Don't know
- 99 Refused

[ASK IF N3p<31 AND ANY ONE OF (N3b, N3c, N3f, N3h, OR N3o=8, 9, 10) ELSE SKIP TO N5]

N4aa You just gave <N3p RESPONSE> points to the importance of the program. I would interpret that to mean that the program was not very important to your decision to install this equipment. Earlier, when I asked about the importance of individual elements of the program I recorded some answers that would imply that they were very important to you. Just to make sure I understand, would you explain why the program was not very important in your decision to install this equipment?

Now I would like you to think about the action you would have taken with regard to the installation of this equipment if the utility program had not been available.

N5 Using a likelihood scale from 0 to 10, where 0 is “Not at all likely” and 10 is “Extremely likely”, if the utility program had not been available, what is the likelihood that you would have installed exactly the same equipment? [RECORD 0 to 10; 98= Don't know; 99=Refused]

### CONSISTENCY CHECKS

[ASK N5a-d IF N3b=8,9,10 AND N5=7, 8, 9, 10]

N5a When you answered ...<N3B RESPONSE> ... for the question about the influence of the incentive, I would interpret that to mean that the incentive was quite important to your decision to install. Then, when you answered <N5 RESPONSE> for how likely you would be to install the same equipment without the incentive, it sounds like the incentive was not very important in your installation decision.

I want to check to see if I am misunderstanding your answers or if the questions may have been unclear. Will you explain the role the incentive played in your decision to install this efficient equipment?

- 00 [Record VERBATIM]
- 98 Don't know
- 99 Refused

N5b Would you like for me to change your score on the importance of the incentive that you gave a rating of <N3B RESPONSE> or change your rating on the likelihood you would install the same equipment without the incentive which you gave a rating of <N5 RESPONSE> and/or we can change both if you wish?

- 1 Change importance of incentive rating
- 2 Change likelihood to install the same equipment rating
- 3 Change both
- 4 No, don't change
- 8 Don't know
- 9 Refused

[ASK IF N5b=1,3]

N5c How important was availability of the PROGRAM incentive? (IF NEEDED: in your DECISION to implement the project) [Scale of 0 to 10, where 0 means not at all important and 10 means extremely important;

98=Don't know

99=Refused]

[ASK IF N5b=2,3]

N5d If the utility program had not been available, what is the likelihood that you would have installed exactly the same equipment? [Scale of 0 to 10, where 0 means "Not at all likely" and 10 means "Extremely likely"?

98=Don't know

99=Refused]

[ASK IF N5>0, ELSE SKIP TO N8]

N7 You indicated earlier that there was a <N5 RESPONSE> in 10 likelihood that you would have installed the same equipment if the program had not been available. Without the program, when do you think you would have installed this equipment? Would you say...

1 At the same time

2 Earlier

3 Later

4 Never

8 Don't know

9 Refused

[ASK N7a IF N7=3]

N7a. How much later would you have installed this equipment? Would you say...

1 Within 6 months?

2 6 months to 1 year later

3 1 - 2 years later

4 2 - 3 years later

5 3 - 4 years later

6 4 or more years later

8 Don't know

9 Refused

[ASK N7b IF N7a=6]

N7b. Why do you think it would have been 4 or more years later?

00 [Record VERBATIM]

98 (Don't know)

99 (Refused)

## ADDITIONAL PROJECTS

[ASK N26 IF MSAME=1] – Other projects within this program.

Our records show that <COMPANY> also received an incentive from <UTILITY> for <NSAME> other <ENDUSE> project(s).

- N26 Was it a single decision to complete all of those <ENDUSE> projects for which you received an incentive from <UTILITY> or did each project go through its own decision process?
- 1 (Single Decision)
  - 2 (Each project went through its own decision process)
  - 00 (Other, specify)
  - 98 (Don't know)
  - 99 (Refused)

[ASK N27 IF FSAME=1 ELSE SKIP TO SPILLOVER MODULE]

Our records show that <COMPANY> also received an incentive from <UTILITY> for a <ENDUSE> project(s) at < ADDRESS >. (Note: FSAME =Other sites participated in this program).

- N27 Was the decision making process for the <ENDUSE> project(s) at the other sites the same as for the <ENDUSE> project we have been talking about?
- 1 (Same decision making process)
  - 2 (Different decision making process)
  - 00 (Other, specify)
  - 98 (Don't know)
  - 99 (Refused)

## **PY4 SPILLOVER MODULE**

Thank you for discussing the new <ENDUSE> that you installed through the <PROGRAM>. Next, I would like to discuss any energy efficient equipment you might have installed OUTSIDE of the program.

- SP1 Since your participation in the <UTILITY> program, did you implement any ADDITIONAL energy efficiency measures at this facility or at your other facilities within ComEd's service territory that did NOT receive incentives through any utility or government program?
- 1 Yes
  - 2 No
  - 8 Don't know
  - 9 Refused

[ASK SP2 IF SP1=1, ELSE SKIP TO S0]

SP2 On a scale of 0-10, where 0 means "no influence" and 10 means "greatly influenced," how much did your experience with the Smart Ideas program influence your decision to install high efficiency equipment on your own? [SCALE 0-10; 98=Don't know, 99=Refused]

SP2a Why did you give it this rating? [OPEN END]

[ASK SP2-SP7i IF SP1=1, ELSE SKIP TO S0]



SP3 What was the first measure that you implemented? (IF RESPONSE IS GENERAL, E.G., “LIGHTING EQUIPMENT”, PROBE FOR SPECIFIC MEASURE. PROBE FROM LIST, IF NECESSARY.)

- 1 Lighting: T8 lamps
- 2 Lighting: T5 lamps
- 3 Lighting: High bay Fixture Replacement
- 4 Lighting: CFLs
- 5 Lighting: Controls / Occupancy sensors
- 6 Lighting: LED lamps
- 7 Cooling: Unitary/Split Air Conditioning System
- 8 HVAC: Packaged Terminal air conditioners or heat pumps
- 9 Cooling: Room air conditioners
- 10 Heating: Furnace
- 11 Heating: Boiler
- 12 Variable Frequency Drives (VFD/VSD) on HVAC Motors
- 13 Programmable Thermostat
- 14 Refrigeration LED Case Lighting
- 15 Refrigeration EC motor for cooler/freezer
- 16 Wall or roof insulation
- 17 New windows
- 18 Water heater
- 00 Other, specify
- 96 Didn't implement any measures
- 98 Don't know
- 99 Refused

[SKIP TO S0 (PROCESS MODULE) IF SP2=96, 98, 99]

SP4 What was the second measure? (IF RESPONSE IS GENERAL, E.G., “LIGHTING EQUIPMENT”, PROBE FOR SPECIFIC MEASURE. PROBE FROM LIST, IF NECESSARY.)

- 1 Lighting: T8 lamps
- 2 Lighting: T5 lamps
- 3 Lighting: High Bay Fixture Replacement
- 4 Lighting: CFLs
- 5 Lighting: Controls / Occupancy sensors
- 6 Lighting: LED lamps
- 7 Cooling: Unitary/Split Air Conditioning System
- 8 HVAC: Packaged Terminal air conditioners or heat pumps
- 9 Cooling: Room air conditioners
- 10 Heating: Furnace
- 11 Heating: Boiler
- 12 Variable Frequency Drives (VFD/VSD) on HVAC Motors
- 13 Programmable Thermostat
- 14 Refrigeration LED Case Lighting
- 15 Refrigeration EC motor for cooler/freezer
- 16 Wall or roof insulation
- 17 New windows
- 18 Water heater
- 00 Other, specify

- 96 Didn't implement any measures
- 98 Don't know
- 99 Refused

SP5 I have a few questions about the FIRST measure that you installed. (If needed, read back measure: <SP2 RESPONSE>) [OPEN END]

- a. Why did you not receive an incentive for this measure?
- b. Why did you not install this measure through the <UTILITY> Program?
- c. Please describe the SIZE, TYPE, and OTHER ATTRIBUTES of this measure.
- d. Please describe the EFFICIENCY of this measure.
- e. How many of this measure did you install?

SP5g. How significant was your experience in the <UTILITY> Program in your decision to implement this Measure, using a scale of 0 to 10, where 0 is not at all significant and 10 is extremely significant? [SCALE 0-10; 98=Don't Know; 99=Refused]

[SKIP SP5h IF SP5g = 98, 99]

SP5h. Why do you give it this rating? [OPEN END]

SP5i. If you had not participated in the <UTILITY> program, how likely is it that your organization would still have implemented this measure, using a 0 to 10, scale where 0 means you definitely WOULD NOT have implemented this measure and 10 means you definitely WOULD have implemented this measure? [SCALE 0-10; 98=Don't Know; 99=Refused]

[SKIP SP6-SP7i IF SP3=96, 98, 99]

SP6 I have a few questions about the SECOND measure that you installed. (If needed, read back measure: <SP3 RESPONSE>) [OPEN END]

- a. Why did you not receive an incentive for this measure?
- b. Why did you not install this measure through the <UTILITY> Program?
- c. Please describe the SIZE, TYPE, and OTHER ATTRIBUTES of this measure.
- d. Please describe the EFFICIENCY of this measure.
- e. How many of this measure did you install?

SP6g. How significant was your experience in the <UTILITY> Program in your decision to implement this Measure, using a scale of 0 to 10, where 0 is not at all significant and 10 is extremely significant? [SCALE 0-10; 98=Don't Know; 99=Refused]

[SKIP SP6h IF SP6g = 98, 99]

SP6h. Why do you give it this rating? [OPEN END]

SP6i. If you had not participated in the <UTILITY> program, how likely is it that your organization would still have implemented this measure, using a 0 to 10, scale where 0 means you definitely WOULD NOT have implemented this measure and 10 means you definitely WOULD have implemented this measure? [SCALE 0-10; 98=Don't Know; 99=Refused]

## PROCESS MODULE

I'd now like to ask you a few general questions about your participation in the Small Business Energy Savings program.

### Program Processes and Satisfaction

S0 How did you first hear about the Small Business program?

1. ComEd Account Manager
2. ComEd Website
3. Program Energy Advisor
4. Contractor/Trade Ally
5. Email
6. Friend/colleague/word of mouth
00. Other, specify
98. Don't know
99. Refused

S1b Who explained the program requirements to you?

1. ComEd Account Manager
2. ComEd Website
3. Program Energy Advisor
4. Contractor/Trade Ally
5. Email
6. Friend/colleague/word of mouth
00. Other, specify
98. Don't know
99. Refused

S1c How would you rate the application process? Please use a scale of 0 to 10 where 0 is "very difficult" and 10 is "very easy". [SCALE 0-10; 98=Don't know, 99=Refused]

[ASK S1d IF S1c<4]

S1d Why did you rate it that way?

1. Difficult to understand
2. Long process
00. Other, specify
98. Don't know
99. Refused

SKIP TO S11 IF DI ONLY PARTICIPANT



Contractor Relationship

ASK IF CONTRACTOR INSTALLED LIGHTING AND NON LIGHTING MEASURES

S1 Was more than one contractor involved in installing your energy efficient equipment?

- 1. Yes
- 2. No
- 98. Don't know
- 99. Refused

S2 Would you describe the contractor who did most of the work as a lighting contractor or not?

- 1. Lighting contractor
- 2. Not a lighting contractor
- 98. Don't know
- 99. Refused

ASK IF S2 = 2

S2A What type of contractor was he?

- 1. HVAC
- 2. Plumber
- 3. Other (Describe \_\_\_\_\_)

S3 Would you describe the second contractor as a lighting contractor or not?

- 1. Lighting contractor
- 2. Not a lighting contractor
- 98. Don't know
- 99. Refused

ASK IF S3 = 2

S3A What type of contractor was he?

- 1. HVAC
- 2. Plumber
- 3. Other (Describe \_\_\_\_\_)

**ASK IF S2=2 OR S3 = 2. ELSE SKIP TO S5. (check programming here in next program year)**

S4 How would you rate the non-lighting contractor's ability to meet your needs in terms of implementing your project? Please use a scale from 0 to 10, where 0 is "not at all able to meet needs" and 10 is "completely able to meet needs"? [SCALE 0-10; 98=Don't know, 99=Refused]

S4a On a scale of 0 to 10, where 0 is very dissatisfied and 10 is very satisfied, how would you rate your overall satisfaction with your non-lighting contractor? [SCALE 0-10; 96=not applicable, 98=Don't know, 99=Refused]

S5a Would you recommend this contractor to other people or companies?

1. Yes [GO TO S5 IF S1 =1]
2. No
8. Don't know [GO TO S5 IF S1 =1]
9. Refused [GO TO S5 IF S1 =1]

Ask S5b if S5a=2.

S6b Why not?

1. Too small
2. Did not complete the work
3. Did not clean-up work area
4. Poor quality work
5. Did not complete in a timely manner
00. Other, specify
98. Don't know
99. Refused

ASK IF S2 OR S3 = 1.

S5 How would you rate the lighting contractor's ability to meet your needs in terms of implementing your project? Please use a scale from 0 to 10, where 0 is "not at all able to meet needs" and 10 is "completely able to meet needs"? [SCALE 0-10; 98=Don't know, 99=Refused]

S5a On a scale of 0 to 10, where 0 is very dissatisfied and 10 is very satisfied, how would you rate your overall satisfaction with your lighting contractor? [SCALE 0-10; 96=not applicable, 98=Don't know, 99=Refused]

S6a Would you recommend this contractor to other people or companies?

1. Yes
2. No
8. Don't know
9. Refused

Ask S6b if S6a=2.

S6b Why not?

1. Too small
2. Did not complete the work
3. Did not clean-up work area
4. Poor quality work
5. Did not complete in a timely manner
00. Other, specify
98. Don't know
99. Refused

S7 BLANK

- S8 During the course of your participation in the program, did you place any calls to the Smart Ideas for Business Call Center?
1. Yes
  2. No
  8. Don't know
  9. Refused

[ASK S9 IF S8=1]

- S9 On a scale of 0 to 10, where 0 is "very dissatisfied" and 10 is "very satisfied," how would you rate your satisfaction with the Call Center's ability to answer your questions? [SCALE 0-10; 98=Don't know, 99=Refused]

[ASK S10 IF S9<4]

- S10 Why did you rate it that way?
1. Provided inconsistent information
  2. Didn't understand the question
  3. Hard to reach the right person/person with the answer
  00. Other, specify
  98. Don't know
  99. Refused

[ASK OF ALL RESPONDENTS]

- S11 On a scale of 0 to 10, where 0 is very dissatisfied and 10 is very satisfied, how would you rate your satisfaction with... [SCALE 0-10; 96=not applicable, 98=Don't know, 99=Refused]
- a. The incentive amount
  - b. The communication you had with the Smart Ideas program staff
  - c. The measures offered by the program (If needed: this is the equipment that is eligible for an incentive under the program)
  - d. The Small Business Energy Savings program overall
  - e. ComEd overall
  - g. Nicor Gas/Integrus overall

[ASK S12a IF S11a<4]

- S12a You indicated some dissatisfaction with the incentive amount, why did you rate it this way?  
[Record/answer UP TO 3]
1. Better rebates in other states
  2. Too small
  3. Equipment didn't qualify
  00. Other, specify
  98. Don't know
  99. Refused

[ASK S12b IF S11b<4]

S12b You indicated some dissatisfaction with the communication you had with the Smart Ideas staff, why did you rate it this way?

1. Provided inconsistent information
2. Didn't understand the question
3. Hard to reach the right person/person with the answer
00. Other, specify
98. Don't know
99. Refused

[ASK S12b IF S11c<4]

S12c You indicated some dissatisfaction with the measures offered by the Smart Ideas program, why did you rate it this way? [OPEN END; 98=Don't know, 99=Refused]

[ASK S12d IF S11d<4]

S12d You indicated some dissatisfaction with the Smart Ideas Program overall, why did you rate it this way?

1. Not as easy as other states
2. No clear guidance
00. Other, specify
98. Don't know
99. Refused

[ASK S12e IF S11e<4]

S12e You indicated some dissatisfaction with [ComEd/Nicor Gas/Integrys] overall, why did you rate it this way?

1. Rates are too high
2. Took too long to get rebate
3. Poor customer service
4. Poor power supply/service
00. Other, specify
98. Don't know
99. Refused

## Marketing and Outreach

MK0 I'm now going to ask you about several specific ways in which you might have seen or heard information about the Small Business Energy Savings program. Have you ever... [1=Yes, 2=No, 8=(Don't know), 9=(Refused)]

- a. Received information about the program in your monthly utility bill?
- b. Attended a ComEd/Nicor Gas/Integritys customer event where the program was discussed?
- c. Discussed the program with a ComEd Account Manager?
- d. Discussed the program with a Contactor or Trade Ally?
- e. Seen information about the program on the ComEd Website?
- f. Received information about the program in an Email?
- g. Heard about the program from a colleague, friend or family member?
- h. Attended a meeting, seminar or workshop where the program was presented?
- i. Attended a webinar where the program was discussed?
- j. Read about the program in a ComEd Newsletter?
- k. Been directly contacted by a Nexant/Franklin Energy outreach staff?

MK1b How useful were the program's marketing materials in providing information about the program? Would you say they were...

1. Very useful
2. Somewhat useful
3. Not very useful
4. Not at all useful
8. Don't know
9. Refused



**ASK MK1c IF MK1b=3,4]**

MK1c What would have made the materials more useful to you? [*Record/answer UP TO 3*]

1. More detailed information
2. Where to get additional information
00. Other, specify
98. Don't know
99. Refused

MK2 In general, what is the best way of reaching companies like yours to provide information about energy efficiency opportunities like the Small Business Energy Savings program? [*Record/answer UP TO 3*]

1. Bill inserts
2. Flyers/ads/mailings
3. E-mail
4. Telephone
5. ComEd Account Manager
6. Nexant/Franklin Energy advisor
8. Trade allies/contractors
00. Other, specify
98. Don't know
99. Refused

**Benefits and Barriers**

B1a What do you see as the main benefits to participating in the Small Business Energy Savings program? [*Record/answer UP TO 3*]

1. Energy Savings/Saving money
2. Good for the Environment
3. Lower Maintenance Costs
4. Better Quality/New Equipment
5. Rebate/Incentive
9. Able to make improvements sooner
00. Other, Specify
98. Don't know
99. Refused

B1b What do you see as the drawbacks to participating in the program? [*Record/answer UP TO 3*]

1. Paperwork too burdensome
2. Incentives not high enough/not worth the effort
3. Program is too complicated
4. Cost of equipment
5. No drawbacks
00. Other, specify
98. Don't know
99. Refused

**Feedback and Recommendations**

- R2 How would you improve the Small Business Energy Savings Program? [Record/answer UP TO 4]
1. Higher incentives
  2. More measures
  3. Greater publicity
  4. Better Communication/Improve Program Information
  8. Simplify application process
  11. Quicker processing times
  00. Other, specify
  96. No recommendations
  98. Don't know
  99. Refused

### Firmographics

I only have a few general questions left.

F1 What is <COMPANY>'s business type? (PROBE, IF NECESSARY; IF MANUFACTURING, PROBE IF IT IS LIGHT INDUSTRY OR HEAVY INDUSTRY)

1. (K-12 School)
2. (College/University)
3. (Grocery)
4. (Medical)
5. (Hotel/Motel)
6. (Light Industry)
7. (Heavy Industry)
8. (Office)
9. (Restaurant)
10. (Retail/Service)
11. (Warehouse)
15. (Property Management/Real Estate)
00. (Other, specify)
98. (Don't know)
99. (Refused)

F2 Which of the following best describes the ownership of this facility?

1. <COMPANY> owns and occupies this facility
2. <COMPANY> owns this facility but it is rented to someone else
3. <COMPANY> rents this facility
8. Don't know
9. Refused

F6 And which of the following best describes the facility? This facility is...

1. <COMPANY>'s only location
2. One of several locations owned by <COMPANY>
3. The headquarters location of <COMPANY> with several locations
8. Don't know
9. Refused

F7a And which of the following best describes the ownership of the lighting system in this building?

1. My company owns the lighting system
2. The owner of the building owns the lighting system
3. Other \_Specify
8. Don't know
9. Refused

F7b And which of the following best describes the ownership of the HVAC system in this building?

1. My company owns the HVAC system
2. The owner of the building owns the HVAC system
3. Other \_Specify
8. Don't know
9. Refused

F4a How old is this facility? [NUMERIC OPEN END, 0 TO 150; 998=Don't know, 999=Refused]

F5a How many employees, full plus part-time, are employed at this facility? [NUMERIC OPEN END, 0 TO 2000; 9998=Don't know, 9999=Refused]

That brings us to the end of my questions for you. On behalf of [ComEd/Nicor Gas or ComEd/Peoples Gas and North Shore Gas], we thank you for your time today. If in reviewing my notes, I discover a point I need to clarify, is it all right if I follow-up with you by phone or email? [IF YES, VERIFY PHONE NUMBER OR EMAIL]