



Small Business Energy Efficiency Program

GPY5 Evaluation Report

Energy Efficiency Plan: Gas Plan Year 5 (6/1/2015-5/31/2016)

FINAL

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Nicor Gas Company

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E. EXECUTIVE SUMMARY

This report presents a summary of the findings and results from the impact and process evaluation of the Nicor Gas program year five (GPY5)¹ Small Business Energy Efficiency Program (SBEEP or Small Business Program). The SBEEP is designed to assist qualified Nicor Gas non-residential customers² to achieve gas energy savings by educating them about energy efficiency opportunities through on-site assessments conducted by trade allies (TAs) and installation of no-cost direct-install (DI) natural gas energy efficiency measures. Further energy savings are available to participating customers through prescriptive and custom incentives offered for select contractor-installed (CI) natural gas efficient measures. The SBEEP is implemented by CLEAResult.

The GPY5 program was essentially the same as the GPY4 program. Program changes in GPY5 included lowered rebates for space heating and steam traps, reduced marketing and outreach efforts, and working towards increasing data collection, as recommended in the GPY4 evaluation report to enable more precise savings calculations.³

Navigant's evaluation in GPY5 involved verifying the compliance of the Small Business Program gross savings with the Illinois Technical Reference Manual (TRM v4.0)⁴ or applying, where necessary, research adjustments to non-deemed savings in the tracking database, and calculating verified net impact savings using the net-to-gross ratio (NTGR) deemed through Illinois Stakeholder Advisory Group (SAG) consensus.⁵ Navigant interviewed program staff and implementation contractor (IC) staff to verify information about the tracking system, and conducted participating TA interviews and customer decision maker surveys for process evaluation and to investigate net-to-gross for future use.

E.1. Program Savings

This section summarizes the GPY5 program savings, in aggregate and by measure. Table E-1 shows that the Small Business Program achieved net energy savings of 1,168,226 therms, and a verified gross realization rate of 0.98, in GPY5.

¹ The GPY5 program year began June 1, 2015 and ended May 31, 2016.

² To qualify for SBEEP, customers must be active Commercial and Industrial (C&I) customers of Nicor Gas who use no more than 60,000 therms per year.

³ Nicor_Gas_GPY5_Q4_Quarterly_Report.pdf

⁴ Illinois Statewide Technical Reference Manual for Energy Efficiency Version 4.0, available at:

<http://www.ilsag.info/technical-reference-manual.html>

⁵ http://ilsagfiles.org/SAG_files/NTG/2016_NTG_Meetings/Final_Documents/Nicor_Gas_NTG_Summary_GPY1-6_2016-02-29_Final.pdf

Table E-1. GPY5 Program Results

Savings Category	Quantity
Ex Ante Gross Savings (Therms)	1,278,814
Verified Gross Realization Rate (RR)	0.98*
Verified Gross Savings (Therms)	1,256,156
Net to Gross Ratio (NTGR)	0.93 [†]
Verified Net Savings (Therms)	1,168,226

Source: Utility tracking data provided December 2016, and Navigant analysis.

* Based on evaluation research findings, rounded to two digits.

[†] http://ilsagfiles.org/SAG_files/NTG/2016_NTG_Meetings/Final_Documents/Nicor_Gas_NTG_Summary_GPY1-6_2016-02-29_Final.pdf

Table E-2 disaggregates the information shown in Table E-1 by program channel and measure. Pipe insulation measures had the largest share of program savings, contributing 41 percent of GPY5 verified net savings, followed by steam traps with 34 percent, custom measures with 6 percent, and the remaining 19 percent from all other program measures, including water efficiency measures, kitchen equipment, water heaters, and space heating equipment.

Table E-2. GPY5 Program Results by Measure

Program Channel	Research Category	Ex Ante Gross Savings (Therms)	Verified Gross Realization Rate*	Verified Gross Savings (Therms)	NTGR [†]	Verified Net Savings (Therms)
Direct Install	DHW WH Pipe Wrap	921	0.96	886	0.93	824
	Faucet Aerators	14,628	1.00	14,631	0.93	13,607
	Showerheads	8,517	1.00	8,523	0.93	7,926
	Salon Sprayer	6,153	1.00	6,153	0.93	5,722
	Pre-Rinse Spray Valve	8,129	1.00	8,129	0.93	7,560
<i>DI Subtotal</i>		38,348	1.00	38,322	0.93	35,639
Prescriptive Incentives	Boiler Reset Controls	16,150	1.02	16,465	0.93	15,312
	Boiler Tune Up, Space Heating	39,445	1.09	42,819	0.93	39,821
	Convection Oven	1,836	1.00	1,827	0.93	1,699
	Conveyor Oven	2,199	1.00	2,199	0.93	2,045
	Efficient Boiler	32,105	1.00	32,231	0.93	29,975
	Efficient Furnace	43,635	1.01	44,217	0.93	41,121
	Fryer	15,016	1.00	15,018	0.93	13,967
	Infrared Charbroiler	661	1.00	661	0.93	615
	Infrared Heaters	26,609	1.00	26,609	0.93	24,746
	Infrared Salamander Broiler	239	1.00	239	0.93	222
	Outdoor Pool Covers	7,423	0.39	2,872	0.93	2,671
	Ozone Laundry	3,533	1.00	3,533	0.93	3,286
	Pipe Insulation	520,040	1.00	519,686	0.93	483,308
	Programmable Thermostat	5,600	0.92	5,138	0.93	4,778
	Pre-Rinse Spray Valve	118	1.04	122	0.93	114
	Steam Traps	439,004	0.96	423,259	0.93	393,631
	Storage Water Heater	798	1.00	798	0.93	742
<i>Prescriptive Subtotal</i>		1,154,411	0.99	1,137,693	0.93	1,058,055
Custom	Custom Measures	86,055	0.93	80,141	0.93	74,532
Program Total		1,278,814	0.98	1,256,156	0.93	1,168,226

Source: Program tracking data and Navigant analysis.

* Based on evaluation research findings, rounded to two digits.

† http://ilsagfiles.org/SAG_files/NTG/2016_NTG_Meetings/Final_Documents/Nicor_Gas_NTG_Summary_GPY1-6_2016-02-29_Final.pdf

E.2. Impact Estimate Parameters

Table E-3 shows the key parameters used in the GPY5 impact analysis. Navigant used impact parameters as defined by the Illinois Technical Reference Manual (TRM v4.0) to evaluate the savings for deemed program measures, conducted desk file reviews to verify custom savings assumptions for

custom projects, and reviewed custom efficiency values used to estimate ex ante savings for steam traps and space heating equipment. Navigant did not conduct additional research in GPY5 on SBEEP impact savings parameters for deeming in future versions of the Illinois TRM.

For the calculation of net savings, Navigant used a NTGR deemed by the Stakeholder Advisory Group (SAG) for Nicor Gas GPY5 SBEEP savings. This report provides further overview of impact parameters in Section 2.2.

Table E-3. Impact Estimate Parameters

Parameter	Data Source	Deemed or Evaluated?
Net to Gross Ratio	SAG Document	Deemed
Verified Gross Realization Rate	Program Tracking Data, Illinois TRM (v4.0) or custom evaluation	Evaluated
Space Heating Efficiency Inputs	Nicor Gas custom values	Evaluated
Custom measures inputs	Nicor Gas custom values	Evaluated
All other measures inputs, including hours of use (HOU) values	Program Tracking Data, Illinois TRM (v4.0)	Deemed

Source: Navigant analysis.

E.3. Participation Information

Table E-4 summarizes participation in the Small Business Program in GPY5. There were a total of 778 participants, of which 265 received no-cost direct install products or free assessment services, 498 received prescriptive incentives, and 15 received custom incentives. A total of 1,071 projects were completed, comprising the installation of 5,094 measures.

Table E-4. GPY5 Primary Participation Detail

Participation	Direct Install	Prescriptive Incentive	Custom Incentive	Program Total
Participants*	265	498	15	778
Completed Projects [†]	430	626	15	1,071
Installed Measures [‡]	3,099	1,980	15	5,094

Source: Program tracking data and Navigant analysis.

* Participant counts based on number of business accounts or names reported in the tracking system.

[†] Project counts based on unique applications submitted by customers during GPY5.

[‡] For measures where quantity is reported in the tracking system in linear feet, MBH, or square feet, Navigant treated each row entry in the tracking file as one measure.

E.4. Finding and Recommendations

This section summarizes the key findings and recommendations.

Program Savings Achievement

Finding 1. Navigant verified net savings of 1,168,226 therms for the GPY5 Small Business Program, based on the SAG approved program level NTG ratio of 0.93. The verified net

savings is 204 percent of the program net savings goal of 573,247 therms.⁶ Most of GPY5 savings were realized from pipe insulation measures, which contributed 41 percent of the verified net savings, followed by steam traps with 34 percent, custom measures with 6 percent, and the remaining 19 percent from the other program measures, including water efficiency measures, kitchen equipment, water heaters and space heating equipment.

Gross Realization Rates

Finding 2. Navigant calculated an overall gross savings realization rate of 0.98 for the Small Business Program for GPY5. This is based on verified gross savings of 1,256,156 therms, a decrease of 22,658 therms compare to the ex ante 1,278,814 therms. Notable adjustments were made to ex ante savings from commercial steam traps, DHW pipe wrap, programmable thermostats, boiler reset controls, boiler tune-ups, outdoor pool covers, and some custom measures. Details of the measure-level adjustments are presented in Section 3.

Finding 3. Navigant performed engineering reviews on a random sample of 9 of 15 custom projects implemented in GPY5, and verified the reasonableness of the custom inputs used to calculate the ex ante savings. Of the 9 projects, three had 100 percent verified gross realization rate, two projects had a realization rate above 100 percent, and the other four projects had savings adjusted downward with realization rates below 100 percent. The weighted average gross realization rate of the sampled overall custom projects was 93 percent, which was applied to the population of 15 custom projects. This value is precise to within ± 8 percent at a 90 percent confidence level. Details of the findings on the custom projects are highlighted below and in Appendix 7.2.

Finding 4. One custom project (PRJ-360851), a building automation system (BAS) installation, was verified to have a negative realization rate. The ex ante savings estimate was generated by a billing analysis that relied on eight months of post-installation usage history. However, due to unforeseen circumstances during the period (museum was closed for seven of those months due to flood damage, and only three months had appreciable heating degree-days) additional usage history was requested for verification. The ex post estimate used the same approach as the ex ante, but with 14 months of additional usage history, and resulted in negative savings of 1,442 therms. Navigant determined the verified savings for this project should be set to zero in the population roll up savings.

Recommendation 1. To avoid unnecessarily penalizing BAS or other projects that experience a facility closure or other disruptions during the program year, we recommend documenting any changes (e.g., increasing ventilation levels to meet code requirements) to the facility operation that would result in an increased post-installation usage.⁷

Finding 5. Two custom projects involving boiler replacements (PRJ-383711 and PRJ-499089) compared a baseline of *thermal efficiency* to a proposed condition of *combustion efficiency* to generate ex ante savings estimates. Thermal efficiency and combustion efficiency are not equivalent metrics. In project PRJ-499089, the proposed boiler had a combustion efficiency of 86.1% and an Air-Conditioning, Heating, and Refrigeration Institute (AHRI) tested thermal efficiency of 80%, which is the baseline as defined in the Illinois TRM. As a result, Navigant

⁶ Nicor_Gas_GPY5_Q4_Report_Appendix_A.pdf

⁷ CLEAResult acknowledges the need to identify and track facility changes as part of custom projects review and determining appropriate baseline conditions.

determined no savings should be claimed for an increase in boiler efficiency in the verified savings.

Recommendation 2. Ensure that savings estimates are always based on comparison of equivalent metrics. In the example cited in Finding 5, the combustion efficiency appeared to indicate equipment that was more efficient than the baseline thermal efficiency, but this was not the case: thermal efficiency includes additional losses (e.g., radiation) that aren't captured by combustion efficiency, so the two are not comparable.⁸

Tracking System Review

Finding 6. Navigant verified most of the space-heating boiler and control and furnace projects had 100 percent gross savings realization rate, with savings inputs consistent with the TRM (v4.0). A limited number of projects used 1,657 equivalent full load hours (EFLH), which is not found in the TRM. One Boiler tune-up project (PRJ-535896) was reported to have 106 therms savings, but upon evaluation review of the reported boiler heating capacity and pre- and post-efficiency values, Navigant verified that the project could save 3,368 therms.

Recommendation 3. Review the tracking system EFLH values for HVAC systems, and ensure consistent use of the deemed assumptions and apply appropriately. Ensure the tracking heating loads and custom efficiency values are consistent with the claimed savings estimates. Navigant acknowledges CLEAResult is making the necessary tracking changes to be consistent with the TRM version approved for GPY6.

Finding 7. Navigant found that the tracking system savings input assumptions that feed into the ex ante savings calculations for several project categories, including pipe insulation, outdoor pool covers, programmable thermostats, and low-pressure industrial steam traps, did not produce the claimed savings or were incorrectly populated. There are more system configurations and recirculation approaches when selecting deemed values for pipe insulation than Nicor Gas defined in the tracking system.

Recommendation 4. Review the tracking system input parameters for pipe insulation, and ensure that the description of the pipe locations adequately reflect the applied thermal regain adjustment factors for savings from space heating systems. For heating season recirculation systems, ensure that the tracking system accurately tracks the seasonal recirculating operating hours from the TRM section for pipe insulation, not the EFLH by building type in the HVAC section.

Recommendation 5. Review the measure description and the tracking savings input assumptions for the "commercial steam trap <15 psig," to be consistent with other commercial steam trap projects that use TRM deemed inputs. The custom efficiency values are reasonable.

Recommendation 6. Review the savings factor for commercial pool covers and switch the current values in the tracking system for indoor and outdoor space to correctly calculate the deemed measure savings. Navigant acknowledges CLEAResult is taken steps to correct the error in the tracking system savings inputs.

Recommendation 7. Review the tracking system input assumptions for small commercial programmable thermostats to ensure consistency with the respective program year participating building types, quantity, and TRM deemed inputs. For an unknown building type, use an average estimate based on the Small Business program participation rather than estimates from other Nicor Gas programs. Navigant acknowledges CLEAResult is taken steps

⁸ CLEAResult indicates their protocol recognizes the different efficiencies and believes the projects in this finding do not represent their standard practice.

to correct the tracking system savings inputs to reflect the appropriate building type designation.

Finding 8. Supporting documentation for key inputs on several custom projects were not included in the project files. Examples of this include missing boiler manufacturer and model number (NG05-31), references for savings percentage estimates (NG05-010), and documentation of installed insulation thickness (NG05-073).

Recommendation 8. Information identifying and describing the products being installed should be included in the project files. If estimated savings factors or percentages are used to generate ex ante savings, provide documentation or assumptions supporting those values. CLEAResult indicates supporting equipment/project documentation and source citations are a requirement for all projects, so an additional check of documentation may be needed to ensure completeness prior to turning over to evaluators. CLEAResult has indicated they are looking into better managing and packaging the supporting documentation to prevent this from happening in the future.

Program Participation

Finding 9. The GPY5 Small Business Program had a total of 778 participants, of which 265 received no-cost direct install products or assessment services, 498 received prescriptive incentives, and 15 received custom incentives. A total of 1,071 projects were completed, comprising the installation of 5,094 measures.

Process Evaluation

Finding 10. Eighty-six percent of participants in the Assessment path reported first hearing of the program through program-initiated marketing and promotion efforts, while only nine percent of the Rebate (Rebate, Custom, and Assessment+Rebate) participants became aware of the program through program-initiated efforts.

Finding 11. TAs reported that over seventy percent of their customers first heard of the program from their contractor business, and that half of their customers shared program information by word of mouth.

Finding 12. Participants who actively sought out information about the program on their own valued various types of information differently than participants who were approached by the program or a program partner – specifically, the former attached greater importance to cost and savings information than to assistance in locating a contractor.

Finding 13. Participants fell into two camps when it came to preferred program information: those expressing a preference for program information coming directly from the utility, and those preferring information to come from their contractor.

Recommendation 9. Provide robust, easily navigable program information on the utility website offering potential participants the resources they need to enroll and schedule a contractor visit, from cost and savings information to applications and TA lists. Such material would additionally offer support and validation to TAs as they promote the program, and may encourage former participants to consider additional measures. Additional research into the existing website and best practices for online utility program content is warranted.

Finding 14. Facility ownership levels are higher among program participants than in the small business community as a whole, with 76 percent of participants reporting that they own the facility they operate from. Fifty percent of the Rebate participants who lease their facility own the HVAC equipment installed in the leased facility.

Recommendation 10. Ownership status of the facility may not correlate to ownership status of the HVAC equipment. The split incentive that often limits small businesses from participating in programs is reduced or eliminated when the lessee owns the equipment. Therefore, businesses operating in leased facilities should not be precluded when promoting this program. Additional research into how lease agreements address infrastructure systems such as HVAC is warranted.

Finding 15. Satisfaction was high for both the Assessment and Rebate paths, though consistently higher among the Rebate participants, with 71 percent top scores for the “program overall” compared to 40 percent for the Assessment participants.

Finding 16. Utilizing TRC analysis for GPY4, and exclusive of the \$400 utility cost per Assessment, the weighted average cost to deliver each therm saved is \$1.94 for Assessment participants and \$1.41 for Rebate participants.

Recommendation 11. Additional research into the Assessment offering is warranted to make the DI/Assessment path more satisfying to customers. Topics for this research may include channeling of Assessment participants into the Rebate offerings, perceived value of the DI measures, and value of the savings experienced by the participant. Programmable thermostats offer a higher value measure to the customer that is more likely to deliver discernable savings than, for example, aerators.

1. INTRODUCTION

1.1 Program Description

The Small Business Energy Efficiency Program (SBEEP) assists qualified Nicor Gas non-residential small business customers⁹ to achieve natural gas energy savings by educating them about energy efficiency (EE) opportunities through three SBEEP program delivery paths:

- The Energy Assessment and Direct Install path, which provides installation of no-cost direct-install (DI) natural gas energy efficiency measures¹⁰ to small business owners or tenants.
- The Prescriptive and Custom Incentive paths, which provides participating small business customers with financial incentives for selected contractor-installed natural gas efficient measures, including space heating efficient boilers and furnaces, steam traps, pipe insulation, and several other measures outlined in Section 3.

The GPY5 SBEEP measure mix did not change appreciably from the previous program year. Adjustments to the program in GPY5 included lowered rebates for space heating and steam traps; reduced marketing for the program and outreach for assessments, and worked towards increasing data collection, as recommended in the GPY4 evaluation report, to more precisely calculate savings.¹¹ The program is implemented by CLEARResult.

1.2 Evaluation Objectives

The Nicor Gas SBEEP year five (GPY5) evaluation focused on the following key research topics:

Impact Research:

1. What is the program's verified gross savings?
2. What is the program's verified net savings?
3. What is the researched value for net-to-gross (NTG) ratio?
4. What updates are recommended for the Illinois Technical Reference Manual (TRM)?

Process Research:

1. Effectiveness of programs delivery
2. TA and customer satisfaction with the program and its major components
3. Opportunities for programs improvement

⁹ To qualify for SBEEP, customers must be active Commercial and Industrial (C&I) customers of Nicor Gas who use up to 60,000 therms per year

¹⁰ No-cost direct-install measures include low-flow showerheads and faucet aerators, pre-rinse spray valves, programmable thermostats, and Domestic Hot Water (DHW) pipe insulation.

¹¹ Nico_Gas_GPY5_Q4_Quarterly_Report.pdf

2. EVALUATION APPROACH

This evaluation of the SBEEP covers the fifth full-scale year of program operation (June 1, 2015 through May 31, 2016). To determine verified gross savings, the evaluation team verified per unit savings for each program measure using the Illinois Technical Reference Manual (TRM v4.0) for deemed input parameters or through evaluation research to verify custom inputs applied by Nicor Gas in the ex ante calculations. Navigant multiplied measure quantities reported in the program tracking system data by the verified per unit savings values. The verified net savings was calculated using a net-to-gross ratio (NTGR) that was deemed for GPY5. Navigant interviewed program staff and the IC staff to verify information about the tracking system, and conducted participating TA interviews and customer decision maker surveys for process evaluation and to investigate net-to-gross for future use.

2.1 Overview of Data Collection Activities

The core data collection activities included in-depth interviews with program managers, engineering and project file reviews of program tracking data, telephone survey with participating customers, and TA interviews. The primary data collection activities are shown in the following table.

Table 2-1. Data Collection Activities

What	Who	Target Completes	Completes Achieved	When	Comments
In-Depth Interviews	PM/IC	2	2	Sept - Dec 2016	Interview program staff and IC staff
Tracking System & Engineering Review	Participating Customers	All	All	Dec 2016 – March 2017	Gross savings verification using IL-TRM v4.0, or through research
Custom Project File Reviews	Participating Customers	90/10 or better	9	Dec 2016 – March 2017	Review project files for 9 of 15 completed custom projects
Telephone Interviews	Trade Allies	10	10	Nov - Dec 2016	Process and NTG research
Telephone Survey	Participating Customers	80	75	Nov - Dec 2016	Process and NTG research

Source: Navigant analysis

2.2 Verified Savings Parameters

Table 2-2 below presents the sources for parameters that were used in verified gross savings analysis indicating which were examined through GPY5 evaluation research and which were deemed.

Table 2-2. Verified Gross and Net Savings Parameters

Measure	Input Parameter Source [†]	Deemed or Evaluated?
NTGR	SAG Agreement*	Deemed
Gross Realization Rate	Tracking data and evaluation research	Evaluated
Faucet Aerator	Illinois TRM, v4.0, section 4.3.2	Deemed
Showerhead	Illinois TRM, v4.0, section 4.3.3	Deemed
Pre-Rinse Spray Valve	Illinois TRM, v4.0, section 4.2.11	Deemed
Salon Sprayer	Illinois TRM, v4.0, section 4.2.11 & custom input	Evaluated
DHW WH Pipe Wrap (outlet)	Illinois TRM, v4.0, section 5.4.1	Deemed
Boiler Tune Up, Heating	Illinois TRM, v4.0, section 4.4.2 & custom input	Evaluated
Boiler Tune Up, Process	Illinois TRM, v4.0, section 4.4.3 & custom input	Evaluated
Boiler Cutout/Reset Control	Illinois TRM, v4.0, section 4.4.4	Deemed
High Efficiency Boiler	Illinois TRM, v4.0, section 4.4.10 & custom input	Evaluated
High Efficiency Furnace	Illinois TRM, v4.0, section 4.4.11 & custom input	Evaluated
Ozone Laundry	Illinois TRM, v4.0, section 4.3.6	Deemed
Outdoor Pool Covers	Illinois TRM, v4.0, section 4.3.4	Deemed
HW/Steam Pipe Insulation	Illinois TRM, v4.0, section 4.4.14 & custom input	Evaluated
Steam Traps	Illinois TRM, v4.0, section 4.4.16 & custom input	Evaluated
Commercial Kitchen – Fryer, Convection Oven, Charbroiler	Illinois TRM, v4.0, section 4.2	Deemed
Infrared Heaters	Illinois TRM, v4.0, section 4.4.12	Deemed
Programmable Thermostat	Illinois TRM, v4.0, section 4.4.18	Deemed
Storage Water Heater	Illinois TRM, v4.0, section 4.3.1	Deemed
Custom Measures	File Reviews and Secondary Research	Evaluated

Source: Navigant analysis

* http://ilsagfiles.org/SAG_files/NTG/2016_NTG_Meetings/Final_Documents/Nicor_Gas_NTG_Summary_GPY1-6_2016-02-29_Final.pdf

† Illinois Statewide Technical Reference Manual for Energy Efficiency Version 4.0, available at: <http://www.ilsag.info/technical-reference-manual.html>

2.3 Verified Gross Program Savings Analysis Approach

Navigant used the Illinois TRM Version 4.0 methodology to calculate verified gross savings for measures with deemed savings. The Illinois TRM allows for some custom values to be used in the algorithms as well. CLEAResult used custom input variables collected from customer applications alongside TRM deemed inputs to estimate ex ante savings for some measures. Navigant reviewed the custom assumptions in the tracking database and supplemental data provided by CLEAResult to verify the reasonableness of the custom inputs. To estimate verified gross savings for the deemed measures, Navigant multiplied measure quantities from the program tracking system data by the verified per unit savings value.

Navigant found 15 custom projects were completed in GPY5. Table 2-3. provides a breakdown of the population strata and the sample size of the custom sample. A sample of 9 custom projects was drawn at

random based on a planned target of 90/10 confidence and precision level from the SBEEP tracking database to determine custom projects verified gross realization rate. The population of custom projects was divided into three strata by project size, each representing roughly one-third of the custom population. The 9 sampled projects represent 67 percent of the custom population savings of 86,055 therms.

Table 2-3. Custom Projects Sampling Approach

Program	Population Strata	Population Size	Population Therms	Sample Size	Sample-Based Ex Ante Gross Savings (Therms)
SBEEP Custom	1	3	35,161	2	24,925
	2	4	26,553	3	18,110
	3	8	24,341	4	14,754
Sample Level Total		15	86,055	9	57,789

Source: Navigant analysis of program tracking data and M&V results.

The evaluation team performed engineering file reviews and analysis of the claimed savings, including billing analysis for the sample projects. The engineering review of the algorithms used by the program to calculate energy savings, and the assumptions that feed into those algorithms, were assessed and the savings evaluation approach were classified into one of two categories, 1) reasonable and acceptable, or 2) needs revision based on evaluation findings.

An in-depth application review was performed for each sampled custom project to assess the engineering methods, parameters and assumptions used to generate all ex ante impact estimates. For each measure in the sampled project, Navigant engineers estimated ex post gross savings based on their review of documentation and engineering analysis. Nicor Gas provided project documentation in electronic format for each sampled project. Documentation included some or all scanned files of hardcopy application forms and supporting documentation from the applicant (invoices, measure specification sheets, and vendor proposals), inspection reports and photos (where available), monthly billing data, and calculation spreadsheets.

2.4 Verified Net Program Savings Analysis Approach

Navigant calculated the verified net energy savings by multiplying the verified gross savings estimates by the NTGR approved through the Illinois Stakeholder Advisory Group (SAG) consensus process.¹²

¹²http://ilsagfiles.org/SAG_files/NTG/2015_NTG_Meetings/Final_2015_Documents/Nicor_Gas_NTG_Summary_GPY_1-5_2015-03-01_Final.pdf.

Table 2-4. Net-to-Gross Ratios for Evaluation of the GPY5 Small Business Programs

Program Path/Measure	Utility	GPY5 Deemed NTG Value
Assessment/Direct Install	Nicor Gas	0.93
Prescriptive Rebates	Nicor Gas	0.93
Custom Incentives	Nicor Gas	0.93

Source: Documents available on the Illinois Energy Efficiency Stakeholder Advisory Group website (www.ilsag.info).

Free ridership and Spillover Research Approach for Future Use

As part of the GPY5 evaluation, the evaluation team conducted free ridership and spillover research with data collected from 75 participating small business customers representing seven percent of the GPY5 total energy savings. For data collection, Navigant conducted a Computer Assisted Telephone Interview (CATI) survey with customers to research questions pertaining to NTG and process. Details of the research methods are described in Appendix 7.1.2. The participant survey instrument is included in Appendix 7.2.

Free ridership was assessed using a customer self-report approach following the Illinois Statewide NTG Methodologies document (IL-NTG Methods).¹³ The core nonresidential free ridership algorithm adopted from the Illinois NTG Methods consists of two scores that represent different ways of characterizing program influence or free ridership: the Program Components Score, which reflects the influence of the most important of various program and non-program related elements in the customer's decision to select the specific program measure; and the No Program Score, which captures the likelihood of various actions the customer might have taken at this time and in the future had program not been available.

The evidence of spillover from the participant survey for SBEEP was assessed based on certain spillover attribution conditions outlined in the IL NTG Methods. In addition, Navigant conducted a survey of participating TAs to investigate free ridership and spillover.

2.5 Process Evaluation and Other Research

Navigant's GPY5 process research activities for the Nicor SBEEP included interviews with program management to verify our understanding of the program design, administration, marketing, and delivery. The evaluation team conducted a CATI survey with participating customers and in-depth interviews with TAs to research questions pertaining to NTG and process. Process research addressed the following topics:

1. Effectiveness of programs delivery
2. Satisfaction with the programs and major program components
3. Opportunities for programs improvement

The evaluation team completed NTG and process surveys with 75 participants from a sample of 572 participants with unique contact numbers of a sample frame of 833 representing unique account names.

¹³ Illinois Statewide Technical Reference Manual for Energy Efficiency, Version 6.0, Volume 4: Cross-Cutting Measures and Attachments, effective June 1st, 2016.

The evaluation team also completed NTG and process interviews with ten TAs from a population of 188. The ten TAs interviewed represent roughly 70 percent of the gross claimed savings.

3. GROSS IMPACT EVALUATION

Navigant performed a verification of the SBEEP tracking database to determine the correctness and reasonableness of the data used to calculate program savings from rebated measures installed through the program. Navigant used measure quantities, program tracking data and supplemental data of equipment specifications supplied by Nicor Gas as inputs to Illinois TRM algorithms to determine verified gross savings. For custom project verification, Navigant reviewed project files and custom inputs. Navigant estimated that the GPY5 Small Business Program achieved verified gross savings of 1,256,156 therms and a 98 percent verified gross realization rate.

3.1 Tracking System Review

The purpose of the tracking system review was to ensure the system gathers the required data to correctly calculate program savings. Nicor Gas and CLEAResult delivered tracking data in December 2016. Navigant's initial analysis of the tracking data indicated that the data fields had not changed from the previous year. Navigant relied on the TRM (v4.0) as the basis for verifying the deemed measure savings. Similar to GPY4, the savings input parameters for some measures, including space and process heating equipment and pipe insulation, did not produce the claimed savings. Nicor Gas provided supplemental data to back up the assumptions behind the ex ante savings for the custom inputs. Navigant's savings verification approach used custom inputs when provided in the program tracking data or the supplemental custom data provided by Nicor Gas; when not provided, we defaulted to the TRM values.¹⁴

Key measure-specific findings from the tracking system review are provided below.

1. **Pipe Insulation: 100% RR, 42% of Program Net Savings.** Navigant found that the TRM has more differentiation of system configurations and recirculation approaches when selecting deemed values for pipe insulation than reflected in the SBEEP tracking system. The tracking system has limited description of the pipe location for certain projects, such that the thermal regain adjustment values provided in the tracking system do not always produce the claimed savings. In some cases, deemed heating season recirculation operating hours were used but the tracking system shows the equivalent full load hours (EFLH) by building type for heating. The claimed savings for direct install domestic hot water (DHW) is based on a 75 percent recovery efficiency of the gas water heater instead of the 78 percent deemed value. Evaluation adjustments resulted in reduction of pipe insulation savings by 389 therms, but the overall gross realization rate remained 100 percent. Navigant acknowledges that CLEAResult has taken steps to update the tracking system inputs for pipe insulation in GPY6, to ensure the inputs reflect the savings calculations.
2. **Steam Traps: 96% RR, 34% of Program Net Savings.** Navigant verified that dry cleaner steam traps had 100 percent gross savings realization rate. Commercial steam traps had 70 percent gross realization. Three commercial heating steam trap projects (PRJ-484319, PRJ-484338, and PRJ-484315), which were not audited, according to CLEAResult, were verified to have an average savings of 89 therms per trap, compare to the ex ante 245 therms per trap, using site-

¹⁴ Navigant's retrospective verification of custom inputs was not constrained to using values provided on the application form or supplemental program tracking data provided by Nicor Gas.

specific custom pre and post efficiency values, HOU, and the TRM deemed leaking or blow-through adjustment factors. The overall gross realization rate for steam traps is 96 percent.

3. **Space Heating Equipment: 103% RR, 12% of Program Net Savings.** Navigant found that the space heating equipment, including efficient boilers, furnaces, boiler tune-ups, and boiler reset controls, had 100 percent or higher verified gross savings realization rates. This is mostly due to evaluation adjustment of the EFLH by building type based on the designated climate zone. Boiler tune-up in particular realized 109 percent of savings after adjusting the savings from one project (PRJ-535896), which was reported with 106 therms savings. Upon further review of the boiler heating capacity and pre-and post efficiency values, we verified the project could realize 3,368 therms savings. A limited number of projects used 1,657 EFLH, which is not found in the TRM, and were adjusted to match the deemed TRM values by building type. Navigant acknowledges CLEAResult has updated the program tracking system inputs to reflect EFLH in the TRM version for GPY6.
4. **Custom Projects: 93% RR, 6% of Program Net Savings.** Fifteen custom projects were installed through the program in GPY5. Navigant requested documentation for the projects, and performed engineering file reviews and billing analyses for a random sample of 9 projects. Of these, Navigant verified that three projects had 100 percent verified gross realization rate, two projects had a realization rate above 100 percent, and four projects had savings adjusted downward with realization rates below 100 percent. The weighted average gross realization rate for the 9 sampled projects was 93 percent, which was precise to within ± 8 percent at a 90 percent confidence level. This was applied to the population of 15 custom projects.

One custom project (PRJ-360851), a building automation system (BAS) installation, was verified to have a negative realization rate. The ex ante savings estimate was generated by billing analysis that relied on eight months of post-installation usage history. However, due to unforeseen circumstances during the period (museum was closed for seven of those months' due flood damage, and only three months had appreciable heating degree-days), Navigant requested additional usage history. The ex post estimate used the same approach as the ex ante, but with 14 months of additional usage history, and resulted in negative savings of 1,442 therms. Navigant identified a number of possible explanations for why post-installation gas usage increased, including: poor BAS commissioning, repair of outside dampers, adjusting ventilation levels, or other changes to the existing facility (e.g., expansion, change in purpose). Navigant determined the verified savings for this project should be set to zero in the population roll up savings.

In two cases of custom projects involving boiler replacements (PRJ-383711 and PRJ-499089), the ex ante savings calculations compared a baseline of *thermal efficiency* to a proposed condition of *combustion efficiency* to generate the savings estimates. These are not equivalent metrics. In project PRJ-499089, the proposed boiler had a combustion efficiency of 86.1% and an Air-Conditioning, Heating, and Refrigeration Institute (AHRI) tested thermal efficiency of 80%, which is the baseline as defined in the Illinois TRM. As a result, no savings was claimed for an increase in boiler efficiency in the verified savings.

5. **Programmable Thermostats: 92% RR, <1% of Program Net Savings.** Navigant reviewed the savings input assumptions for the programmable thermostat measures and compared the ex ante savings by building type and climate zone. Our findings indicate that the program did not consistently apply the deemed assumptions to generate the claimed savings, and thereby overestimated the calculated savings for several projects. For instance, an assembly building type under the same conditions are estimated to have different per-unit thermostat savings. In

some cases, the program used 34.27 therms per thermostat for unknown building type. This weighted average savings value was adopted from an estimate taken from the Business Energy Efficiency Rebate (BEER) program.¹⁵ Navigant reviewed the source of this estimate, and calculated the GPY5 verified savings separately for each participating building type, without assigning any weight and using GPY5 participation. We estimated 37.85 therms as an average savings value that can be applied to unknown building type. Navigant acknowledges CLEAResult has updated programmable thermostat savings methodology to reflect building type from the building type list in the TRM version for GPY6.

6. **Commercial Pool Covers: 39% RR, <1% of Program Net Savings.** The ex ante savings from commercial outdoor pool cover did not apply the TRM savings adjustment factor of 1.01, but rather the 2.61 savings adjustment factor for indoor pool covers. Navigant made the correction and calculated 39 percent verified gross realization rate for the measure. Navigant acknowledges CLEAResult has corrected the error in the savings calculations for pool covers for GPY6.
7. **Other Measures:** Navigant verified 100 percent realization for all other program measures, including storage water heaters, kitchen and water efficient measures; some with very minor adjustments due to rounding differences.

3.2 Program Volumetric Findings

Table 3-1. provides a detailed description of the GPY5 SBEEP participants by program channel. The program had a total of 778 participants, of which 265 received no-cost direct install products or free assessment services, 498 received prescriptive incentives, and 15 received custom incentives. A total of 1,071 projects were completed through the GPY5 program, comprising the installation of 5,094 measures.

Table 3-1. GPY5 Primary Participation Detail

Participation	Direct Install	Prescriptive Incentive	Custom Incentive	Program Total
Participants ¹⁶	265	498	15	778
Completed Projects ¹⁷	430	626	15	1,071
Installed Measures ¹⁸	3,099	1,980	15	5,094

Source: Program tracking data and Navigant analysis.

Figure 3-1. shows the GPY5 volumetric measure counts by end-use category. Direct install water efficiency measures accounted for 58 percent of the measure count, followed by steam trap replacements with 25 percent, HVAC with 9 percent, pipe insulation with 6 percent, and the remaining categories with 2 percent. Table 3-2. provides a breakdown of the GPY5 participants by program rebate units.

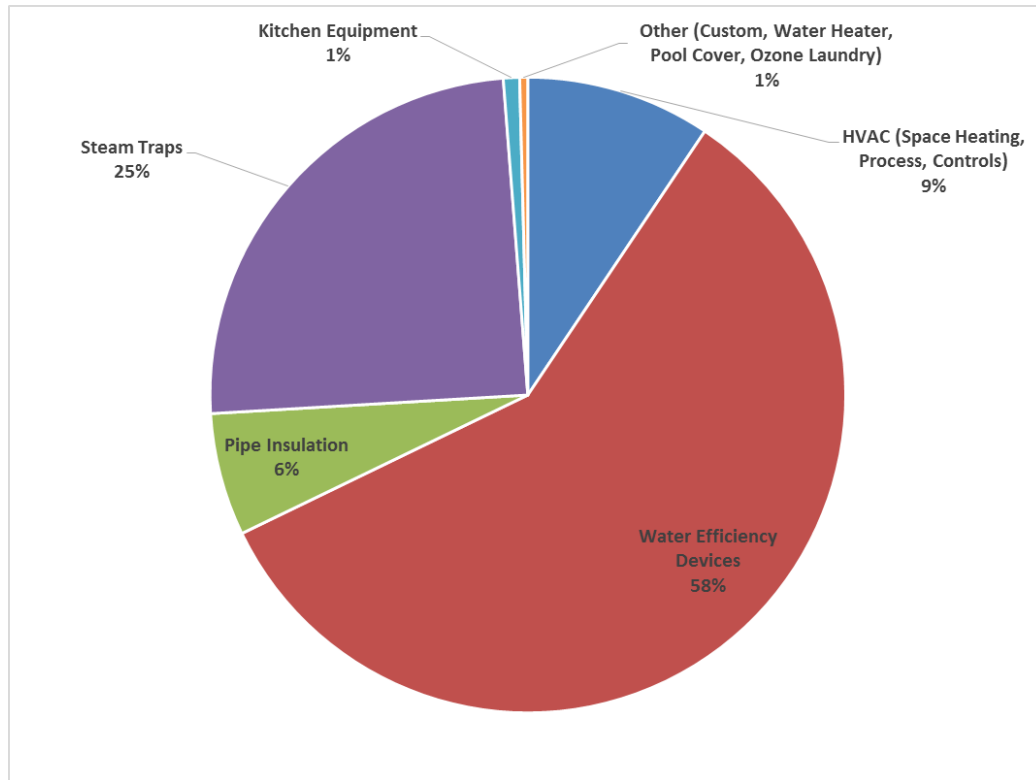
¹⁵ The implementation contractor used TRM assumptions to determine the therm savings value for each building type. From there, each building type was assigned a weight type according to past participant data (building type actuals from thermostat participation in PY4).

¹⁶ Participants are defined based on the number of business accounts or names reported in the tracking system.

¹⁷ Projects are defined based on the unique applications submitted by customers through the GPY5 program.

¹⁸ For evaluation reporting purpose, if a measure quantity is reported in the tracking system in linear feet, MBH, or square feet, Navigant treated each row entry of such measure as one measure quantity in this table.

Figure 3-1. GPY5 SBEEP Measure End-use Category (Number of Measures)



Source: Program tracking data and Navigant analysis.

Table 3-2. GPY5 SBEEP Installed Measures by Rebate Unit

Measure Category	Unit of Rebate	Ex Ante Quantity	Verified Quantity
DHW WH Pipe Wrap	Linear Feet	894	894
Faucet Aerators	Unit	2,442	2,442
Showerheads	Unit	394	394
Pre-Rinse Spray Valve	Unit	86	86
Salon Sprayer	Unit	54	54
Boiler Reset Controls	Unit	10	10
Boiler Tune Up, Space Heating	Unit	52	52
Convection Oven	Unit	6	6
Conveyor Oven	Unit	6	6
Efficient Boiler	Unit	29	29
Efficient Furnace	Unit	183	183
Fryer	Unit	28	28
Infrared Charbroiler	Unit	1	1
Infrared Heaters	Unit	59	59
Infrared Salamander Broiler	Unit	1	1
Outdoor Pool Covers	Square Feet	2,844	2,844
Ozone Laundry	Unit	1	1
Pipe Insulation	Linear Feet	74,149	74,149
Programmable Thermostat	Unit	146	146
Steam Traps	Unit	1,258	1,258
Storage Water Heater	Unit	4	4
Custom	Unit	15	15

Source: Program tracking data and Navigant analysis.

3.3 Gross Program Impact Parameter Estimates

Navigant verified the ex ante savings using the assumptions and algorithms specified in the TRM v4.0 or through engineering analysis for non-deemed measures and custom inputs. Table 3-3 summarizes the input parameters and unit of savings used to estimate program verified gross savings.

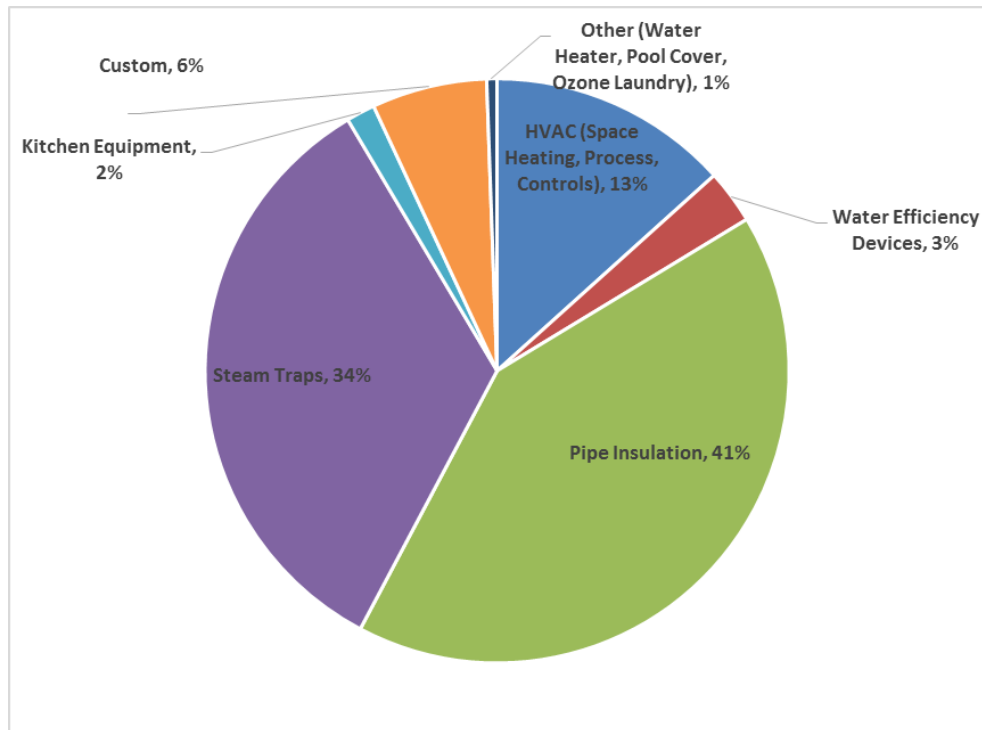
Table 3-3. Verified Gross Savings Parameters

Input Parameter	Value	Unit	Deemed or Evaluated?
Verified Gross Realization Rate	0.98		Evaluated
Faucet Aerator	5.99	therms/unit	Deemed
Showerhead	21.63	therms/unit	Deemed
Pre-Rinse Spray Valve	Vary by restaurant size. Acceptable with minor adjustment to input	therms/unit	Deemed
Boiler Tune Up, Heating	Vary. Ex ante values accepted with adjust to limited number of projects custom inputs	therms/unit	Deemed
Boiler Reset Controls	Vary. Ex ante values accepted with minor adjust to EFLH	therms/unit	Deemed
Efficient Boiler	Vary. Ex ante values accepted with minor adjust to EFLH	therms/unit	Evaluated
Efficient Furnace	Vary. Ex ante values accepted with minor adjust to EFLH	therms/unit	Evaluated
Commercial Pool Cover	2.61 for indoor, 1.01 for outdoor	therms/Sq.ft	Deemed
DHW WH Pipe Wrap	0.99 adjusted from 1.03. Adjusted heat recovery efficiency	therms/Ln.ft	Deemed
Dry Cleaner/HW/Space Heating Pipe Insulation	Vary. Ex ante values accepted with minor adjustment to HOU	therms/Ln.ft	Evaluated
Steam Trap	89.49 Commercial 519.93 dry cleaner	therms/unit	Deemed/ Evaluated
Large Conveyor Oven, >=25 in	367	therms/unit	Deemed
Fryer	505 for standard fryer (E>50%) 578 for Large Vat	therms/unit	Deemed
Salon Sprayer	113.94	therms/unit	Deemed
Infrared Charbroiler	661	therms/unit	Deemed
Infrared Heaters	451	therms/unit	Deemed
Infrared Salamander Broiler	239	therms/unit	Deemed
Programmable Thermostat	Vary. Adjustment for savings factors based on building type and location	therms/unit	Deemed
Ozone Laundry	3,533	therms/unit	Deemed
Storage Water Heater	251 for >88% TE, 148 for EF>67%	therms/unit	Deemed

Source: Navigant analysis

Figure 3-2 shows the GPY5 verified measure savings by end-use category. Pipe insulation measures had the largest share of program savings, contributing 41 percent of GPY5 verified gross savings, followed by steam traps with 34 percent, custom measures with 6 percent, and the remaining 19 percent from all other program measures.

Figure 3-2. GPY5 SBEEP Verified Savings by End-use Category



Source: Program tracking data and Navigant analysis.

3.4 Development of the Verified Gross Realization Rate

Navigant determined the verified gross realization rates by comparing the ex ante gross savings with the verified gross savings. The overall program verified gross realization rate is 98 percent. Results by measure are summarized in Table 3-4.

Table 3-4. Verified Gross Savings by Measure

Measure End-use	Measure	Ex Ante Gross Savings (Therms)	Verified Gross Realization Rate*	Verified Gross Savings (Therms)
Direct Install Water Efficiency	Faucet Aerators	14,628	1.00	14,631
	Showerheads	8,517	1.00	8,523
	Salon Sprayer	6,153	1.00	6,153
	Pre-Rinse Spray Valve	8,247	1.00	8,251
HVAC/Process Heating	Boiler Reset Controls	16,150	1.02	16,465
	Boiler Tune Up, Space Heating	39,445	1.09	42,819
	Efficient Boiler	32,105	1.00	32,231
	Efficient Furnace	43,635	1.01	44,217
	Programmable Thermostat	5,600	0.92	5,138
	Infrared Heaters	26,609	1.00	26,609
Commercial Kitchen Equipment	Convection Oven	1,836	1.00	1,827
	Conveyor Oven	2,199	1.00	2,199
	Fryer	15,016	1.00	15,018
	Infrared Charbroiler	661	1.00	661
	Infrared Salamander Broiler	239	1.00	239
Pipe Insulation	DI DHW WH Pipe Wrap	921	0.96	886
	Dry Cleaner/HW/Space Heating Pipe Insulation	520,040	1.00	519,686
Steam Traps	Steam Traps	439,004	0.96	423,259
Other	Outdoor Pool Covers	7,423	0.39	2,872
	Ozone Laundry	3,533	1.00	3,533
	Storage Water Heater	798	1.00	798
	Custom Measures	86,055	0.93	80,141
GPY5 Total		1,278,814	0.98	1,256,156

Source: Program tracking data and Navigant analysis.

* Based on evaluation research findings.

Table 3-5 shows the disaggregated custom gross savings realization rate by stratum at the custom population level, based on a statistical ratio estimation method that rolls over the sample strata realization rates to the population. The details of the sample level realization rate by strata are provided in the Appendix 7.1.

Table 3-5. GPY5 SBEEP Custom Projects Savings Estimates

Savings Strata	Ex Ante Gross Savings (Therms)	Verified Gross Realization Rate*	Verified Gross Savings (Therms)
1	35,161	1.01	35,392
2	26,553	1.03	27,364
3	24,341	0.71	17,385
Total	86,055	0.93	80,141

Source: Navigant analysis

* RRs are sample weighted therms realization rate values rounded to 2 digits. Direct application to the ex ante gross savings to get verified gross savings will produce rounding differences.

The overall weighted gross realization rate for the custom projects was 93 percent at the custom population level, estimated with statistical relative precision at ± 8 percent at a 90 percent confidence level.

3.5 Verified Gross Program Impact Results

As shown in Table 3-6, the savings adjustments discussed above affected the verified savings and resulted in verified gross realization rate of 0.98 at the program level. The difference between the ex ante gross savings and the verified gross savings is 22,658 therms. Of the total program verified gross savings of 1,256,156 therms, direct install measures accounted for approximately three percent; the prescriptive component, 91 percent; and the custom component, six percent.

Table 3-6. PY5 Verified Gross Impact Savings Estimates

Program Category	Ex Ante Gross Savings (Therms)	Verified Gross Realization Rate	Verified Gross Savings (Therms)
Direct Install	38,466	1.00	38,322
Prescriptive Incentives	1,154,293	0.99	1,137,693
Custom Incentives	86,055	0.93	80,141
GPY5 Total	1,278,814	0.98	1,256,156

Source: Program tracking data and Navigant analysis.

4. NET IMPACT EVALUATION

For GPY5, Navigant used the Illinois SAG approved deemed NTG value of 0.93 to calculate net savings for the Small Business Program. To calculate the verified net savings, Navigant multiplied the verified gross savings by the deemed NTG ratio. Table 4-1. presents the program net savings.

Table 4-1. GPY5 Verified Net Impact Savings Estimates

Program Category	Verified Gross Savings (Therms)	Net-to-Gross Ratio*	Verified Net Savings (Therms)
Direct Install	38,322	0.93	35,639
Prescriptive Incentives	1,137,693	0.93	1,058,055
Custom Incentives	80,141	0.93	74,532
GPY5 Total	1,256,156	0.93	1,168,226

Source: Utility tracking data and Navigant analysis.

* Source: http://ilsagfiles.org/SAG_files/NTG/2016_NTG_Meetings/Final_Documents/Nicor_Gas_NTG_Summary_GPY1-6_2016-02-29_Final.pdf

The 1,168,226 therms verified net savings figure is 204 percent of the program net savings goal of 573,247 therms.¹⁹

¹⁹ Nicor_Gas_GPY5_Q4_Report_Appendix_A.pdf

5. PROCESS EVALUATION

Navigant's GPY5 process research activities for the Nicor Small Business program included interviews with program management to verify our understanding of the program design, administration, marketing, and delivery; a CATI survey with participating customers; and in-depth interviews with TAs to research questions pertaining to NTG and process. Process research addressed the following topics:

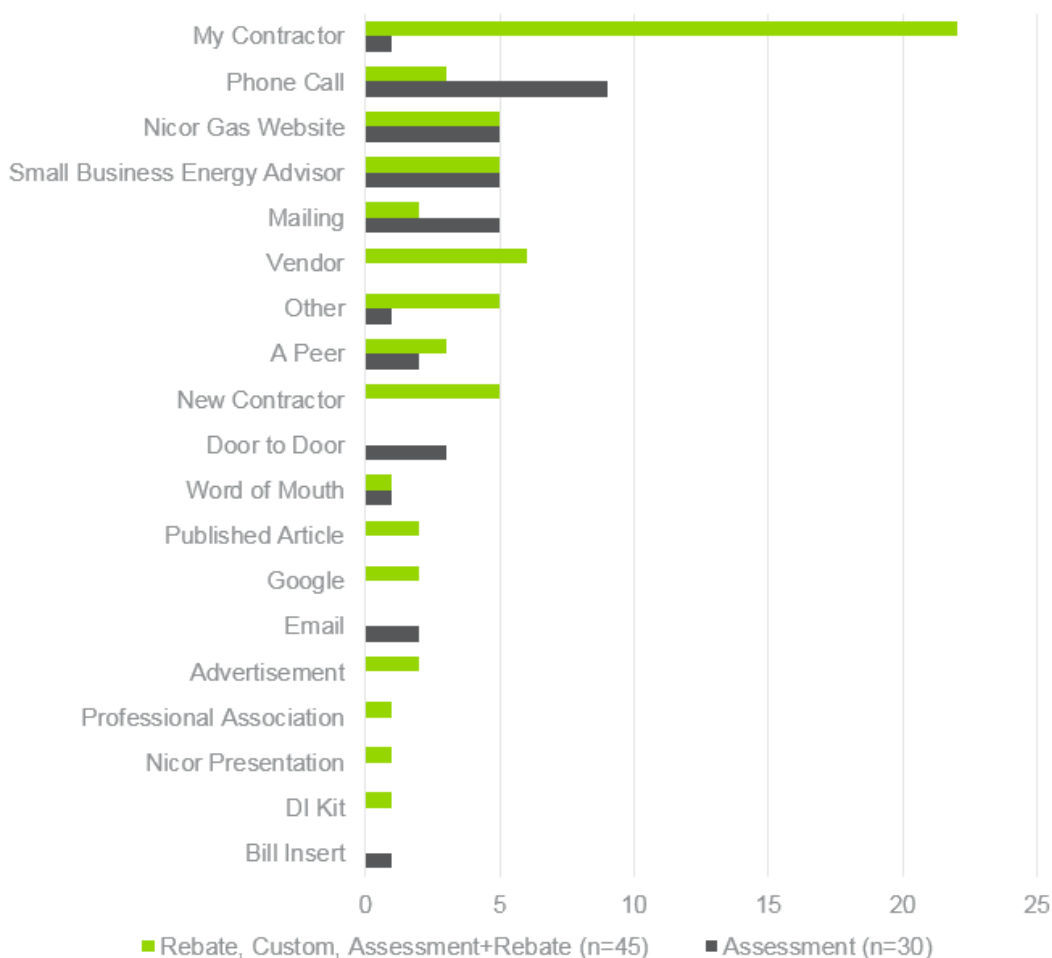
1. Effectiveness of programs delivery
2. Satisfaction with the programs and major program components
3. Opportunities for programs improvement

The evaluation team completed a NTG and process interview with 75 participants out of 572 unique participant contact numbers drawn from a sample frame of 833 representing unique account names. Of these participants, less than 1 percent included incorrect contact data; 10 percent of those reached refused to be surveyed. The evaluation team also completed NTG and process interviews with ten TAs from a population of 188. The ten TAs interviewed represent roughly 70 percent of the gross claimed savings.

5.1 Program Delivery

The evaluation team asked participants how they recalled initially hearing about the program. Forty-nine percent of Rebate (Rebate, Custom, and Assessment+Rebate) participants reported hearing about the program through a TA, while 9 percent heard about the program through communication from the program, such as advertisements or mailings. Conversely, 86 percent of participants in the Assessment path reported first hearing about the program through program channels, including email, door-to-door promotions, and telephone calls, as shown in Figure 5-1. Twenty-four percent of all participants recall receiving any communication through the program.

Figure 5-1. Participant Initial Awareness of Program

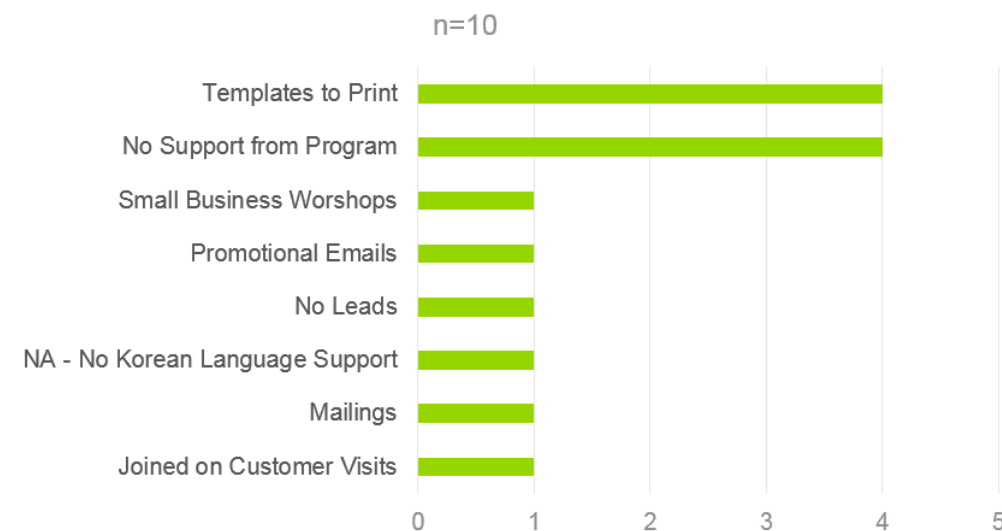


Source: Evaluation Analysis.

TAs who asked their customers how they heard of the program reported that 71 percent first hear of it from them (the TA). Half of TAs believe that their customers tell peers and friends about the program, with one offering, “[We] tend to deal with a lot of churches, and churches in the same denomination will talk with each other.”

TAs cited scant support from the program in their efforts to attract customers, as shown in Figure 5-2. one commenting, “we know it’s pretty much from our efforts” and “ninety-five percent is coming from me.” One TA reported that “some [customers] hear about the program on the residential side, then they find the program on the business side.”

Figure 5-2. Implementer Marketing Support as Reported by Trade Allies

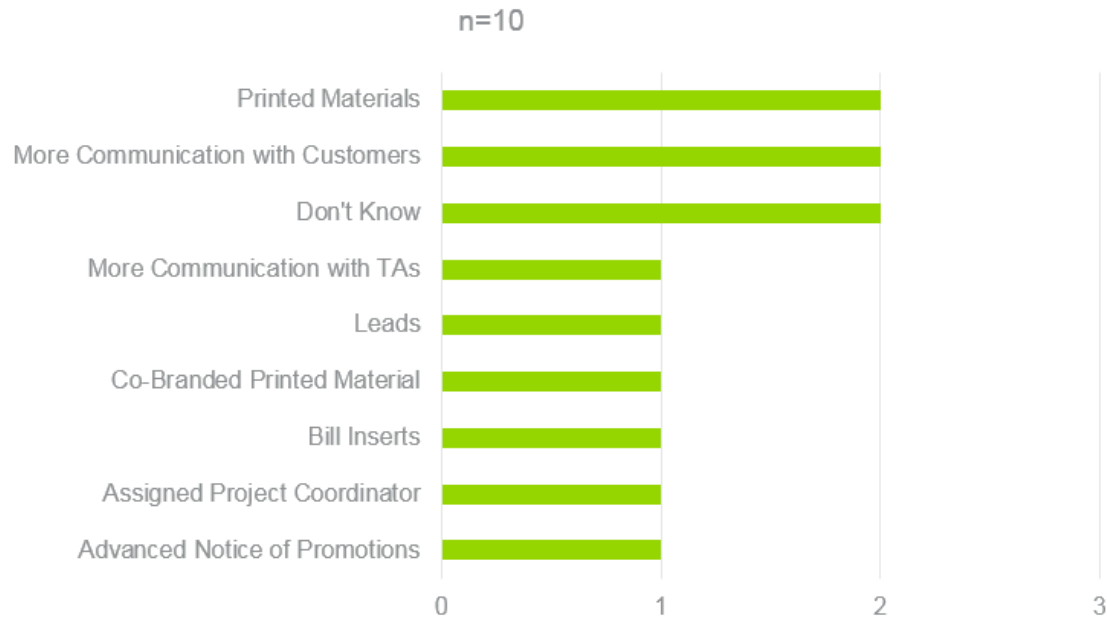


Source: Evaluation Analysis.

The evaluation team asked TAs how the implementer could more effectively support their marketing efforts of the Rebate program; the high-level results are shown in Figure 5-3. Comments focused on two areas of desired marketing support from the program:

- Communication & Promotion
 - o *"Give me heads up of promotions weeks in advance, allowing me to prepare to promote it to my customers."*
 - o *"If they were doing some outreach on their own, and that could help us if we had a flyer highlighting small business and showing that we are a trade ally contractor, cobranded, and highlighting what's available for small business"*
- Operations
 - o *"If we had a project coordinator assigned to us to assist us to get things processed. They have program reps, but nobody is trying to bring projects to us. Usually CR wants us to bring customers who need an energy assessment to them. So it's kind of backwards. They have the presence and the backing in the market place to reach and yet they want us to bring the projects to them."*

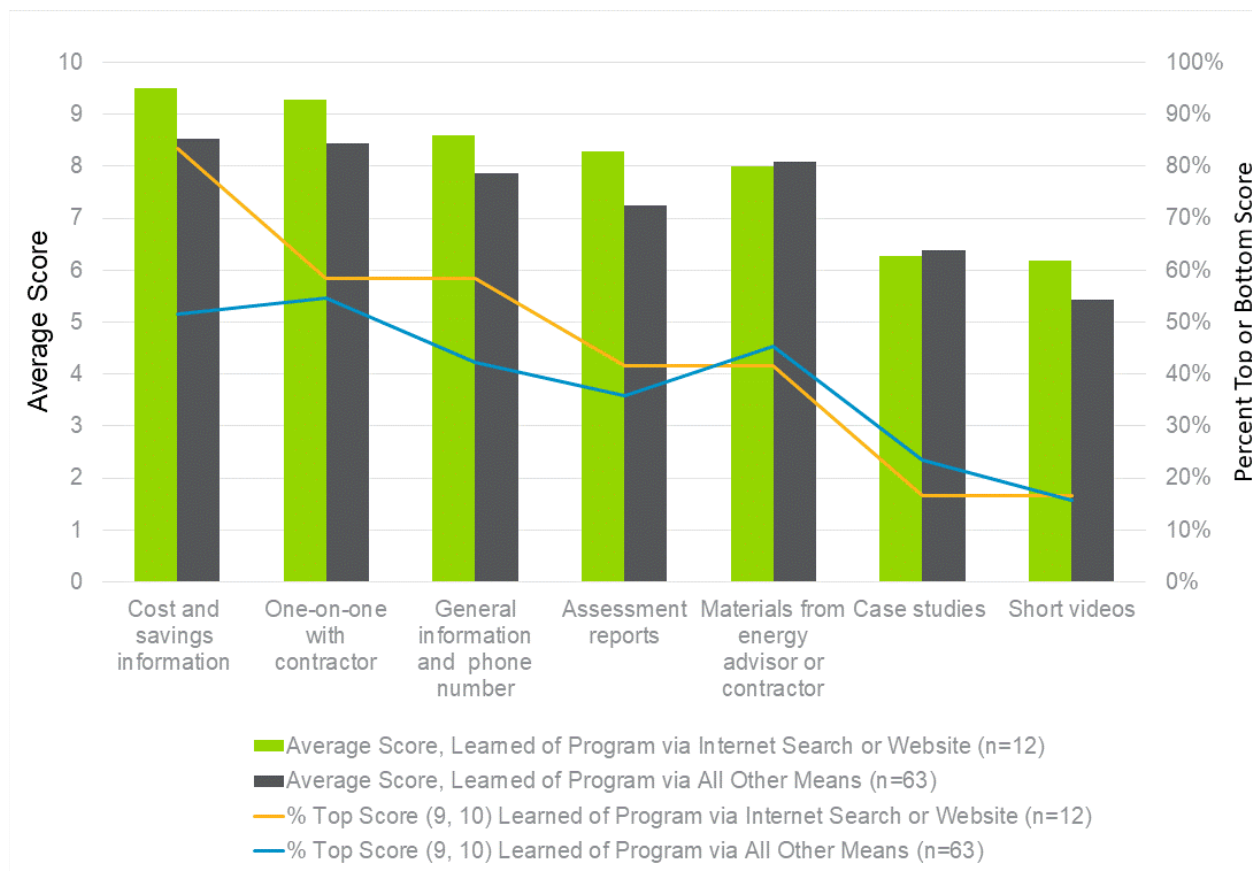
Figure 5-3. More Effective Implementer Marketing Support as Reported by Trade Allies



Source: Evaluation analysis.

Participants who actively sought out the program – for example, learning about it by conducting an internet search or visiting the utility website – reported different sources of information to be most useful compared to more passive participants, who only acted upon information received from the program, as shown in Figure 5-4. These “active searchers” had significantly different “top box” ratings (the nine or ten ratings on a scale of zero to ten) for cost and savings information, and how to take the next step to participation in the program, compared to participants who learned of the program through other, more passive means.

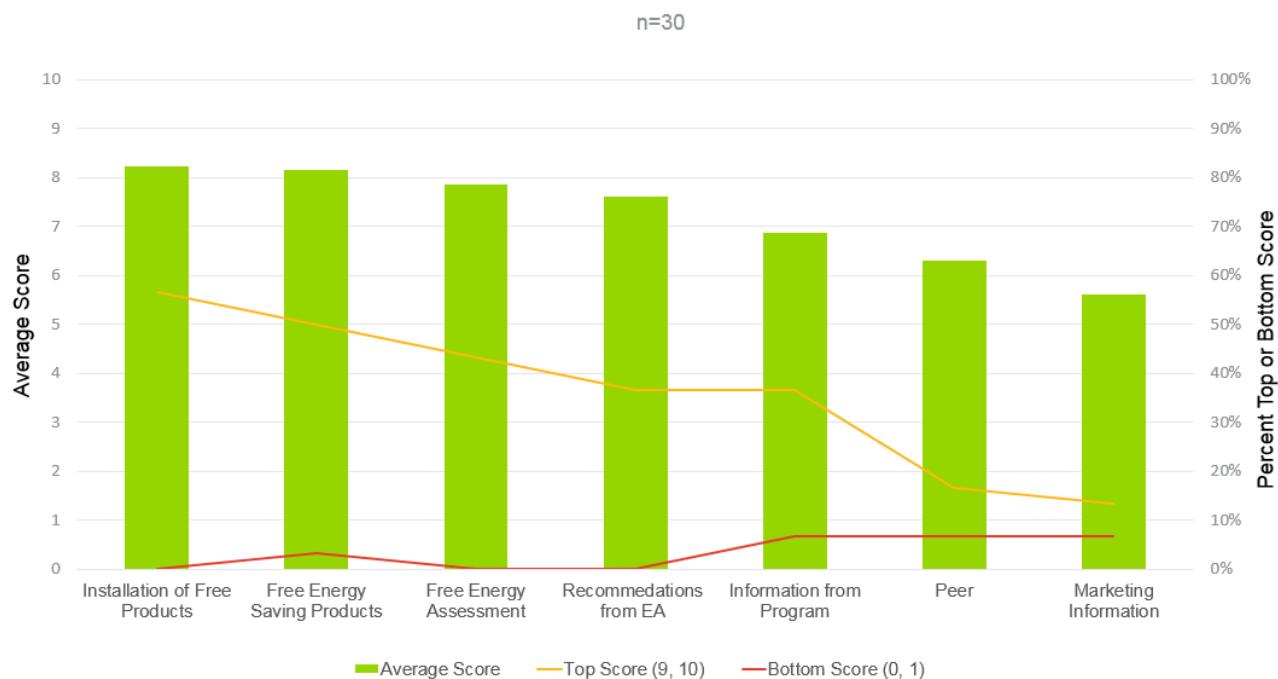
Figure 5-4. Usefulness of Program Information by Website Users and Other Participants



Source: Evaluation analysis.

The top motivating factors cited by Assessment participants were the potential savings available through the installation of free energy saving equipment, and the availability of the free energy assessment. Participants were asked to rate the motivation attributable to various program elements on a scale of 0-10, where zero means “not at all motivating” and ten means “extremely motivating.” The results are shown in Figure 5-5.

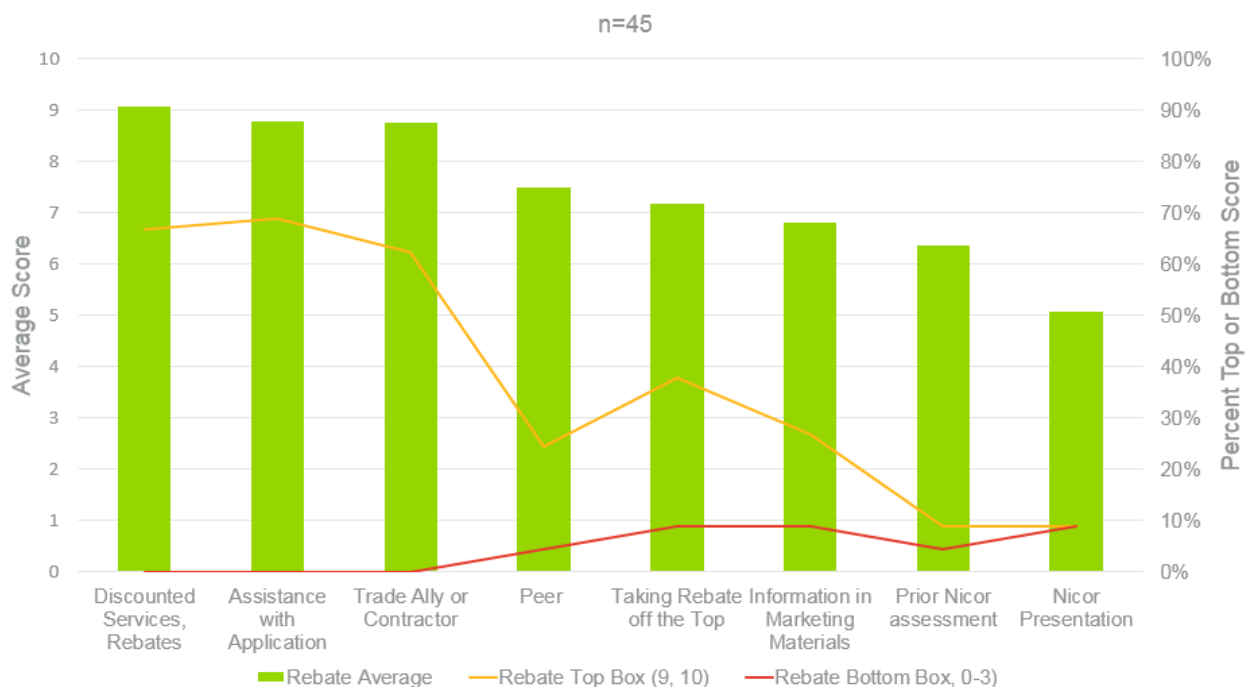
Figure 5-5. Motivations for Assessment Participants



Source: Evaluation analysis.

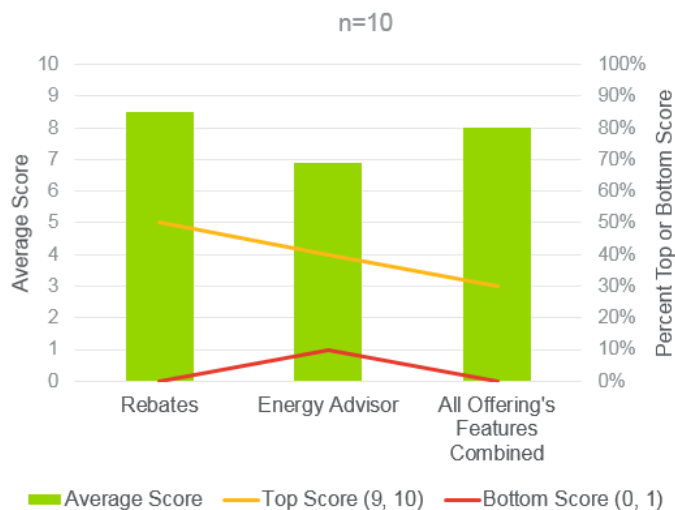
Participants in the Rebate paths were motivated to participate in the program by the discounted services, assistance from their TA in completing the rebate application, and the recommendation of their TA, as shown in Figure 5-6. The TAs reported that rebates were the greatest motivator to their customers, as shown in Figure 5-7. enjoying a median rating of 8.5 on a scale of zero to ten with fifty percent top scores (9 or 10).

Figure 5-6. Motivations for Rebate Participation



Source: Evaluation analysis.

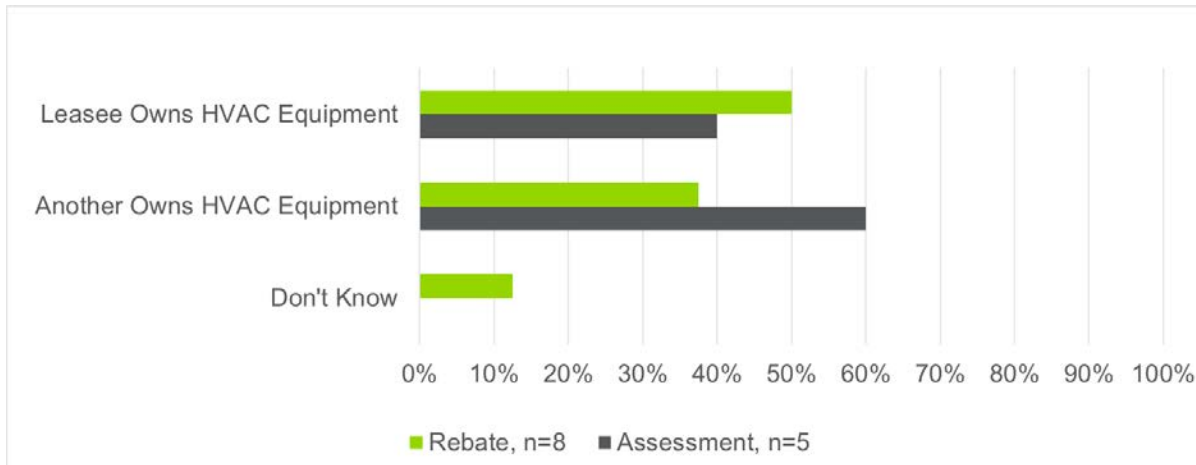
Figure 5-7. Motivations for Rebate Participation as Reported by Trade Allies



Source: Evaluation analysis.

Eighty percent of the Assessment and 76 percent of the Rebate participants reported owning their facility, which yielded an average of 79 percent ownership overall. Of the participants who reported leasing their facility, 50 percent of the Rebate participants own the HVAC equipment in their rented facility, as shown in Figure 5-8.

Figure 5-8. HVAC Ownership in Leased Facilities



Source: Evaluation analysis.

5.2 Program Satisfaction

The Navigant evaluation team asked participants about their satisfaction with various aspects of the programs, requesting that they rate their satisfaction on a scale of 0-10, where zero means “very dissatisfied” and ten means “very satisfied.” The results of this research are offered in Figure 5-9 for the Assessment participants and Figure 5-10 for Rebate participants.

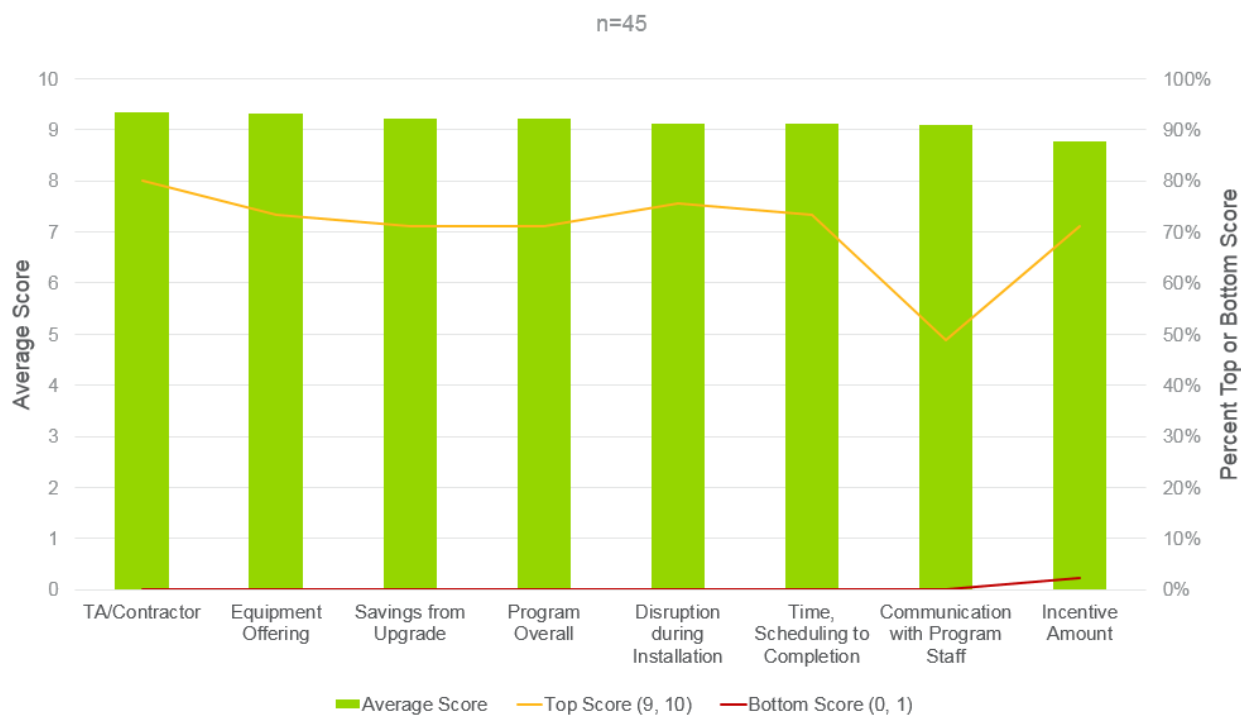
Figure 5-9. Assessment Participants' Satisfaction with the Small Business Program



Source: Evaluation analysis.

The Assessment participants were less satisfied with the program, both by median satisfaction and the percent of top scores, compared to the Rebate participants. Top scores for rating the “Program Overall,” for example, were 41 percent among the Assessment and 70 percent among the Rebate participants. Evaluating the cost effectiveness of the paths within the program, the weighted average cost to deliver a therm saved is \$1.94 for Assessment participants and \$1.41 for Rebate participants, without factoring in the \$400 utility cost per Assessment.

Figure 5-10. Rebate Participants' Satisfaction with the Small Business Program



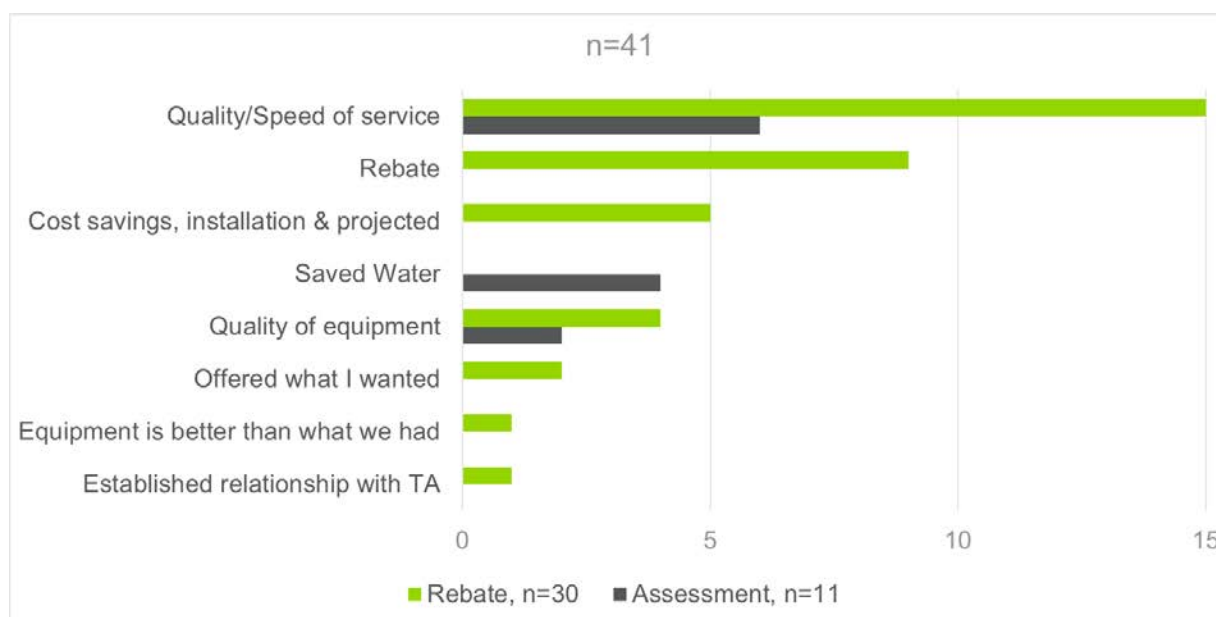
Source: Evaluation analysis.

The evaluation team asked participants who offered a top or bottom score to elaborate. Participants praising the program offered a number of reasons, as shown in Figure 5-11, chief among them the quality and speed of service. Participants' low scores centered around slow or unreceived rebates (2) or lack of suitability because the business was too small or the facility too old (2). One participant complained about the quality of the direct install equipment, saying, "You need more commercial aerators and sprays in a commercial environment, not the same type as you would use at home. The aerators slow down the water, you need a commercial grade. The handle didn't last a month."

Typical of comments supporting high satisfaction ratings were those that focused on:

- The rebate
 - o "It saved money by making the boiler be more energy efficient, and we also got the money back that basically paid for the company to do it all."
- Quality and speed of service
 - o "The contractor made the process very easy, did it in our off-time so there would be no disruption to business or to our employees."
- Availability of desired equipment
 - o "It was the kind of furnace that I wanted. The contractor told me what was new, and mine was old. I hadn't thought about a furnace for a long time, and I chose from his selections."
- Quality of the equipment
 - o "Obviously it makes our furnaces & boilers run more efficiently and that helps in our costs. Electricity & gas are not inexpensive to heat a building the size of ours."

Figure 5-11. Explanation of High Satisfaction Ratings



Source: Evaluation analysis.

All TAs reported satisfaction with the program because, as one TA stated, “it provides us an excellent tool to create more business with our customers.” TAs find that all of their customers are satisfied with the program as well, with comments focusing on the rebates:

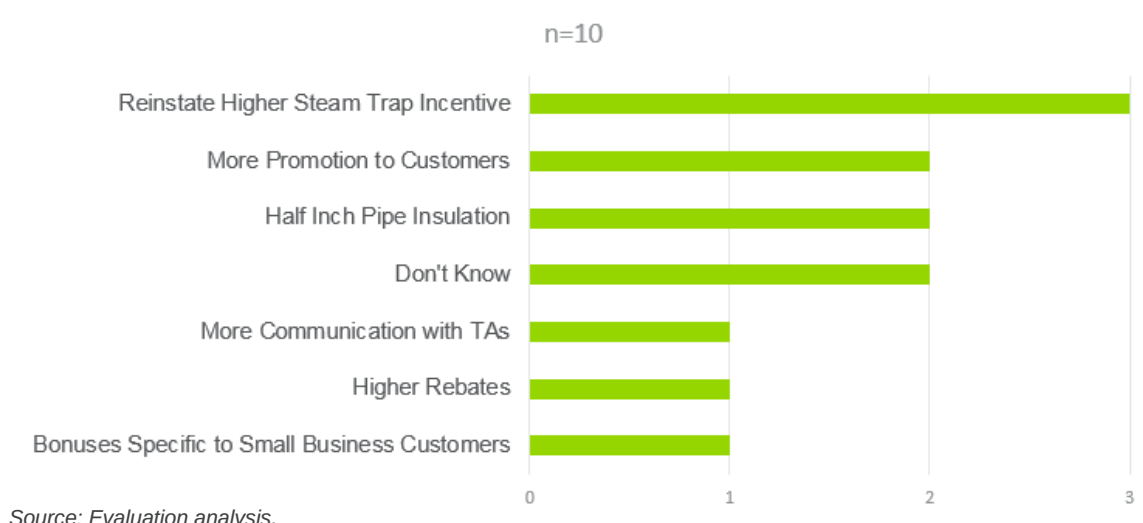
- “A lot of the projects would not go forward without the rebate dollars because there is concern that the energy savings might be speculative but the rebates are real.”
- “If the rebates are attractive enough that customer has zero or low out of pocket costs, they're very happy to get things serviced.”

The TAs report that, on average, it takes three weeks to schedule installations through the program, depending on the equipment involved. Boilers, for example, may require twelve weeks, while steam traps only require one week. The amount of time that it takes the implementer to process payments after the paperwork is submitted ranged from four to twelve weeks, with a reported average time of 5.9 weeks.

5.3 Program Benefits and Recommended Improvements

TAs offered several suggestions to improve the program for the participants, including a return to higher steam trap incentive, with one TA saying, “Three years ago, \$300 per steam trap covered the cost, but now, at \$50 per trap, they've gone down too low.” Two TAs requested adding half inch pipe insulation to the approved equipment list, “especially for dry cleaners, at \$6-7 per foot installed, [allowing] those kinds of projects with minimal customer copayment.” TAs asked the program to “get the info to trade allies and to customers so that we know what's going on,” as shown in Figure 5-12.

Figure 5-12. Recommendations to Make Program More Effective for Participants



Half the interviewed TAs offered suggestions on creating a more effective program for partners such as themselves, divided between communications, i.e., “get info to trade allies and customers so that we know what’s going on,” and operations, i.e., “speed of ... verification of eligibility before we give a rebate because it’s sometimes not completely clear that someone is qualified.” TAs routinely praised the program for offering “[rebates that] are prescriptive, cut and dried, that are very appealing to the customers,” and “good support and creating a lot of business for us over the years.”

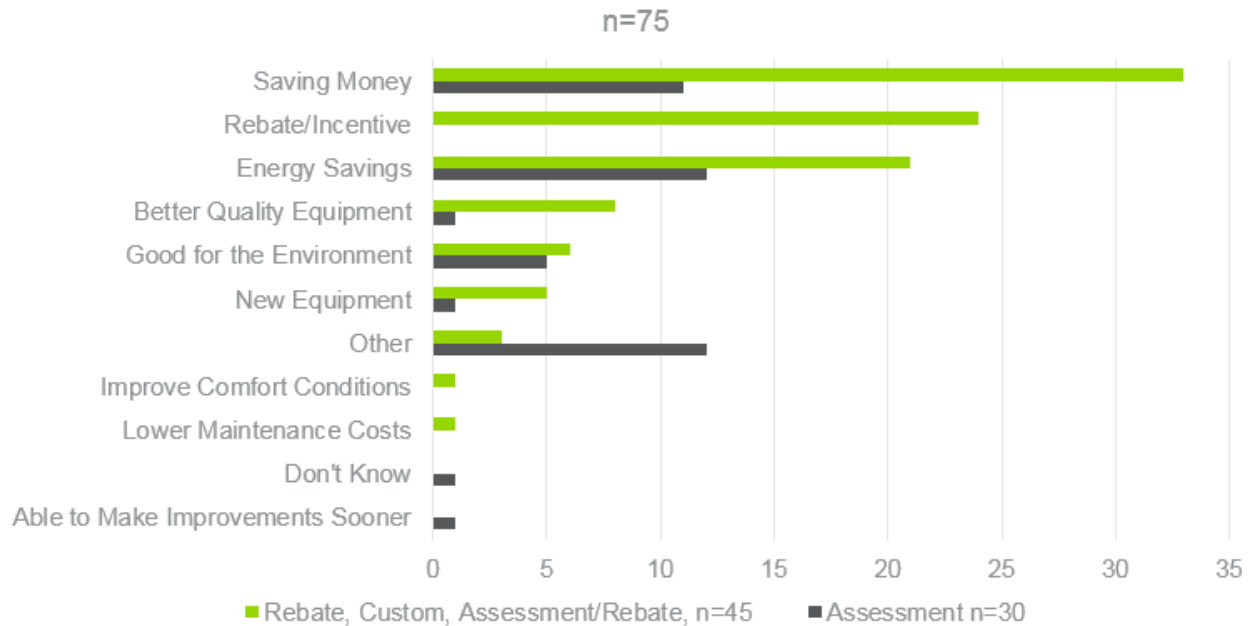
When asked what they most like about the program, TAs reported that it is “easily accessible online, easy to explain to our customer, and in the case of the prescriptive plan, explain exactly how many dollars are available.” Another TA commented that the “boiler tune-up incentive is high enough that it can be a free service, so that we can help our customer save money, and introduce them to other offerings of the program.”

The evaluation team asked TAs what program elements they most wanted to keep, and what elements they would most like to change:

- Program Elements to Keep
 - o Online submittals
 - o Incentive amounts
 - o Prescriptive element
 - o Boiler tune-up
- Program Elements to Change
 - o Offer faster rebate turn-around time
 - o Notify TAs of funding status through the calendar year
 - o Calculate boiler rebates based on MBH input

As shown in Figure 5-13. , program participants reported the Small Business Programs offer several benefits, primarily related to savings: saving energy and saving money.

Figure 5-13. Offering Benefits as Perceived by Participants

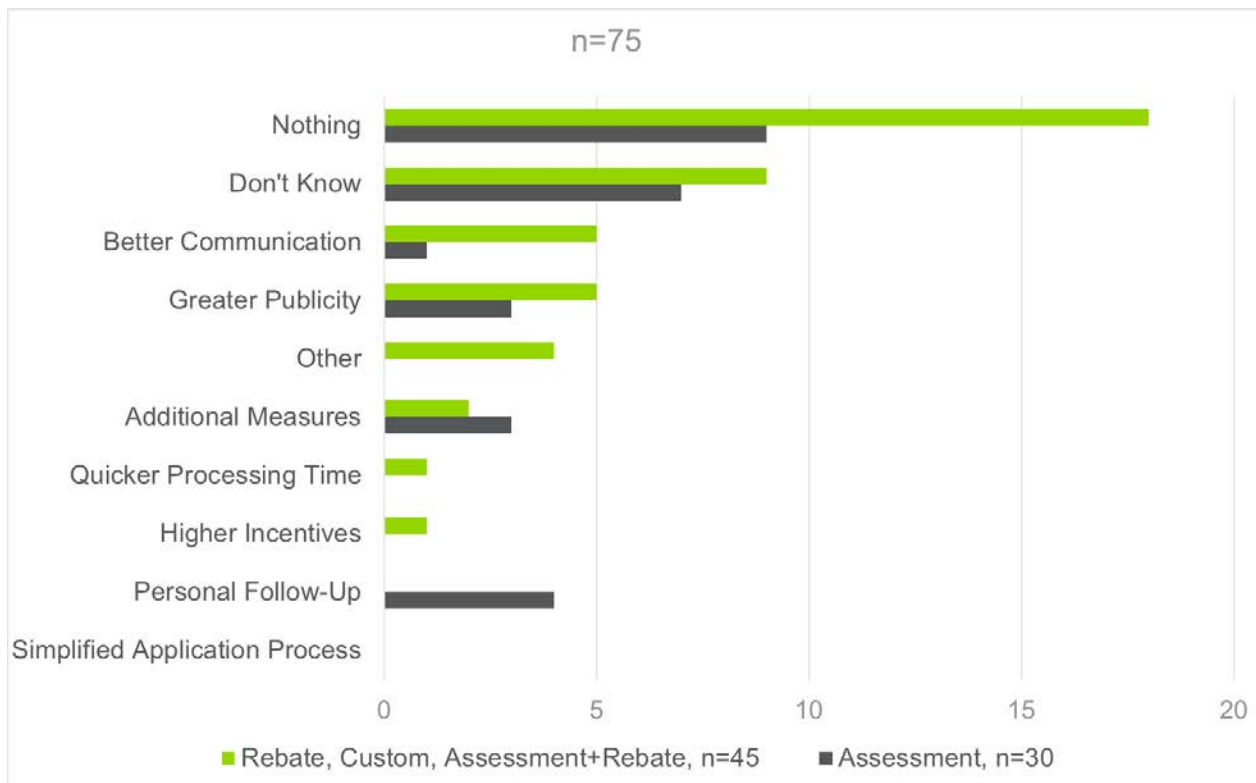


Source: Evaluation analysis.

A minority of participants offered suggestions to improve the program, as shown in Figure 5-14. Rebate participants commented on speedier rebates and improved communication, including a preference for information from contradictory sources:

- *“The HVAC community needs to be contacted. They should be the people you need to reach out to sell on the energySmart programs -- the HVAC contractors.”*
- *“More direct information from Nicor rather than advertisements or whatever. I like my information from the source.”*

Figure 5-14. Recommended Improvements as Perceived by Participants



Source: Evaluation analysis.

6. FINDINGS AND RECOMMENDATIONS

This section summarizes the key findings and recommendations.

Program Savings Achievement

Finding 1. Navigant verified net savings of 1,168,226 therms for the GPY5 Small Business Program, based on the SAG approved program level NTG ratio of 0.93. The verified net savings is 204 percent of the program net savings goal of 573,247 therms.²⁰ Most of GPY5 savings were realized from pipe insulation measures, which contributed 41 percent of the verified net savings, followed by steam traps with 34 percent, custom measures with 6 percent, and the remaining 19 percent from the other program measures, including water efficiency measures, kitchen equipment, water heaters and space heating equipment.

Gross Realization Rates

Finding 2. Navigant calculated an overall gross savings realization rate of 0.98 for the Small Business Program for GPY5. This is based on verified gross savings of 1,256,156 therms, a decrease of 22,658 therms compare to the ex ante 1,278,814 therms. Notable adjustments were made to ex ante savings from commercial steam traps, DHW pipe wrap, programmable thermostats, boiler reset controls, boiler tune-ups, outdoor pool covers, and some custom measures. Details of the measure-level adjustments are presented in Section 3.

Finding 3. Navigant performed engineering reviews on a random sample of 9 of 15 custom projects implemented in GPY5, and verified the reasonableness of the custom inputs used to calculate the ex ante savings. Of the 9 projects, three had 100 percent verified gross realization rate, two projects had a realization rate above 100 percent, and the other four projects had savings adjusted downward with realization rates below 100 percent. The weighted average gross realization rate of the sampled overall custom projects was 93 percent, which was applied to the population of 15 custom projects. This value is precise to within ± 8 percent at a 90 percent confidence level. Details of the findings on the custom projects are highlighted below and in Appendix 7.2.

Finding 4. One custom project (PRJ-360851), a building automation system (BAS) installation, was verified to have a negative realization rate. The ex ante savings estimate was generated by a billing analysis that relied on eight months of post-installation usage history. However, due to unforeseen circumstances during the period (museum was closed for seven of those months due to flood damage, and only three months had appreciable heating degree-days) additional usage history was requested for verification. The ex post estimate used the same approach as the ex ante, but with 14 months of additional usage history, and resulted in negative savings of 1,442 therms. Navigant determined the verified savings for this project should be set to zero in the population roll up savings.

Recommendation 1. To avoid unnecessarily penalizing BAS or other projects that experience a facility closure or other disruptions during the program year, we recommend documenting any changes (e.g., increasing ventilation levels to meet code requirements) to the facility operation that would result in an increased post-installation usage.²¹

²⁰ Nicor_Gas_GPY5_Q4_Report_Appendix_A.pdf

²¹ CLEAResult acknowledges the need to identify and track facility changes as part of custom projects review and determining appropriate baseline conditions.

Finding 5. Two custom projects involving boiler replacements (PRJ-383711 and PRJ-499089) compared a baseline of *thermal efficiency* to a proposed condition of *combustion efficiency* to generate ex ante savings estimates. Thermal efficiency and combustion efficiency are not equivalent metrics. In project PRJ-499089, the proposed boiler had a combustion efficiency of 86.1% and an Air-Conditioning, Heating, and Refrigeration Institute (AHRI) tested thermal efficiency of 80%, which is the baseline as defined in the Illinois TRM. As a result, Navigant determined no savings should be claimed for an increase in boiler efficiency in the verified savings.

Recommendation 2. Ensure that savings estimates are always based on comparison of equivalent metrics. In the example cited in Finding 5, the combustion efficiency appeared to indicate equipment that was more efficient than the baseline thermal efficiency, but this was not the case: thermal efficiency includes additional losses (e.g., radiation) that aren't captured by combustion efficiency, so the two are not comparable.²²

Tracking System Review

Finding 6. Navigant verified most of the space-heating boiler and control and furnace projects had 100 percent gross savings realization rate, with savings inputs consistent with the TRM (v4.0). A limited number of projects used 1,657 equivalent full load hours (EFLH), which is not found in the TRM. One Boiler tune-up project (PRJ-535896) was reported to have 106 therms savings, but upon evaluation review of the reported boiler heating capacity and pre- and post-efficiency values, Navigant verified that the project could save 3,368 therms.

Recommendation 3. Review the tracking system EFLH values for HVAC systems, and ensure consistent use of the deemed assumptions and apply appropriately. Ensure the tracking heating loads and custom efficiency values are consistent with the claimed savings estimates. Navigant acknowledges CLEAResult is making the necessary tracking changes to be consistent with the TRM version approved for GPY6.

Finding 7. Navigant found that the tracking system savings input assumptions that feed into the ex ante savings calculations for several project categories, including pipe insulation, outdoor pool covers, programmable thermostats, and low-pressure industrial steam traps, did not produce the claimed savings or were incorrectly populated. There are more system configurations and recirculation approaches when selecting deemed values for pipe insulation than Nicor Gas defined in the tracking system.

Recommendation 4. Review the tracking system input parameters for pipe insulation, and ensure that the description of the pipe locations adequately reflect the applied thermal regain adjustment factors for savings from space heating systems. For heating season recirculation systems, ensure that the tracking system accurately tracks the seasonal recirculating operating hours from the TRM section for pipe insulation, not the EFLH by building type in the HVAC section.

Recommendation 5. Review the measure description and the tracking savings input assumptions for the "commercial steam trap <15 psig," to be consistent with other commercial steam trap projects that use TRM deemed inputs. The custom efficiency values are reasonable.

Recommendation 6. Review the savings factor for commercial pool covers and switch the current values in the tracking system for indoor and outdoor space to correctly calculate the deemed

²² CLEAResult indicates their protocol recognizes the different efficiencies and believes the projects in this finding do not represent their standard practice.

measure savings. Navigant acknowledges CLEAResult is taken steps to correct the error in the tracking system savings inputs.

Recommendation 7. Review the tracking system input assumptions for small commercial programmable thermostats to ensure consistency with the respective program year participating building types, quantity, and TRM deemed inputs. For an unknown building type, use an average estimate based on the Small Business program participation rather than estimates from other Nicor Gas programs. Navigant acknowledges CLEAResult is taken steps to correct the tracking system savings inputs to reflect the appropriate building type designation.

Finding 8. Supporting documentation for key inputs on several custom projects were not included in the project files. Examples of this include missing boiler manufacturer and model number (NG05-31), references for savings percentage estimates (NG05-010), and documentation of installed insulation thickness (NG05-073).

Recommendation 8. Information identifying and describing the products being installed should be included in the project files. If estimated savings factors or percentages are used to generate ex ante savings, provide documentation or assumptions supporting those values. CLEAResult indicates supporting equipment/project documentation and source citations are a requirement for all projects, so an additional check of documentation may be needed to ensure completeness prior to turning over to evaluators. CLEAResult has indicated they are looking into better managing and packaging the supporting documentation to prevent this from happening in the future.

Program Participation

Finding 9. The GPY5 Small Business Program had a total of 778 participants, of which 265 received no-cost direct install products or assessment services, 498 received prescriptive incentives, and 15 received custom incentives. A total of 1,071 projects were completed, comprising the installation of 5,094 measures.

Process Evaluation

Finding 10. Eighty-six percent of participants in the Assessment path reported first hearing of the program through program-initiated marketing and promotion efforts, while only nine percent of the Rebate (Rebate, Custom, and Assessment+Rebate) participants became aware of the program through program-initiated efforts.

Finding 11. TAs reported that over seventy percent of their customers first heard of the program from their contractor business, and that half of their customers shared program information by word of mouth.

Finding 12. Participants who actively sought out information about the program on their own valued various types of information differently than participants who were approached by the program or a program partner – specifically, the former attached greater importance to cost and savings information than to assistance in locating a contractor.

Finding 13. Participants fell into two camps when it came to preferred program information: those expressing a preference for program information coming directly from the utility, and those preferring information to come from their contractor.

Recommendation 9. Provide robust, easily navigable program information on the utility website offering potential participants the resources they need to enroll and schedule a contractor visit, from cost and savings information to applications and TA lists. Such material would additionally offer support and validation to TAs as they promote the program, and may encourage former participants to consider additional measures. Additional research into the existing website and best practices for online utility program content is warranted.

Finding 14. Facility ownership levels are higher among program participants than in the small business community as a whole, with 76 percent of participants reporting that they own the facility they operate from. Fifty percent of the Rebate participants who lease their facility own the HVAC equipment installed in the leased facility.

Recommendation 10. Ownership status of the facility may not correlate to ownership status of the HVAC equipment. The split incentive that often limits small businesses from participating in programs is reduced or eliminated when the lessee owns the equipment. Therefore, businesses operating in leased facilities should not be precluded when promoting this program. Additional research into how lease agreements address infrastructure systems such as HVAC is warranted.

Finding 15. Satisfaction was high for both the Assessment and Rebate paths, though consistently higher among the Rebate participants, with 71 percent top scores for the “program overall” compared to 40 percent for the Assessment participants.

Finding 16. Utilizing TRC analysis for GPY4, and exclusive of the \$400 utility cost per Assessment, the weighted average cost to deliver each therm saved is \$1.94 for Assessment participants and \$1.41 for Rebate participants.

Recommendation 11. Additional research into the Assessment offering is warranted to make the DI/Assessment path more satisfying to customers. Topics for this research may include channeling of Assessment participants into the Rebate offerings, perceived value of the DI measures, and value of the savings experienced by the participant. Programmable thermostats offer a higher value measure to the customer that is more likely to deliver discernable savings than, for example, aerators.

7. APPENDICES

7.1 Detailed Impact Approaches and Findings

7.1.1 Gross Impact Findings of Custom Projects

Sampling

A sample of nine custom projects based on a planned target of 90/10 confidence and precision level for population level of 15 custom projects was drawn from the SBEEP tracking database to determine custom projects verified gross realization rate. The population of custom projects were stratified by project size into three strata, each representing a third of the population, from which nine projects were selected. The engineering review of the algorithms used by the program to calculate energy savings and the assumptions that feed into those algorithms for the sample were assessed and the savings evaluation approach were classified into one of two categories: 1) reasonable and acceptable, or 2) needs revision based on evaluation findings. Table 7-1 shows a profile of the sample selection.

Table 7-1. Profile of GPY5 Custom Gross Impact Sample

Project ID	Ex Ante Gross Savings (Therms)	Sample Strata	M&V Type	Measure Description
PRJ-494343	14,520	1	File Review	Boilers, DHW and AHUs
PRJ-539332	10,405	1	File Review	Air Rotation Units with Control
PRJ-551395	6,596	2	File Review	Infrared Heaters
PRJ-383711	6,458	2	File Review	Boiler
PRJ-453577	5,056	2	File Review	Boiler, Smart Thermostat
PRJ-499089	4,838	3	File Review	Boiler
PRJ-494353	4,126	3	File Review	Heating System Upgrade
PRJ-595482	3,565	3	File Review	Duct Insulation
PRJ-360851	2,225	3	File Review	New BAS

Source: Program tracking data and Navigant analysis.

Engineering Review of Custom Sample Projects

Engineering desk file review and secondary research were conducted by Navigant engineers. For each selected project and measure, an in-depth application review is performed by the engineers to assess the engineering methods, parameters and assumptions used to generate all ex ante impact estimates, and to determine the ex post gross savings based on the review of the documentation and engineering analysis.

To support this review, Nicor Gas provided project documentation in electronic format for each sampled project. Documentation included some or all of scanned files of hardcopy application forms and supporting documentation from the applicant (invoices, measure specification sheets, and vendor proposals), pre-inspection reports and photos (when available), post inspection reports and photos (when conducted), and calculation spreadsheets.

Results from Custom Sample File Reviews

Table 7-2 below presents the research findings results for the nine sampled projects. Navigant verified that three projects had 100 percent verified gross realization rate, two project had a realization rate above

100 percent, and other four projects had savings adjusted downward with realization rates below 100 percent.

One custom project (PRJ-360851), a building automation system (BAS) installation, was found to have a negative realization rate. The ex ante savings estimate was generated by billing analysis which relied on eight months of post-installation usage history. However, due to circumstances around the period (Museum was closed for seven of those months' due flood damage, and only three months had significant heating degree days) additional usage history was requested. The ex post estimate used the same approach as the ex ante, but with 14 months of additional usage history, resulting in a negative savings of 1,442 therms. Navigant only performed engineering desk file review on this project, however, we identified a number of possible explanations to the increase in post-installation gas usage: poor BAS commissioning, repair of outside dampers, adjusting ventilation levels or other changes to the existing facility (e.g., expansion, change in purpose). Navigant determined the verified savings for this project should be set to zero in the population roll up savings.

Table 7-2. GPY5 Summary of SBEEP Custom Sample M&V Results

Project ID	Project Description	Ex Ante Gross Savings (Therms)	Verified Gross Realization Rate†	Verified Gross Savings (Therms)	Comments on Realization Rate
PRJ-494343	Boilers, DHW and AHUs	14,520	0.93	13,449	The ERV calculation approach was updated to include ERV effectiveness.
PRJ-539332	Air Rotation Units with Control	10,405	1.12	11,640	The ceiling temperatures in the calculation were updated to reflect the documentation.
PRJ-551395	Infrared Heaters	6,596	1.00	6,596	OK
PRJ-383711	Boiler	6,458	0.99	6,376	The savings algorithm was corrected and the baseline was reduced from 80% thermal efficiency to 79% (for steam boilers, IL TRM).
PRJ-453577	Boiler, Smart Thermostat	5,056	1.13	5,691	A billing analysis approach was used instead of estimated savings percentages.
PRJ-499089	Boiler	4,838	0.59	2,847	The installed boiler's thermal efficiency was 80%, which is baseline in IL TRM. No savings was claimed due to boiler efficiency increase.
PRJ-494353	Heating System Upgrade	4,126	1.00	4,126	OK
PRJ-595482	Duct Insulation	3,565	1.00	3,565	OK
PRJ-360851	New BAS	2,225	0.00	0	The updated billing analysis was updated to include additional data points. The ex ante savings was based on seven months of usage, but only two months had significant HDDs and the museum was closed for six of those months due to flood damage. The additional billing data showed an increase in non-baseline gas usage, however Navigant concluded that a savings value of zero would be used to determine the program level realization rate.

Source: Program tracking data and Navigant analysis.

Table 7-3 shows the results of the verified gross realization rates for the sample. The overall custom projects mean verified gross realization rate is 83 percent, after rolling up the sample realizations rates to the population of 15 custom projects. This was achieved at a statistical relative precision of ± 8 percent at a 90 percent confidence level.

Table 7-3. GPY5 SBEEP Custom Sample Verified Gross Savings Parameters

Program	Population Size	Sampling Strata	Sample Size	Sample-Based Ex Ante Gross Savings (Therms)	Sample-Based Verified Gross Realization Rate	Sample-Based Verified Gross Savings (Therms)
SBEEP Custom	3	1	2	24,925	1.01	25,089
	4	2	3	18,110	1.03	18,663
	8	3	4	14,754	0.71	10,538
Sample Level Total	15		9	57,789	0.93	54,290
Program Level Overall Weighted RR					0.93	
Overall Confidence Interval and Relative Precision (90/10) on RR					± 8 percent	

Source: Navigant analysis of program tracking data and M&V results.

7.1.2 Net Impact Research Methods and Findings

Free Ridership and Spillover Research in GPY5

As part of the GPY5 evaluation, the evaluation team conducted free ridership and spillover research with 75 participating Small Businesses, representing approximately seven percent of the GPY5 total program energy savings. The counts for completed interviews and sample design are outlined in Table 7-4. The participant survey instrument are included in Appendix 7.2.1.

Table 7-4. Net-to-Gross Research Survey Disposition

Free Ridership Stratum	NTG Interviews	NTG Sample Design	Population Decision Makers (w/unique contacts)
Direct Install	30	30	391
Prescriptive Rebate	40	40	427
Custom	5	10	15
<i>Participant Total</i>	<i>75</i>	<i>80</i>	<i>833</i>
Trade Ally	10	10	188

Source: Evaluation analysis of programs data

The evaluation assessed free ridership using a customer self-report approach following the Small Business free ridership algorithm adopted from the Illinois Statewide NTG Methodologies document (IL NTG Methods), presented in Illinois TRM V6.0.²³ We assessed the evidence of participant spillover based on certain spillover attribution conditions outlined in the IL NTG Methods. Attempts were made to quantify spillover using survey self-report data for measure description and quantities, while per unit savings values were drawn from the Illinois TRM and measure research.

In addition to the survey with small business participants, the GPY5 research included interviews with 10 participating TAs representing approximately 70 percent of the GPY5 total program energy savings to learn about their experience with the program and gather evidence of free ridership and spillover. We analyzed the TA responses to identify spillover savings attributable to the Small Business Program. The TA interview guide is included in Appendix 7.2.2

The NTG ratio for each program path were calculated using the following algorithm.

$$NTG = 1 - [(Participant\ Free\ Ridership + Trade\ Ally\ Free\ Ridership)/2 + Participant\ Spillover + Trade\ Ally\ Spillover]$$

²³ Illinois TRM Version 6.0.

Participant Free Ridership Scoring Algorithm and Specifications

The evaluation free ridership approach was based on the Illinois SAG Statewide NTG Methodologies document (IL NTG Methods), presented in Illinois TRM V6.0.²⁴ The core nonresidential free ridership algorithm adopted from the Illinois NTG Methods consists of two scores that represent different ways of characterizing program influence or free ridership: the Program Components Score and the No Program Score (a third component, Program Influence Score, is dropped from the Small Business free ridership algorithm to reduce the burden on participants).

Navigant compared the free ridership approach in the IL NTG Methods (TRM V6.0) with the algorithm in the TRM V5.0 protocol²⁵ and determined that the V6.0 should be applied proactively because it incorporates the removal of non-program factors for future applications. This leaves the Program Components Score computed only from the maximum program factor score. The Program Components Score reflects the influence of the most important of various program related elements in the customer's decision to select the specific program measure at this time. Figure 7-1 and Figure 7-2 provide a flow diagram of the algorithms for determining the free ridership, showing the changes in TRM (V6.0). Table 7-5 describes the free ridership calculation steps.

The Program Components Score is derived from:

$$\text{PCS} = 1 - ([\text{Maximum Program Factor Score}]/10)$$

The No-Program score 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 (applying Timing Adjustment option 1 as described in the IL NTG Methods).

The Likelihood Score is determined through a series of questions asking the participant to rate on a scale of 0-10 how likely they would have been to install any standard or efficient equipment on their own. Those answering with a likelihood of one or more were then asked how likely they would have been to install the same equipment they received through the program. The No-Program Score is calculated as the Likelihood Score divided by ten:

$$\text{No-Program Score} = \text{Likelihood Score}/10$$

The evaluation team asked those with any likelihood of installing the same equipment when they would have done so on their own to arrive at a Timing Adjustment Factor. Navigant used the Number of Months Expedited variable to account for deferred free ridership:

$$\text{Timing Adjustment Factor 1} = 1 - (\text{Number of Months Expedited} - 6)/42$$

Based on the combination of the two scores and the timing adjustment factors, Navigant calculated free ridership results in the following way:

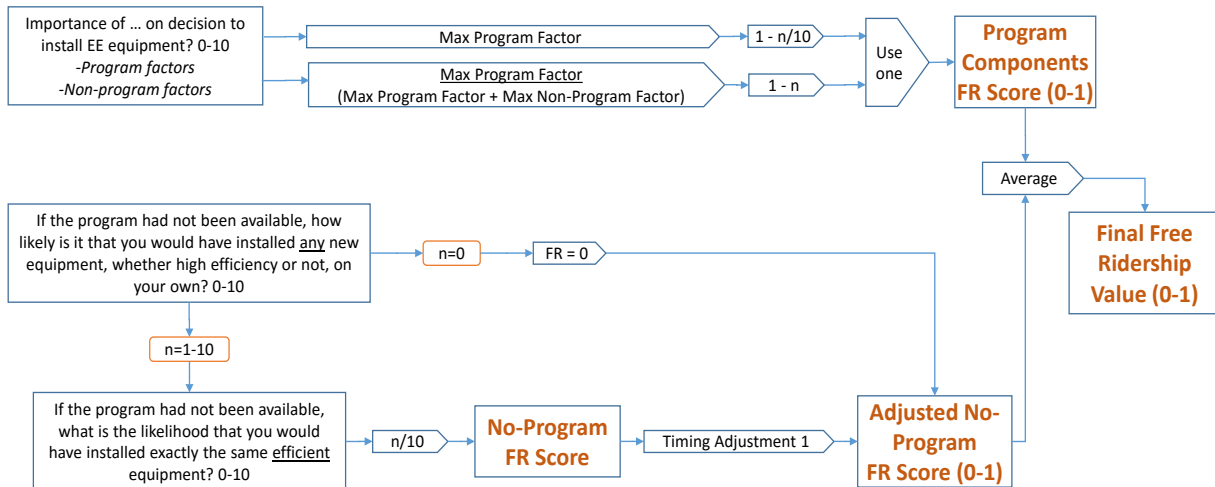
$$\text{FR} = \text{Average}[\text{PCS}, (\text{No Program Score} * \text{Timing Adjustment Factor 1})]$$

²⁴ Illinois Statewide Technical Reference Manual for Energy Efficiency, Version 6.0, Volume 4: Cross-Cutting Measures and Attachments, effective January 1st, 2018

²⁵ Illinois Statewide Technical Reference Manual for Energy Efficiency, Version 5.0, Volume 4: Cross-Cutting Measures and Attachments, effective June 1st, 2016.

Figure 7-1. Small Business Free Ridership for Participants TRM V5.0

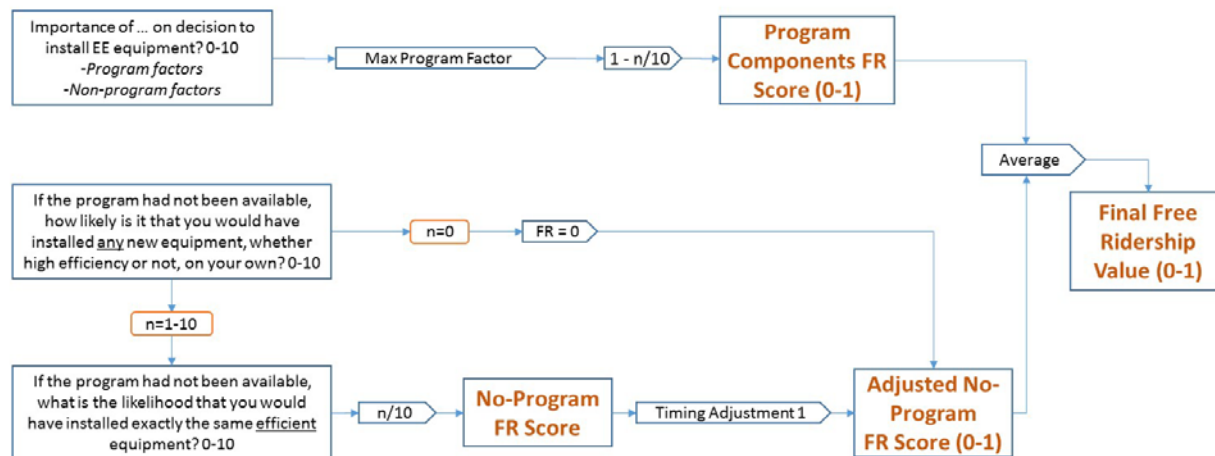
$$(\text{Program Components FR Score} + (\text{No-Program FR Score} * \text{Timing Adjustment 1})) / 2$$



Source: IL TRM v5.0 Volume 4, February 11, 2016

Figure 7-2. Small Business Free Ridership for Participants TRM v6.0

$$(\text{Program Components FR Score} + (\text{No-Program FR Score} * \text{Timing Adjustment 1})) / 2$$



Source: IL TRM v6.0 Vol. 4, February 8, 2017

Table 7-5. Small Business Net-to-Gross Scoring Algorithm (FR-only) from IL-NTG Methods (v6.0)

Scoring Element	Calculation
Program Components Score: 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: A. Facility free energy assessment B. Free energy saving products C. Installation of the free energy saving products D. Availability of discounted services and Rebates E. Information from energySMART for small business F. Information from program marketing materials G. Recommendation from a Trade Ally or Contractor H. Information from prior facility energy assessment I. Recommendation from a peer participated in energySMART J. Recommendation from a utility Energy Advisor K. Assistance from Contractor in application filling L. Nicor Gas presentation about the offering at an event or conference M. Possibility of taking rebate amount off the top of utility bill from Contractor N. Motivation rate by other program offering	<u>DI Program Factors:</u> Maximum of A, B, C, E, F, I, J, and N <u>Prescriptive/Custom Program Factors:</u> Maximum of D, E, F, G, H, I, K, L, M, and N <i>The formula for calculating Program Component Score is shown above.</i>
No-Program Score: “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 purchased/installed ANY measure, whether high or standard efficiency, on your own? If the likelihood score is between 1-10, then a follow up question for determining No-Program score is “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 within one year or at a later date?” 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). 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.	If the likelihood score is zero, then the No Program score equals the Likelihood Score. The No Program Score equals 10 (no free-ridership). If the likelihood score is between 1-10, then 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) <i>The timing adjustment factor for calculating No-Program Score is shown above.</i>
Project-level Free-ridership (ranges from 0.00 to 1.00)	$[\text{Program Score} + (\text{No-Program Score} \times \text{Adjustment Factor})]/2$
Project level Net-to-Gross Ratio (free-ridership only)	$1 - \text{Project level Free-ridership}$

Source: Evaluation team

Our findings from the participant free ridership research show that free ridership is higher when comparing the participants decisions on non-program factors than the program influence factors. Table 7-6 describes the respondents free ridership disposition and compares the program component scores to the no-program scores adjusted by a timing factor.

Table 7-6. Participant Free Ridership Scoring Specifications

Program Path	Program Component FR Score	Adjusted No-Program FR Score	Average FR Estimate (Unweighted)*	Respondents Disposition
DI	0.11	0.29	0.20	No Free Riders = 6 (zero FR) Partial Free Riders = 24 (FR from 1% to 50%)
Prescriptive	0.04	0.66	0.35	No Free Riders = 5 (zero FR) Partial Free Riders = 35 (FR from 10% to 65%)
Custom	0.04	0.70	0.37	Partial Free Riders = 5 (FR from 10% to 50%)

Source: Evaluation analysis of programs data

* FR estimates are unweighted by the projects contributed savings within each program path

Among the 30 direct install respondents, religious organizations formed the majority of respondents (20 of 30) compare to other commercial buildings (10 of 30). The program factors greatly influenced the DI respondents, particularly the religious organization in their decision to participate in the program, with 6 out of the 30 respondents reporting overall zero free ridership, while the remaining 24 has free ridership scores ranging from as low as one percent to 50 percent.

Similarly, the respondents to the prescriptive and custom surveys indicated that program factors greatly influenced their decision to implement the incentivized projects, with program component free ridership scores as low as 4 percent. However, taking into account the no-program factors, the respondents overall free ridership scores ranges from 10 percent to 65 percent. The prescriptive path free ridership is fairly distributed among the participating business types. In terms of technology, space heating measures which formed the majority of the prescriptive respondents (30 of 40) had free ridership ranging from 27 to 37 percent, and contributed greatly to the overall prescriptive path free ridership estimation when weighted by project and path savings as provided in Table 7-8.

Participant Spillover Attribution Algorithm Specifications

The respondents were asked if they have taken any additional action to reduce the energy consumption at their property, since participating in the Small Business Program. Respondents were also asked if, since participating in the program, they have taken any additional action to reduce the energy consumption at other properties under their management.

Two key attribution scores are considered for spillover estimation based on the following questions.

Attribution Score 1: How important was participants' experience in the program in their decision to implement this measure, using a scale of 0 to 10, where 0 is not at all important and 10 is extremely important?

Attribution Score 2: If participant did not participated in the program, how likely is it that the participant would still have implemented this measure, using a 0 to 10 scale, where 0 means definitely would not have implemented this measure and 10 means you definitely would have implemented this measure?

Spillover was considered to be attributable to the Small Business Program if the following condition is met: the average of Attribution Score 1 and (10 - Attribution Score 2) must exceed 5.0.²⁶

Navigant included questions to identify spillover candidates and measures, paraphrased below:

1. Since participating in the Small Business Program, have you taken any additional action to reduce the energy consumption at this property or any others you may manage?
2. Please describe the energy efficiency upgrades at your property. Which types of additional energy efficiency upgrades did you install at your property?
3. What was the quantity of the new equipment installed?
4. What was the efficiency rating of the new equipment installed?

With the measures described and quantified, and based on the satisfaction of the attribution conditions, a spillover rate was calculated at the project level or at the program level using the following formula:

$$\text{Spillover Rate} = (\text{ISO} + \text{OSO}) / (\text{Ex Post Gross Impacts})$$

where:

ISO = Inside Participant Spillover (additional program-induced EE measures that are eligible for, but did not receive, an incentive at a program project site).

OSO = Outside Participant Spillover (program-induced EE measures at sites within Nicor Gas' service territory at which program project measures were not implemented).

The evidence of spillover from the CATI participant survey is presented in Table 7-7.

²⁶ Threshold criteria was based on Illinois TRM Version 6.0 NTG protocols. The Illinois NTG Methods (V5.0) provides that the average attribution score should exceed 7.0. This value has been revised to 5.0 in the TRM V6.0 protocol. Navigant agrees with the Illinois NTG Working Groups' recommendation for TRM V6.0 that 5.0 should be used as the threshold, and proactively applied as necessary.

Table 7-7. SBEEP Program Spillover Evidence from the Participant Telephone Survey

Spillover Question	Evidence of Spillover
Since participating in the Nicor Small Business Program, have you taken any additional actions to reduce the energy consumption at your property (including other properties)?	Of the 75 survey respondents, 28 (37%) said "Yes" 17 of the 28 did not or their trade allies did not receive a utility rebate for this additional action. The respondents were asked further questions for spillover analysis
How important was your experience in the <PROGRAM> in your decision to implement this measure, using a scale of 0 to 10, where 0 is not at all important and 10 is extremely important? This is Measure Attribution Score 1.	Scoring for the 17 remaining candidates is as follows: (0) "Don't Know" (5) Rating of 0 to 3 (6) Rating of 4 to 7 (6) Rating of 8 to 10s
If you had not participated in the <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? This is Measure Attribution Score 2.	Scoring for the 17 respondents is as follows: (0) "Don't Know" (5) Rating of 0 to 3 (3) Rating of 4 to 7 (9) Rating of 8 to 10s
Spillover Attribution Condition	The average of the Measure Attribution Score 1 and (10 – Measure Attribution Score 2) must exceed 5.0.
Spillover Candidates (influence greater than 5 from Attribution Score 1 and 2)	4 participants from the 17 respondents had attribution condition greater than 5 when Attribution Scores 1 and 2 are paired for specific measure designation. These participants installed 5 different types of gas equipment with quantifiable savings.
Of the 4 spillover candidates, evaluation reviewed additional responses to confirm candidate understood the question and may have had gas energy saving spillover projects in Nicor Gas territory.	When asked why did you purchase this equipment without an incentive, if it was available, the responses included: Just trying to save cost on electric and gas; Since I was replacing a furnace I decided to replace an old water heater; ComEd installed these (lighting) at no charge. Because of Nicor I looked into other matters that could save me money on water savings; and other reasons.
Spillover Rate	Sample Spillover Savings/(Sample Ex Post Gross Impacts) Estimated 0.01 spillover rate. Navigant determined that the sample spillover rate is 0.01 when rolled to the population, and should be attributed to the programs.

Source: Evaluation analysis

The evaluation identified five potential spillover candidates based on the spillover attribution condition greater than 5. Navigant determined that only four of the candidates installed equipment with quantifiable gas savings (others installed lighting equipment). When asked why each candidate purchased the equipment without an incentive, if it was available, the four gas spillover candidates responded that they just tried to save cost on electric and gas; since replacing an energy efficient equipment, then decided to replace other old existing equipment. On additional questions on how program offering influenced them to implement efficiency improvements in their properties, the respondents indicated: it's just something to get general expenses down; the severe cost savings that the marketing team showed influenced the decision; and the process had started and wanted to save more money on utilities.

Navigant estimated 0.008 spillover for the four candidates who installed gas equipment: faucet aerators, boiler replacements, storage water heater, and pipe insulation. Navigant determined that the sample spillover rate is 0.01 at two digits, when rolled to the population, and should be attributed to the programs.

Trade Ally Free Ridership and Spillover Attribution Findings

The TA free ridership interview focused on understanding the impact of the rebate separate from other factors that are at work in the TAs market. The TAs were asked a number of questions to ascertain information about the rebate's effect on their ability to sell in the market. Two scoring factors were considered: Offering Components Score, and the Offering Influence Score.

The Offering Components Score asked the following questions on a scale of 0-10, where 0 is not at all influential and 10 is extremely influential:

FR1. How TAs rate the influence of rebates in helping to convince customers to buy energy efficient measures?

FR2. How TAs rate the influence of the CLEAResult Energy Advisor in helping to convince customers to buy energy efficient equipment?

FR3. How TAs rate the influence of all the offering features combined in helping to convince customers to buy energy efficient measures?

Offering Components Score (OCS)= Maximum of (FR1, FR2a, FR3).

The Offering Influence Score (OIS) is based on gathering information on program influence on TAs sales

According to our data, your company was associated with <x> customers [or <x> projects] that went through the offering from June 2015 to May of 2016. Your data also indicate that these customers achieved <y> therms of savings from their projects.

FR4. What percent of these savings do TAs think those customers would have achieved if the rebate had not been available?

After follow up questions and consistency checks on the influence of the rebates, Navigant determined the TA free ridership, using the following algorithm.

TA FR = [1-AVERAGE(Offering Components Score /10, Offering Influence Score)]

Our findings from the interviews indicate that free ridership among the ten participating TAs ranges from one percent to 40 percent. Five respondents had free ridership below 10 percent, and five others had free ridership from 10 to 40 percent. The population roll up free ridership for the TAs was 0.06.

From interviews with the ten TAs, Navigant identified one who responded with a percentage of their sales that were potential spillover. To determine whether the sales were spillover, Navigant analyzed responses from additional questions including:

- Approximate percentage of TA total sales of EE equipment that qualified for a Small Business Program rebate,
- What percentage of EE sales that received a rebate,
- Influence of program on installation without rebate,
- Influence of rebates on sales of non-qualifying equipment,
- Encouraged customers to implement EE operational changes without rebate, and
- other questions detailed in the Interview Guide attached (Section 7.2).

Navigant determined that the identified TA spillover candidate had influenced customers to install efficient furnaces and radiant tube heaters, and also encouraged customers to implement EE operational changes (furnace filters, annual maintenance) without rebate from the program. The reason given is that incentive were too small to bother. The candidate attributed a 10 percent of its sales to the program influence. Navigant calculated the 10 percent of the customer savings attributed to the Trade Ally and determined the spillover rate (0.0005) was too small when roll up to the TA population. Thus, the TA spillover attribution to the program from the TA interviews was set to a zero, at two digits.

Summary of Findings from Free Ridership and Spillover Research

In Table 7-8, Navigant presents a summary of the research findings from the free ridership and spillover analysis from the Small Business participant decision makers, and TAs. The overall average participant and TA free ridership is 0.20, and in addition of program-level spillover rate of 0.01, we estimate a 0.81 NTG value for the Small Business Program.

Navigant recommends that the free ridership and participant spillover results based on IL TRM V6.0 methodology be applied for future use (PY7 and/or beyond).

Table 7-8. Summary of Participant and Trade Ally Free Ridership and Spillover Results

NTG Methods	Program Path	Free Ridership (FR), Weighted	Participant Spillover (SO)	Trade Ally Spillover	Mean NTGR	NTG Sample	Relative Precision @90% CI
TRM (v6.0)							
	DI	0.23	0.01	N/A	0.78	30	6%
	Prescriptive (P)	0.34	0.01	N/A	0.67	40	7%
	Custom*	0.42	0.01	N/A	0.59	5	23%
	Trade Ally (TA)	0.06	N/A	0.00	0.94	10	8%
	Participant Population Roll-up (DI+P+Custom)	0.34	0.01	N/A	0.67	85	12%
	Average of Participant and TA = (Participant + TA)/2	0.20	0.01	0.00	0.81	85	10%

Source: Evaluation analysis

* insufficient number of Small Business custom responses (5) to make path-level estimate (90/23). Participant FR based on Business Custom Program (0.21) was recommended and deemed.

7.2 Survey Instruments

7.2.1 Participation Customer Survey Instrument

NICOR GAS SMALL BUSINESS ENERGY EFFICIENCY PROGRAM

PARTICIPANT SURVEY GUIDE

Navigant December 14, 2016

Table 1: Small Business Program Survey Topics

Topics	Research Questions	
Marketing	Marketing and Outreach	MK1-MK3
Program Awareness	Awareness of other Nicor Gas programs for small business customers	PA1-PA5
Participant Free Ridership	- Direct Install Program and Non-Program Components Score - Comprehensive Program and Non-Program Components Score - Counterfactuals "Timing Adjustment 1" to No Program Score	AS-FR1-AS-FR4 RB-FR1-RB-FR4
Participant Spillover	- Eligible for a rebate but did not apply - Importance of Program in Decision to Install EE equipment	S01-S010
Satisfaction	- Satisfaction - Benefits and Barriers - Feedback and Recommendations	S1-S2 B1-B2 R1
Firmographics	- Ownership - Number of locations - HVAC ownership - Age - Number of employees	F1-F5

INTRODUCTION

[READ IF CONTACT=AS]

Hello, this is _____ from Blackstone calling on behalf of NICOR GAS. ***This is not a sales call.*** May I please speak with **<CONTACTNAME>**?

Our records show that **< COMPANY >** installed energy saving products, including **<MEASURE1, MEASURE2, MEASURE3>** through Nicor Gas' energySMART offering. We are calling to do a follow-up study about **< COMPANY >**'s participation. I was told you're the person most knowledgeable about this project. Is this correct? **[IF NOT, ASK TO BE TRANSFERRED TO MOST KNOWLEDGEABLE PERSON OR RECORD NAME & NUMBER.**

]

This survey will take about 15 minutes. Is now a good time? **[If no, schedule call-back]**

[READ IF CONTACT=RB or CU]

Hello, this is _____ from Blackstone calling on behalf of energySMART a Nicor Gas program. I would like to speak with the person most knowledgeable about the recent energy saving improvements to heating and other natural gas equipment for your firm at this location.

[IF NEEDED] Our records show that you installed energy saving products, including **<MEASURE1, MEASURE2, MEASURE3>** and you or your contractor received a rebate from energySMART. We are calling to do a follow-up study about your firm's participation in this offering. I was told you're the person most knowledgeable about this project. Is that correct? **[IF NOT, ASK TO BE TRANSFERRED TO MOST KNOWLEDGEABLE PERSON OR RECORD NAME & NUMBER.]**

This survey will take about 15 minutes. Is now a good time? **[If no, schedule call-back]**

SCREENING QUESTIONS

A1. Just to confirm, did **< COMPANY >** recently participate in a small business assessment or receive rebates from Nicor Gas' energy efficiency program, energySMART at **<ADDRESS>**?

IF MORE EXPLANATION IS NEEDED for Assessment (AS) Participants: This is a program where your business may have received a free energy assessment, installation of free energy savings products, or a report.

IF MORE EXPLANATION IS NEEDED for Rebate (RB) or Custom (CU) Participants: This is an offer where incentives are taken off the top of your bill and paid directly to your contractor who implemented one or more energy saving capital improvement projects or equipment upgrades. You may also have applied for a rebate following the installation, or received a custom incentive.

- 1 Yes, participated as described
- 2 Yes, participated but at another location
- 3 No, did Not participate in program
- 00 Other, Specify
- 98 Don't Know
- 99 Refused

[ASK IF A1=3, 97, 98, 99; ELSE SKIP to MK1]

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 A2=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 energySMART at **<ADDRESS>**.

Marketing

I'd like to ask you a few general questions about your participation in Nicor Gas' energySMART offering.

MK1 How did you first learn about the energySMART offerings? [select first 3 mentioned. DO NOT READ. Prompt as necessary]

- 1. My contractor
- 2. A new contractor
- 3. A Small Business Energy Advisor
- 4. A peer
- 5. A print ad
- 6. A bill insert
- 7. Email
- 8. Trade event or conference
- 9. Nicor Gas Rebates website
- 10. Radio
- 11. Phone call
- 12. Billboard
- 13. Social media
- 14. Online
- 15. TV
- 00. Other (detail)
- 96. Don't remember
- 98. Don't know
- 99. Refused

MK2 Did you received any rebate or assessment materials or communications from energySMART before you participated in the offering?

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

[Ask if MK2=1, Else Skip to MK3]

MK2A How useful were energySMART's marketing materials in providing information about the offering? Could you rate the marketing material's usefulness on a scale of 0-10, where 0 means not at all useful and 10 means extremely useful. [\[Scale 0-10, 98=Don't Know, 99=Refused\]](#)

[\[ASK IF MK2A < 9\]](#)

MK2B What would have made the materials more useful to you? [\[Record/answer UP TO 3, DO NOT READ\]](#)

1. More information on savings from the incented measures
2. More information on the specific equipment
3. Comparisons of standard equipment and the incented equipment
4. Testimonials from other businesses who installed these measures
5. More information on trade allies/contractors
6. More financial information on ROI or payback
7. Where to get additional information
00. Other (Detail)
98. Don't Know
99. Refused

[\[ASK IF MK2A >9\]](#)

MK2C What did you find most useful about the material? [\[Record/answer UP TO 3, DO NOT READ\]](#)

1. Information on savings from the incented measures
2. Information on the specific equipment
3. Comparisons of standard equipment and the incented equipment
4. Testimonials from other businesses who installed these measures
5. Information on trade allies/contractors
6. Financial information on ROI or payback
7. Where to get additional information
00. Other (Detail)
98. Don't Know
99. Refused

MK3 I'd like to ask how useful some forms of information are when you think about energy efficiency opportunities like those from energySMART. Could you please rate the usefulness on a scale of 0-10, where 0 means not at all useful and 10 means extremely useful. How useful would you find: [\[Scale 0-10, 98=Don't Know, 99=Refused\]](#)

- A. General information and a phone number to call
- B. One-on-one with your contractor about specific options
- C. Assessment reports
- D. Case studies about other energySMART customers
- E. Cost and savings information about projects supported by energySMART
- F. Short videos detailing the experience of businesses who participated in these offerings
- G. Materials received from the energy advisor or contractor

Program Awareness

PA1 Are you aware of any other energySMART offerings from Nicor Gas?

1. Yes
2. No
98. Don't Know
99. Refused

[Ask if PA1=1, Else Skip to MK1A]

PA 2 Which ways to participate are you aware of? [DO NOT READ, ACCEPT ALL]

1. Assessment
2. Rebates for Your Business
3. energySmart Custom Incentives
4. On-bill financing or Energy Efficiency Loans
00. Other (Detail)
98. Don't Know
99. Refused

PA 3 Has your company participated in any other energySMART offerings?

1. Yes
2. No
98. Don't Know
99. Refused

[ASK IF PA 3 = 1, ELSE SKIP TO Free Ridership Section]

PA 4 Which offering(s) did your firm participate in? MULTIPLE RESPONSE

1. Energy assessment (Business, Opportunity or Facility)
2. Rebates for Businesses
3. Custom Incentives
4. On-bill financing or Energy Efficiency loans
00. Other - Record
98. Don't Know
99. Refused

PA 5 On a scale of 0-10, where 0 means "no influence" and 10 means "greatly influenced," how much did your experience with the <RESPONSE FROM PA4(?)> influence your decision to participate in the additional energySMART offerings? [SCALE 0-10; 98=Don't know, 99=Refused]

Participant Free Ridership

The following questions are about the energy saving improvements and equipment that you received through energySMART at <ADDRESS>.

AS MEASURES FREE RIDERSHIP

AS-FR1. I'm going to ask you to rate the importance of energySMART by asking how important various elements were in your decision to receive the energy assessment and have <MEASURE1> installed. Please use a scale from 0 to 10, where 0 means not at all important and 10 means extremely import. [0 to 10; 96=Not Applicable; 98=Don't Know; 99=Refused]

(Prompt for a numeric rating if not given, for example "So what rating would that be on a 0 to 10 scale?"... If respondent says "We would not have done it", prompt with "So would you rate that a 0 on a 0 to 10 scale?")

Program Factors [ROTATE FR1A-F]

- A. The free energy assessment of your facility
- B. Possible recommendations from the Energy Advisor for additional energy efficient actions you might take
- C. The free energy saving products
- D. Installation of the free energy saving products
- E. The information from energySMART for small business
- F. Marketing information about energySMART
- G. Recommendation from a peer who had participated in energySMART

Non-Program Factors

- H. Were there any other factors we haven't discussed that were influential in your decision to <install/perform> the energy saving <<MEASURE1>?>?
 - 00 [Record verbatim]
 - 96 Nothing else influential
 - 98 Don't Know
 - 99 Refused

[Ask if AS-FR1H=00]

HH. Using the same zero to 10 scale, where 0 means not at all important and 10 means extremely important, how would you rate the influence of this additional factor (IF NEEDED: <AS-FR1H_OpenEnd>)? [RECORD 0 to 10; 98=Don't Know; 99=Refused]

AS-FR2. On the 0 to 10 scale, where 0 means not at all likely and 10 means extremely likely, how likely would you have been to purchase and install the exact same <MEASURE1> if the offering had not installed them free of charge? [0-10, 98=Don't Know, 99=Refused]

[If <MEASURE2> is not blank, ask, Else Skip to consistency check]

AS-FR2A. Thinking about <MEASURE2>, on the same 0 to 10 scale, how likely would you have been to purchase and install the exact same <MEASURE2> if the offering had not installed them free of charge? [If necessary: 0 means not at all likely and 10 means extremely likely] [0-10, 11= Don't Recall Measure, 98=Don't Know, 99=Refused]

[If <MEASURE3> is not blank, ask, Else Skip to consistency check]

AS-FR2B. Thinking about <MEASURE3>, on the same 0 to 10 scale, how likely would you have been to purchase and install the exact same <MEASURE3> if the offering had not installed them free of charge? [If necessary: 0 means not at all likely and 10 means extremely likely] [0-10, 11= Don't Recall Measure, 98=Don't Know, 99=Refused]

CONSISTENCY CHECK

[PC SCORE = MAX (AS-FR1a-g)]

[ASK IF PC SCORE < 4 AND AS-FR2 < 4]

CC-AS 1a Based on your earlier response, it sounded like the energySMART offering was not very important to your decision to install the <MEASURE1>. However, when you answered the previous question, it sounds like it was not very likely that you would have installed this measure had you not participated. Can you please explain the role the offering made in your decision to implement this measure?

[RECORD RESPONSE]

- 88. Don't know
- 99. Refused

[ASK IF PC SCORE > 7 AND AS-FRSP2 > 7]

CC-AS 1b Based on your earlier response, it sounded like the energySMART offering was quite important to your decision to install the <MEASURE1>. However, when you answered the previous question, it sounds like it was very likely that you would have installed this measure had you not participated. Can you please explain the role the offering made in your decision to implement this measure?

[RECORD RESPONSE]

- 88. Don't know
- 99. Refused

[Ask If AS-FR2>6, Else Skip to SO1]

AS-FR3. When do you think you would have purchased and installed the exact same energy saving products if the utility offering had not been available?

- 1. At the same time
- 2. Up to 6 months later
- 3. More than 6 months and up to 1 year later
- 4. More than 1 year and up to 2 years later
- 5. More than 2 years and up to 3 years later
- 6. More than 3 years and up to 4 years later
- 7. More than 4 years later
- 8. Never
- 00. Other, specify
- 98. Don't know
- 99. Refused

[AS Participants now SKIP to SO1]

[ASK Rebate and Custom Participants RB-FR1-5, as appropriate]

RB-FR1. I'm going to ask you to rate the importance of energySMART by asking how important various elements were in your decision to participate. Please use a scale from 0 to 10, where 0 means not at all important and 10 means extremely import. [0 to 10; 96=Not Applicable; 98=Don't Know; 99=Refused]

(Prompt for a numeric rating if not given, for example "So what rating would that be on a 0 to 10 scale?" ... If respondent says "We would not have done it", prompt with "So would you rate that a 0 on a 0 to 10 scale?")

Program Factors [ROTATE FR1A-H]

- A. Discounted Services and Project Rebates for equipment
- B. Information from energySMART marketing materials
- C. Recommendation from your contractor or Trade Ally
- D. The information from any prior Nicor Gas energy assessment of your facility
- E. Assistance from your contractor in filing the application for your rebates
- F. Possibility of taking the rebate amount off the top of your bill from the contractor
- G. Marketing information from Nicor Gas about the offering
- H. A Nicor Gas presentation about the offering at an event or conference
- I. Recommendation from a peer who had participated in the offering

Non-Program Factors

- J. Were there any other factors we haven't discussed that were influential in your decision to <install/perform> the energy saving [MEASURE1]?
 - 00 [Record verbatim]
 - 96 Nothing else influential
 - 98 Don't Know
 - 99 Refused

[Ask if RB-FR1J=00]

JJ. Using the same zero to 10 scale, where 0 means not at all important and 10 means extremely important, how would you rate the influence of this additional factor (IF NEEDED: <RB-FR1J_OpenEnd>)? [RECORD 0 to 10; 98=Don't Know; 99=Refused]

RB-FR2. On a 0 to 10 scale, with 0 being not at all likely and 10 being extremely likely, how likely is it that you would have <purchased and installed/performed> **ANY** <new equipment/equipment tune-up>, standard or high efficiency, on your own if the offering had not been available? [0-10, 98=Don't Know, 99=Refused]

[FR2=0, Skip to SO1]

REBATE FREE RIDERSHIP (Ask About Greatest Saving Comprehensive Measure)

_(Replace "purchase and install" or "install" with "perform" IF COMP_DESC11= "boiler tune-up")

RB-FR3. On the same 0 to 10 scale, where 0 means not at all likely and 10 means extremely likely, how likely would you have been to <install/perform> the exact same <MEASURE1> if the incentives had not been available? [0-10, 98=Don't Know, 99=Refused]

[Ask if there was more than one measure installed, Else Skip to SO1]

[If <MEASURE2> is not blank, ask, Else Skip to consistency check]

RB-FR3A. Thinking about <MEASURE2>, on the same 0 to 10 scale, how likely would you have been to purchase and install the exact same <MEASURE2> if the offering had not installed them free of charge? [If necessary: 0

means not at all likely and 10 means extremely likely] [0-10, 11= Don't Recall Measure, 98=Don't Know, 99=Refused]

[If <MEASURE3> is not blank, ask, Else Skip to consistency check]

RB-FR3B. Thinking about <MEASURE3>, on the same 0 to 10 scale, how likely would you have been to purchase and install the exact same <MEASURE3> if the offering had not installed them free of charge? [If necessary: 0 means not at all likely and 10 means extremely likely] [0-10, 11= Don't Recall Measure, 98=Don't Know, 99=Refused]

CONSISTENCY CHECK

[PC SCORE = MAX (RB-FR1a-g)]

[ASK IF PC SCORE < 4 AND RB-FR3 < 4]

CC-RB 1a Based on your earlier response, it sounded like energySMART was not very important to your decision to install the <MEASURE1>. However, when you answered the previous question, it sounds like it was not very likely that you would have installed this measure had you not participated. Can you please explain the role the offering made in your decision to implement this measure?

[RECORD RESPONSE]

88. Don't know

99. Refused

[ASK IF PC SCORE > 7 AND RB-FRSP3 > 7]

CC-RB 1b Based on your earlier response, it sounded like energySMART was quite important to your decision to install the <MEASURE1>. However, when you answered the previous question, it sounds like it was very likely that you would have installed this item had you not participated. Can you please explain the role the offering made in your decision to implement this measure?

[RECORD RESPONSE]

88. Don't know

99. Refused

[Ask If RB-FR3>6; Else Skip to SO1]

RB-FR5. When do you think you would have <installed/performed> the exact same <MEASURE1> if the utility offering had not been available?

1. At the same time
2. Up to 6 months later
3. More than 6 months and up to 1 year later
4. More than 1 year and up to 2 years later
5. More than 2 years and up to 3 years later
6. More than 3 years and up to 4 years later
7. More than 4 years later
8. Never
00. Other, specify
98. Don't know
99. Refused

END OF COMPREHENSIVE PROGRAM

Participant Spillover

FOR ALL MEASURES - Assessment (AS), Rebate (RB) and Custom (CU)– ASK ONCE

SO1. Since participating in energySMART for your business, have you taken any additional actions to reduce the energy consumption at this facility or any others you may manage?

1. Yes
2. No
98. Don't Know
99. Refused

[Ask if SO1=1, Else Skip to OP1]

SO 2. Did you or your contractor receive a utility rebate for this additional action?

1. Yes
2. No
3. Project not yet complete
98. Don't Know
99. Refused

[Ask if SO 2=2, 3, or 98. Else, If SO 2=1, 99, SKIP TO S1]

SO 3. Please describe the energy efficiency upgrades at your property. Which types of additional energy efficiency upgrades did you install at your property? [NOTE TO INTERVIEWER:IF RESPONSE IS GENERAL, PROBE FOR SPECIFIC MEASURE. PROBE FROM LIST, IF NECESSARY.] PROGRAM AS TWO STEPS. ASK ABOUT SPACE HEATING, WATER HEATING, ETC. IF THE ANSWER IS POSITIVE, ASK ABOUT TYPE OF SPACE HEATING,

1. (Space Heating: Efficient Gas Furnace)
2. (Space Heating: Condensing Gas Boiler)
3. (Space Heating: Condensing Unit Heater)
4. (Space Heating: Boiler Tune-up)
5. (Space Heating: Steam Trap Repair/Replacement)
6. (Space Heating: Direct-Fired Space Heaters)
7. (Space Heating: Infrared Heaters)
8. (Space Heating: Non-Condensing Boilers)
9. (Space Heating: Boiler Reset Controls)
10. (Water Heating: Storage Water Heater)
11. (Water Heating: Central Domestic Hot Water Controls)
12. (Clothes Dryer: Modulation Controls)
13. (Ozone Laundry)
14. (Pool/Spa Covers)
15. (Process: Demand Control Ventilation)
16. (Faucet Aerators in bathroom(s))
17. (Faucet Aerators in commercial kitchen(s))
18. (Pre-Rinse Spray Valves for commercial kitchen(s))
19. (Salon Sprayers)

20. (Water Efficient Showerheads)
21. (Programmable Thermostats)
22. (Hot Water/Steam Pipe Insulation)
23. (Appliances: Energy Star Fryer)
24. (Appliances: Energy Star Convention Oven)
25. (Appliances: Bottom Finned Stock Pots)
26. (Appliances: Energy Star Conveyor Ovens)
27. (Appliances: Energy Star Combination Ovens)
28. (Appliances: Energy Star Commercial Steamers)
29. (Appliances: Energy Star Griddles)
30. (Appliances: Infrared Charboilers)
31. (Appliances: Infrared Rotisserie Ovens)
32. (Appliances: Infrared Salamander Boilers)
33. (Appliances: Infrared Upright Boilers)
34. (Appliances: Pasta Cookers)
35. (Appliances: Rack Ovens)
36. Space Heating: High-efficiency burner replacements
37. Space Heating: Burner and furnace controls
38. Space Heating: Process heat recovery technologies, including flue stack and condensing economizers
39. Regenerative thermal oxidizers
40. Condensate return system improvements
41. Building and process insulation
42. Air side measures:
43. Make-up air units
44. Energy recovery ventilators
00. Other, specify, note gas or electric
96. Didn't install any additional equipment
98. Don't know
99. Refused

[MULTIPLE RESPONSE, ASK SO 4 to SO 10 FOR EACH SO 3 MENTION]

SO 4. How important was your experience with energySMART in your decision to implement this equipment, using a scale of 0 to 10, where 0 is not at all important and 10 is extremely important? [0-10, 98=Don't Know, 00=Refused]

SO 5. If you had not participated in energySMART, how likely is it that you would still have installed this equipment? Please use the 0 to 10 scale, where 0 means you definitely would not have installed this equipment and 10 means you definitely would have installed this equipment? [0-10, 98=Don't Know, 00=Refused]

[ASK IF (AVERAGE (SO 4, (10-SO 5) => 5), ELSE SKIP TO S1]

SO 6. What was the quantity of the new equipment installed? [0-1000, 9998=Don't Know, 9999=Refused]

[IF SO 3=1-7 ASK SO 7, Else Skip to SO 8]

SO 7. What was the efficiency rating of the new equipment installed? [0-100 AFUE/Thermal Efficiency, 9998=Don't Know, 9999=Refused]

SO 8. Why did you purchase this equipment without an incentive, if it was available? (If needed, read back measure: < SO 3 RESPONSE>). [MULTIPLE RESPONSE, UP TO 3] [PROBE FROM LIST, IF NECESSARY]

1. Takes too long to get approval
2. No time to participate, needed equipment immediately
3. The equipment did not qualify
4. The amount of the incentive wasn't large enough
5. Did not know the offering was available
6. There was no offering available
7. Had reached the maximum incentive amount
00. Other (Detail)
98. Don't know
99. Refused

SO 9. In your own words, how did the offering influence you to implement efficiency improvements in your property's [answer to SO3]? [OPEN END, 98=Don't Know, 00=Refused]

SO 10. Was this action recommended to you by a representative of the energySMART offerings? (Note to interviewer: could include written or oral recommendation, formal or informal. PROBE FOR type of contact and if it was from the Marketing and Outreach team (877-886-4239).)

1. Yes
2. No
98. Don't Know
99. Refused

Satisfaction

[Ask S1-AS of Assessment Participants Only, Rebate and Custom Participants Skip to S1-RB]

S1-AS I'd like to ask how satisfied you are with the energySMART offering. 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] [Randomize S1-AS-A-H]

- A. The free assessment
- B. The energy efficiency options recommended in the assessment
- C. The installation process
- D. The performance of the free equipment
- E. Information in the assessment on opportunities to save more energy
- F. Assessment report overall
- G. The Energy Advisor who conducted your assessment and installed the free equipment
- H. energySMART offerings overall

[Ask S1-RB of Rebate and Custom Participants, AS Participants Skip to S2A]

S1-RB I'd like to ask how satisfied you are with the energySMART offering. 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] [Randomize S1-RB-A-H]

- A. The incentive/rebate amount
- B. Level of disruption during the installation
- C. Time it took from scheduling to completion
- D. Any savings from the upgrades
- E. The communication you had with the energySMART staff
- F. The equipment offered by the program (If needed: this is the equipment that is eligible for an incentive under the program)
- G. Your contractor
- H. energySMART offerings overall

[ASK S2A IF S1-AS-G<6 OR If S1-RB-I<6]

S2A You indicated some dissatisfaction with the energySMART offerings overall, why did you rate it this way? [RECORD ALL THAT APPLY] (DO NOT READ)

- 1. No clear guidance
- 2. The equipment is not working properly
- 00. Other (Detail)
- 98. Don't Know
- 99. Refused

[ASK S2B IF S1-AS-G>8 OR If S1-RB-I>8]

S2B You indicated great satisfaction with the energySMART offerings overall, why did you rate it this way? [RECORD ALL THAT APPLY] (DO NOT READ)

- 1. Free items with the assessment
- 2. Guidance from the assessment
- 3. Rebate amounts
- 4. Anticipated savings
- 00. Other (Detail)
- 98. Don't Know
- 99. Refused

Benefits and Barriers

B1A What do you see as the main benefits to participating in energySMART? [\[Record/answer UP TO 3\] \(DO NOT READ\)](#)

1. Energy savings
2. Saving money
3. Good for the environment
4. Lower maintenance costs
5. Better quality equipment
6. New equipment
7. Rebate/incentive
8. Able to make improvements sooner
9. Improve comfort conditions for customers and employees
00. Other (Detail)
98. Don't Know
99. Refused

B1B What do you see as the drawbacks to participating in energySMART for small business? [\[Record/answer UP TO 3\] \(DO NOT READ\)](#)

1. Process is too burdensome
2. Incentives are not high enough
3. Potential savings are not worth the effort
4. Program is too complicated
5. Too busy to consider energy efficiency improvements
6. No down time for the work to occur
7. Cost of equipment
8. No drawbacks
00. Other (Detail)
98. Don't Know
99. Refused

Feedback and Recommendations

R1 How would you improve the energySMART offerings for a business like yours? [\[Record/answer UP TO 4\] \(DO NOT READ\)](#)

1. Higher incentives
2. More measures
3. Greater publicity
4. Better communication/improve Program information
5. Simplify application process
6. Quicker processing times
00. Other (Detail)
96. No recommendations
98. Don't know
99. Refused

Firmographics

I only have a few general questions left.

F1 Could you tell me about the ownership of your facility? Does your company:

1. Rent or Lease this facility
2. Own and occupy this location
3. Own this facility and rent/lease it to someone else
98. Don't Know
99. Refused

F2 Is this facility is...

1. Your company's only facility
2. A franchise facility
3. One of several facilities owned by your company
4. The headquarters of your company with other facilities at different locations
98. Don't Know
99. Refused

F3 Could you tell me about the ownership of your HVAC system at this facility? Does your company

1. Owns the HVAC system
2. Another party owns the HVAC system
00. Other (Detail)
98. Don't know
99. Refused

F4 How old is your facility? RECORD IN YEARS [NUMERIC OPEN END, 0 TO 200; 998=Don't know, 999=Refused]

F5 How many full time equivalent staff are employed at this facility? [If needed, 2 half time staff equal 1 FTE, 1 half time and two quarter time equal 1 FTE] [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 NICOR 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.

7.2.2 Trade Ally Interview Guide

Nicor Gas

Evaluation for the Small Business Offering

Trade Ally In-Depth Interview Guide December 12, 2016 Final

Section	Topics	Questions
Background	What type of business does the trade ally conduct and what types of experience does this trade representative have with energySMART, the Nicor Gas Energy Efficiency incentive/rebate program?	Q1-Q3
Marketing	How did the trade ally become aware of these rebates? Do you refer customers to other utility rebates? Is the level of utility marketing sufficient? How can Nicor Gas support your rebate marketing? Has word of mouth marketing had an impact?	Q4-Q3
Free Ridership and Spillover	Would small business customers have installed the equipment without the rebate (free ridership)? What number of customers have installed additional energy efficient equipment without an incentive (spillover)? Have they encouraged customers to implement measures or operational changes for which there is no incentive? If so, do they know if the customers have done so?	FR1-S3
Delivery and Administration	How do you market the rebate? Does rebate delivery occur in a timely manner?	Q10-Q11
Offering Characteristics and Barriers	What are the barriers to participation encountered by customers and trade allies? How could the offering be changed to overcome these barriers?	Q12-Q16
Satisfaction with the Small Business	How satisfied are trade allies with the offering? What do they like most and least about the offering? What would they change? How satisfied are customers?	Q17-Q21

[Note to Reviewer] The Interview Guide is a tool to guide process evaluation interviews. 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 offering, i.e., where they have significant experiences for meaningful responses.

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 energySMART, a Nicor Gas program, and would like to talk to you about your experience with small business customers. Are you the best person to speak with about your company's experiences with the energySMART program? [\[If not, get alternate contact information\]](#). 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.

We are evaluating last year's offering which ran from June 1, 2015 and ended May 31, 2016.

Background

1. Can you briefly summarize your roles and responsibilities at your company?
2. Do you participate in any other energySMART offering such as the custom incentives for business or prescriptive rebates such as furnace and boilers?
3. Have you referred any Small Business customers to other energySMART business offerings?
4. Are you a member of the Contractors' Circle?

[\[Ask if 4=No\]](#)

5. Are you aware of the Contractors' Circle?
 - a. Are you interested in becoming a member of the Circle? Why/why not?

Marketing

I would like to start out with a few questions about the marketing of the small business offerings from the energySMART offering:

6. What kind of support, if any, did CLEAResult, the implementer, provide for marketing the small business offerings to your customers?
7. What are some of the things that the implementer did effectively to help you market this offering?
8. How could the implementer more effectively support your rebate marketing?
9. Do you ask your customers how they heard about the rebate?
 - a. If so, what did they tell you?

- b. Did you notice any word-of-mouth marketing among Nicor Gas customers? For example, did customers know of other participating businesses?
- 10. Do you use the program to reach out to your existing customers to offer additional work?
 - a. How do you decide which Nicor Gas customers to contact about the rebate or did the customer contact you?
- 11. Do you use this program to reach new customers?
 - a. If so, how? Is it effective?

Free Ridership

We are trying to understand the impact of the rebate separate from other factors that are at work in your market. We have a number of questions that ask you to think about the rebate's effect on your ability to sell in this market.

Offering Components Score

- FR1. On a scale of 0-10, where 0 is not at all influential and 10 is very influential, how would you rate the influence of rebates in helping you convince your customers to buy energy efficient measures?
- FR2. On the same 0-10 scale, how would you rate the influence of the Energy Advisor in helping you convince your customers to buy energy efficient measures? [\[As needed: where 0 is not at all influential and 10 is very influential.\]](#)
- FR3. And again, on the 0-10 scale, how would you rate the influence of all the offering features combined in helping you convince your customers to buy energy efficient measures? [\[As needed: where 0 is not at all influential and 10 is very influential.\]](#)

Offering Components Score = Maximum of (FR1, FR2a, FR3).

Offering Influence Score

According to our data, your company was associated with <x> customers [\[or <x> projects\]](#) that went through the offering from June 2015 to May of 2016. Your data also indicate that these customers achieved <y> therms of savings from their projects.

- FR4. What percent of these savings do you think those customers would have achieved if the rebate had not been available?

[\[ASK IF FR4>70% and Offering Components Score > 7, Else Skip to S1\]](#)

- CC 1. You stated that the rebate was influential in getting your customers to install EE measures yet <FR4> of the savings would have been achieved in absence of the rebate. In your own words, please tell me what role the rebate played in getting these projects installed. [Open ended]

[\[ASK IF FR4<70% and Offering Components Score < 7, Else Skip to S1\]](#)

- CC2. You stated that the rebate was not influential in getting your customers to install EE measures yet <FR4> of the savings would have been achieved in absence of the rebate. In your own words, please tell me what role the rebate played in getting these projects installed. [Open ended]

[\[For open-ended interviews, circle back to resolve discrepancies.\]](#)

Spillover

As a reminder, these questions relate to the small business offerings from energySMART from June 2015 to May 2016.

S1. In the last year, did you install any energy efficient equipment for your small business customers that did not receive a rebate?

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

[ASK IF S1=1, Else Skip to S3]

S2. Of the energy efficiency projects with small business customers that were eligible for a rebate, approximately what percentage did not receive a rebate?

- 1. [Record numeric response]
- 98. Don't know
- 99. Refused

[ASK IF S2 > 0]

S2A. Thinking of those customers who did not receive a rebate through the offering, how influential were services offered by energySMART on the customer's decision to install your energy efficient equipment without a rebate? Could you please rate the influence on a scale of 0 to 10, where 0 means not at all influential and 10 means very influential.

- 1. [Record numeric response]
- 98. Don't know
- 99. Refused

S2B. What types of energy efficient equipment did the customer(s) install that did not qualify for rebates? (Suggestion: probe for this if you can, focus is on gas equipment)

- 1. [Record verbatim response]
- 98. Don't know
- 99. Refused

S2C. How did the rebate influence your sales of equipment installed that did not qualify for rebates?

- 1. [Record verbatim response]
- 98. Don't know
- 99. Refused

S2D For those projects where you installed rebate-qualifying products for Nicor Gas customers **and** they did not receive the instant discount **or** submit the rebate

themselves, do you know why didn't the customers apply for the rebate? (e.g., too time-consuming, too much paperwork, incentive too small to bother)

1. [Record verbatim response]

98. Don't know

99. Refused

S3. Have you encouraged small business customers to implement energy saving operational changes for which there is no rebate? [Example: changing furnace filters, water heater temperature setback]

1. Yes

2. No

98. Don't Know

99. Refused

[Ask if S3=1]

3A. What percent of your small business customers followed your recommendation?

Delivery and Administration

Thank you. Now I'd like to ask you a few questions about how your business worked with the offering.

12. After the customer agreed to install the recommended equipment, how long did it usually take to schedule the installation?

13. How long did it take the implementer to process your payment after the instant discount paperwork was submitted?

Offering Characteristics and Barriers

14. What areas of the offering could be improved to create a more effective offering for your customers?

a. What aspects of the offering are most effective?

15. What areas could be improved to create a more effective offering for partners such as yourself?

a. What aspects of the offering are most effective for the partners?

16. What would you like to see added to the offering's contractor approved equipment list?

Satisfaction with the Small Business

17. Are you satisfied with the offering? Why or why not?
18. What do you like most about the offering?
19. What do you like least about the offering?
20. Are customers satisfied with the offering? Why or why not?
21. If you could change one thing about the offering, what would it be?
22. If you could keep one thing about the offering, what would it be?

CLOSING SECTION

That brings us to the survey. Is there anything else that you would like to let us know based on the topics we covered today?

On behalf of Nicor 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 ADDRESS]