



**Energy Efficiency Plan
Plan Year 1
(6/1/2011-5/31/2012)**

**Evaluation Report:
Nicor Gas
Business Energy Efficiency Rebate
Program**

FINAL

**Presented to
Nicor Gas**

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E. Executive Summary

E.1 Evaluation Objectives

The Business Energy Efficiency Rebate (BEER) program provides incentives to increase the market share in businesses of new, highly efficient space heating, water heating, and commercial kitchen equipment as well as cost-effective improvement and additions to existing equipment. Participants must purchase and install equipment covered by the program. A rebate form must be filled out and submitted within 90 days of installation. Customers may receive a rebate without pre-approval for participation.

The objectives of the Nicor Gas BEER Program evaluation for the first plan year (GPY1) were to: (1) quantify net savings impacts from the program; (2) identify ways in which the program can be improved, and (3) determine process-related program strengths and weaknesses. Evaluation efforts in PY2 and PY3 will build upon findings from the GPY1 evaluation.

E.2 Evaluation Methods

The key evaluation activities to assess gross and net impacts of the BEER Program were:

- Verification of claimed savings
 - Engineering review of project-level tracking data and the algorithms used by the program to calculate energy savings for all measures and the assumptions that feed those algorithms
- In-depth interviews
 - Program implementation contractor
 - Program trade allies/program stakeholders
- Program materials review
- Participant telephone surveys via a computer assisted telephone interview (CATI) system

This program has not been fully evaluated before¹ and so according to the Net-to-Gross (NTG) Framework,² the net-to-gross ratio (NTGR) determined from the GPY1 evaluation research is to

¹ This program's Rider 29 predecessor was evaluated; however, focused net-to-gross research was not conducted.

² "Proposed Framework for Counting Net Savings in Illinois." Memorandum March 12, 2010 from Philip Mosenthal, OEI, and Susan Hedman, OAG.

be applied retroactively. The program falls under the following condition from the NTG Framework: *“For existing and new programs not yet evaluated, and previously evaluated programs undergoing significant changes – either in the program design or delivery, or changes in the market itself – NTG ratios established through evaluations would be used retroactively, but could also then be used prospectively if the program does not undergo continued significant changes.”*

E.3 Key Impact Findings and Recommendations

As shown in Table E-1, savings verification of the GPY1 BEER Program found that verified gross energy savings were consistent with the ex ante gross savings reported in the implementation contractor’s (IC’s) tracking system, resulting in a realization rate of 1.00 (realization rate = evaluation verified gross / ex-ante gross from the tracking system). Table E-1 provides the evaluation research findings net energy savings based on a NTG ratio of 0.73 calculated from GPY1 evaluation research.

Table E-1. GPY1 Natural Gas Savings Estimates

Category	Nicor Gas Energy Savings (Therms)
Ex Ante Gross Savings	1,742,478
Ex Ante Net Savings	1,400,675
Verified Gross Savings ³	1,742,478
Verified Net Savings	1,272,009
Verified Net-to-Gross Ratio	0.73

Navigant Analysis of Nicor Gas tracking database (10/06/2012 data extract)

The mean verified gross realization rate for the BEER Program was 1.00 at a zero (0.0%) relative precision at a 90% confidence level. A NTGR of 0.73 was estimated for the BEER Program at a relative precision of ±9 % at a 90% confidence level.

Comparing initial program planning net therm savings with evaluation estimated net therm savings, Navigant found that Nicor Gas BEER Program achieved 128% (1,272,009 therms) of

³ The September 14, 2012 final version of the first State of Illinois Energy Efficiency Technical Reference Manual (TRM) (effective as of June 1, 2012) has been agreed to by Illinois Stakeholder Advisory Group (SAG) participants and has been approved by the Illinois Commerce Commission in Docket No. 12-0528 as of the date of this report. The verified gross savings shown in Table E-1 assumes that gas measures covered by the TRM are deemed for implementation and evaluation purposes in GPY1, after the ICC approval of the TRM and TRM Policy Document for use in GPY1. For the BEER Program, evaluation research findings for gross savings that do not assume deemed status of TRM measures in GPY1 were identical to verified gross savings with deeming.

the initial planned net savings for the BEER Program. The planned net energy savings goals for GPY1 were 991,607 net therms with a NTGR of 0.80.

The Navigant team also assessed the progress of the Nicor Gas BEER Program by comparing impact results from the Rider 29 program to the Rider 30 GPY1 impact results. Although program participation in Rider 30 GPY1 was not significantly different from that of the Rider 29 pilot program, the Rider 30 GPY1 program achieved over 318% (1,742,478 therms) of Rider 29 gross savings (547,787 therms). Net savings increased by approximately 299% from 426,071 therms to 1,272,009 therms. Further, these gains were achieved by expending incentives equivalent to only 88% of Rider 29 incentives. The difference in savings and incentives was due to higher than projected installations of relatively low-incentive industrial high pressure steam traps.

The primary impact findings and recommendations are as follows:

Finding: Navigant found that steam trap measures represent approximately 85% of the total reported gross therm savings. Much of the program's ability to achieve its goal can be attributed solely to steam trap measures. Navigant acknowledges that new programs sometimes rely on just a few measures to achieve savings and then diversify over time.

Recommendations:

- The program should work to diversify the registered trade ally pool to include additional types of equipment/measures.
- Future evaluations should include secondary research on commercial and industrial steam trap measures to ensure prescribed savings are accurate.

Finding: Upon reviewing the program tracking database, Navigant found that certain key variables that aid in the evaluation process were not included in the tracking data provided for review, although it is the understanding of the evaluator that this data is tracked.. The Implementation Contractor (IC) provided unit measure savings estimates for program qualifying measures. Navigant performed a review and verification of the algorithms and assumptions. Our estimates from the TRM were in agreement with those provided in the IC's documentation. The IC's estimates were considered accurate for GPY1 application.

Recommendations:

- The IC should ensure that unique project identifiers are provided in the tracking system for review by the evaluator.
- The IC should ensure information provided in hardcopy or handwritten applications are accurately transferred into the tracking system. The IC should

ensure the type of business or facility type indicated in the project application is provided in the tracking system.

- The IC should also ensure all relevant contact information for both program participants and trade allies is provided in the tracking database. At a minimum, contact name, telephone number, and participant address should be provided for all program participants. A primary contact name and telephone number should be provided for trade allies.

E.4 Key Process Findings and Recommendations

The primary process findings and recommendations are as follows:

Finding

Overall, customers appear to be very satisfied with the BEER Program; 94% of the customers surveyed reported being satisfied with the program overall. Most customers (88%) reported being satisfied with the incentive amount; while 84% reported being satisfied with the incentivized measures/equipment offered by the program.

Finding

Evidence from the program tracking system shows incomplete applications and denials are a challenge to the program implementation.

Recommendation:

- The program implementation team should work with the participating trade allies to streamline and simplify the application process; including providing additional information about qualifying units before the energy efficient projects are undertaken, in order to reduce the number of rejected applications.

Finding

Navigant found that during the Rider 29 evaluation, program participation and savings did not meet initial program planning goals. In GPY1 of Rider 30, program staff took steps to increase program marketing and outreach efforts and added new program measures (steam traps and commercial kitchen measures) to achieve program goals. Navigant found that the program made successful modifications to achieve the savings goals and at a lower than projected incentive cost.

Finding: Navigant found that significant efforts have been made to improve on the program marketing and outreach activities to trade allies since the beginning of Rider 30. The IC increased the total registered trade allies from 1,000 to 4,169. Only 41% of the survey respondents reported that they used a program-qualified trade ally.

This suggests that both the program and the trade allies may not be promoting the program-qualified trade ally status feature to the fullest extent possible.

Recommendation:

- Navigant recommends that the IC continue to train and recruit new trade allies to aid in the promotion of the BEER program. Because the participation of trade allies is vital to both program promotion and to facilitating the program application process, Navigant also suggests that the IC implement additional incentives for trade allies, such as rewarding higher trade ally volume through such means as listing on Nicor Gas website based on cumulative savings brought in.
- Although contractors are encouraged to participate in co-branding of their company's website and marketing material, it may also be effective to encourage trade allies to promote their program-qualified status to participating and potential customers. By informing customers of their status (either vocally or through marketing material) as a registered Trade Ally with Nicor Gas, customers may be more comfortable participating in future program offerings.

In January 2013, Nicor Gas implemented a web-based tool that allows customers to find Contractor Circle/registered trade allies that provide service to their county, customer segment (i.e. residential, large commercial, small commercial), and the type of service required (e.g. commercial boiler installation, central air conditioning installation, etc.). This tool should facilitate customers' ability to find program affiliated contractors.

Finding: Participation in the participant survey did not meet the designed sample size of 75 completes. Although Navigant contacted 146 participants, only 34 agreed to participate in the survey. Although there were few outright refusals to participate in the survey, many participants indicated that they did not have time and calling back at a later time would be better. Many of the later callbacks did not result in the customer's participation, but rather another refusal to participate. It should be noted that while the sample of 34 participants represented 13% of the population, it accounted for approximately 80% (or 1,392,269 therms) of the ex-ante gross savings claimed.

Recommendations:

- Improve the quality of the customer contact name and telephone number data in the tracking system so the correct survey contact can be targeted from the outset.
- Discuss the verification obligation with customer contacts at the time of project implementation activity – note that there is a requirement to participate in a brief survey, if contacted.
- Include a note of obligation to participate in verification, if contacted, with the rebate check payment letter.
- Send out a reminder note of the verification obligation in post-project follow-up communication with the customer.

- On the application form Terms and Conditions, state that, if contacted, responding to verification interviews is a requirement of program participation. Navigant recommends changing the current wording from:

“Current C&I PY2 Application Forms Terms & Conditions: Verification: Any customer receiving a rebate check may be contacted by an evaluator to verify service/equipment installation or be asked to complete a customer survey.”

to

“Verification: Any customer receiving a rebate check may be contacted by an evaluator to verify service/equipment installation or be asked to complete a customer survey. If contacted, your participation is required.”

1. Introduction to the Program

1.1 Program Description

The GPY1 Nicor Gas BEER Program provides incentives to increase the market share in businesses of new, highly efficient space heating, water heating, and commercial kitchen equipment as well as cost-effective improvement and additions to existing equipment. Participants must purchase and install equipment covered by the program. A rebate form must be filled out and submitted within 90 days of installation. Customers may receive a rebate without pre-approval for participation. A glossary of common terms used throughout this report can be found in Appendix 5.1.

This evaluation builds on Navigant's 2011 evaluation of the Rider 29 BEER Program. During Rider 29, program participation did not meet initial program planning goals. Program staff took steps to increase program marketing and outreach efforts for the Rider 30 program period. Therefore, a key element of Navigant's Rider 30 evaluation is to gauge whether the program was able to increase participation in the current economic environment, which is likely creating a barrier to participation for some trade allies and potential customers. The BEER Program is a large part of Nicor Gas' GPY1 energy efficiency portfolio, so identifying strategies to meet targets is critical.

The BEER Program works closely with the Nicor Gas Business Custom Program and the other business programs within the portfolio to target both end-use customers and trade allies. The BEER Program relies on wholesale and retail trade allies to assist in the marketing of this program. Trade ally support and engagement is considered to be key to this program's success. To increase measure uptake in any period, the Rebate Program may provide incentives to trade allies for specific, limited-time promotions.

The initial program implementation period is three years, which began in June 2011. The planned net energy savings goals for GPY1 are 991,607 net therms with a NTGR of 0.80. Table 1-1 provides the program GPY1 budget and goals for the BEER Program.

Table 1-1. BEER Program Savings Goal and Budget

Category	Incentives Budget	Participation Goal (Measures)	Ex Ante Gross Savings Goal	Ex Ante Net Savings Goal	Planned Net-to-Gross Ratio
Total	\$1,291,863	3,430	1,075,101	991,607	0.80

Source: Nicor Gas Monthly Report - GPY1, May 2012; Rider 30 EEP Program Portfolio Operating Plan.

Navigant worked with program management and implementation staff to develop a model of the program logic. This effort leveraged any existing models, both internal to Navigant and from the implementation contractor. The related deeper understanding of the program logic may lead to a proposed change in Navigant’s approach to evaluating the program and or to suggesting some program modifications. Details of the program theory and logic model, and Navigant’s related memo are attached as Appendix 5.2.

1.2 Evaluation Questions

The evaluation sought to answer the following key researchable questions.

1.2.1 Impact Questions

1. What is the level of gross annual energy (therms) savings induced by the program?
2. What are the net impacts from the program? What is the level of free ridership associated with this program and how can it be reduced? What is the level of spillover associated with this program?
3. Did the program meet its energy savings goals? If not, why not?
4. Are the assumptions and calculations in compliance with the statewide TRM? If not, what changes are required?

1.2.2 Process Questions

1. Has the program been successful in recruiting additional participants?
2. Has the program been successful in recruiting additional trade allies?
3. How has the program changed its marketing and outreach strategies since Rider 29?
4. Are customers satisfied with the program? In what ways can the program improve the customer experience?
5. Are trade allies satisfied with the program? In what ways can the program improve the trade ally experience?
6. Is the program successfully referring customers to the other Business programs? Can program coordination be improved?

2. Evaluation Methods

This section describes the analytic methods and data collection activities implemented as part of the GPY1 impact and process evaluation of the BEER Program, including the data sources and sample designs used as a base for the data collection activities.

2.1 *Primary Data Collection*

Navigant undertook the following key evaluation activities to estimate the evaluation verified gross energy savings of the BEER Program:

- Reviewed tracking data and deemed savings assumptions used by the program to assess correct implementation of deemed values in the ex-ante gross savings estimates;
- Requested from the IC, the application files of 20 Business Rebate projects, and reviewed project documents to support the gross impact verification efforts;
- Implemented a stratified random sampling design to select 75 projects from the population of BEER Program project applications for the participant telephone survey, completing 34 interviews after attempting contact with 146 (a census of the program) of GPY1 participants; and
- Conducted an engineering review of the tracking database entries and telephone responses for CATI respondents.

The process analysis was conducted following completion of the telephone surveys of program participants. Free ridership and participant spillover were calculated using an algorithm approach based on survey self-report data only. Navigant completed telephone interviews with 34 GPY1 Business Rebate project contacts to support net impact research.

These activities are summarized in the Table 2-1 below.

Table 2-1. BEER Program Evaluation Data Collection Research Methodologies

Collection Method	Subject Data	Quantity	Gross Impact	Net Impact	Process
In-depth Interview	Program administrators and implementation contractor staff	1			X
In-depth Interview	Participating Trade Allies	5			X
Engineering Review	Program tracking database	34	X		X
Deemed Savings Review	Deemed savings estimates	All	X		
Telephone Survey	Program participants	34	X	X	X

2.2 *Additional Research*

To support the BEER Program impact and process evaluation efforts, the evaluation team conducted verification and due diligence of the program implementation activities, and reviewed project files and the program tracking system. Detailed findings and recommendations to improve the program operations and tracking database are documented in section 3. Navigant’s full due diligence procedure review memo can be found in the Appendix 5.3.

Under this task, the Navigant team reviewed the quality of processes established to track program progress and recorded data. This review included researching the following questions:

- Whether eligibility criteria have been met, applications completed and supporting documentation identified;
- Whether the quality assurance and quality control activities are adequate and unbiased; and
- Whether savings are calculated correctly and project information entered accurately.

Additional research efforts included a review of the BEER Program default savings estimates for GPY1, using the Illinois Technical Reference Manual (TRM)⁴. Nicor Gas adopted the directives from the Illinois Commerce Commission (ICC) to apply the algorithms and assumptions from the TRM to estimate ex-ante gross measure savings in GPY1 or GPY2. Navigant's review efforts were designed to identify whether the algorithms and assumptions were adequately applied and if there were discrepancies that needed correction. The results of our findings are presented in Section 3 and in Appendix 5.3

The evaluation team also reviewed program activities to determine if desired outcomes were being met. Navigant reviewed the linkages between program activities, outputs, and outcomes, and identified potential external influences. Appendix 5.2 contains the program theory and logic model memo that describes the resources, activities, outputs, outcomes, and associated measurement indicators associated with the BEER Program.

2.3 Impact Evaluation Methods

This section describes the analytic methods implemented as part of the GPY1 impact evaluation of the BEER Program. The key evaluation activities to assess gross and net impacts of the program were:

- Engineering review of the program tracking data and the program calculated unit measure savings, using the Illinois TRM assumptions and algorithms for deemed measures;
- Conducted engineering file reviews of 20 Business Rebate projects to verify invoices, measure specifications, installed quantities, and project savings claimed;
- Completed computer assisted telephone interviews (CATIs) with 34 Business Rebate project participant contacts to support the gross and net impact analysis approach⁵; and
- Analyzed responses from the sample of 34 Business Rebate projects from the participant telephone survey to establish if the reported measure types or specifications were confirmed by the customers, and that installed measures were operational and producing savings. The evaluation team considered measure-level gross impact adjustments and applied any changes to the individual projects.

⁴ Illinois_Statewide_TRM_Effective_060112_Final_091412_Clean.docx

⁵ We targeted a 90/10 level of confidence and relative precision for the population of the BEER Program.

2.3.1 Gross Program Savings

To estimate the verified gross savings and gross realization rates from the relatively small population of GPY1 Nicor Gas Business Rebate projects, Navigant attempted to contact all GPY1 participants. Interviews were completed with a sample of 34 participants. Table 2-2 provides a summary of the gross impact of the sample for the BEER Program in comparison with the program population. A sample of 34 participants were surveyed which represented 13% of the population, but approximately 80% (or 1,392,269 therms) of the ex-ante gross savings claimed.

It should be noted that participation in the Participant Survey did not meet the designed sample of 75 completes. Although Navigant contacted all 146 participants, only 34 agreed to participate in the survey. Navigant recommends the following actions be taken to increase participant involvement in future program surveys:

- Improve the quality of the customer contact name and telephone number data in the tracking system.
- Discuss the verification obligation with customer contacts at the time of project implementation activity – note that there is a requirement to participate in a brief survey, if contacted.
- Include a note of obligation to participate in verification, if contacted, with the rebate check payment letter.
- Send out a reminder note of the verification obligation in post-project follow-up communication with the customer.
- On the application form Terms and Conditions, state that, if contacted, responding to verification interviews is a requirement of program participation. Navigant recommends changing the current wording from:

“Current C&I PY2 Application Forms Terms & Conditions: Verification: Any customer receiving a rebate check may be contacted by an evaluator to verify service/equipment installation or be asked to complete a customer survey.”

to

“Verification: Any customer receiving a rebate check may be contacted by an evaluator to verify service/equipment installation or be asked to complete a customer survey. If contacted, your participation is required.”

Table 2-2. Profile of GPY1 Gross Impact Sample

Population Summary		Sample			
Number of Projects (N)	Ex Ante Therms	n	Ex Ante Therms	Sampled Project % of Population	Sampled Therms % of Population
267	1,742,478	34	1,392,269	13%	80%

Source: Navigant analysis of program tracking database (10-06-2012 data extract); analysis of CATI respondents

The key evaluation activities to estimate the verified gross energy savings of the BEER Program considered two types of adjustments to ex ante gross savings:

- **Adjustment to Measure Gross Unit Savings.** Navigant reviewed the tracking data and assumptions for TRM deemed per unit measure gross savings values used by the program, to assess correct implementation of the values in the ex-ante gross savings estimates and where necessary make measure-level adjustments; and
- **Adjustment to Measure Count/Type from CATI Responses.** Navigant conducted a review of the energy savings estimates of 34 sampled participant telephone survey respondents, to assess the need for measure or savings adjustment based on participant responses to questions on measure eligibility, quantity, and conditions of operation.

The method used to calculate the sample verified gross savings is presented below. Navigant multiplied the reported ex ante gross savings from each measure within the sample of 34 projects by the adjusted measure gross unit savings realization rate and the adjusted measure count/type realization rate. The result is the verified gross savings for the measure, which we then summed to the project level to get the verified gross savings estimation for respective projects in the sample. The calculation is as follows⁶:

$$\text{Verified Gross Savings} = (\text{Ex Ante Gross Savings}) * (\text{Measure Unit Savings RR}) * (\text{Measure Count \& Type RR})$$

Navigant estimated the verified gross realization rate for the sample (which is the ratio of the verified gross savings to the reported ex ante gross savings) and applied the verified sample gross realization rate to the population to estimate the program level verified gross energy savings.

⁶ This formula estimates savings by taking ex-ante values from the tracking database for sample measures and using adjustment values from Table 3-3 and Table 3-5.

A simple ratio estimation technique was used to analyze the sample project ex-ante and the verified gross savings to estimate the achieved relative precision at a 90% level of confidence for the sample of Business Rebate projects. Details of the ratio estimation technique are provided in Appendix 5.4.

2.3.2 Net Program Savings

The net-to-gross analysis was conducted following completion of the telephone survey of program participants and interviews of trade allies. Free ridership was calculated using the enhanced self-report approach based on interview results from both participating customers and the associated trade allies. Specifically, if the participant survey revealed that the trade ally was highly influential on the customer's decision to participate in the program, Navigant attempted to contact the associated trade ally to conduct an in-depth project-specific NTG survey. Also consistent with the Commonwealth Edison (ComEd) research approach, in those cases where the trade ally could not be reached, free ridership was calculated using the participant rating since all trade allies are program-registered contractors. Participant spillover was examined using participant survey self-report data only. Navigant's detailed methodology is provided in Appendix 5.5

The program falls under the following condition from the NTG Framework⁷: *“For existing and new programs not yet evaluated, and previously evaluated programs undergoing significant changes — either in the program design or delivery, or changes in the market itself⁸ — NTG ratios established through evaluations would be used retroactively, but could also then be used prospectively if the program does not undergo continued significant changes.”*

⁷ “Proposed Framework for Counting Net Savings in Illinois.” Memorandum March 12, 2010 from Philip Mosenthal, OEI, and Susan Hedman, OAG.

⁸ An example of a market change might be where baselines have improved significantly and the likely free riders are growing substantially because of it.

3. Evaluation Results

3.1 *Impact Evaluation Results*

This section presents the BEER Program impact evaluation results. Included in the impact evaluation results are a verification and due diligence procedure review and tracking system review. A gross impact parameter estimate and gross impact results are also provided below.

3.1.1 **Verification and Due Diligence Procedure Review**

Overall, most of the quality assurance and verification procedures in place for the BEER Program, as outlined in the Rider 30 Program Portfolio Operating Plan, and the program Implementation Policies and Procedures⁹, provide detailed QC/QA procedures for verifying measure and customer eligibility, application process, and onsite inspections for qualifying project installations. These QA/QC measures are found to meet or exceed quality assurance expectations. Key findings and recommendations from the due diligence and verification procedures review task are provided in the Appendix 5.3.

3.1.2 **Tracking System Review**

The evaluation team performed an independent review of the program tracking database to determine whether the database included appropriate levels of inputs, outliers, and missing variables. Navigant found that the structure of the tracking database provides adequate descriptions of the installed measures, savings input assumptions, measure specifications (including the make and model, efficiency, type and size), equipment purchase dates, and installation dates.

The gross impact evaluation efforts were based on reviewing the tracking database extract delivered by the IC to the evaluation team on 10/06/2012. This dataset included ex ante gross and net therm savings estimated based on the Illinois TRM gross savings assumptions and algorithms, and measure-level NTGRs from planning assumptions made by the IC for GPY1. Navigant performed an initial review and verification of the algorithms and assumptions. Our initial TRM-based estimates matched those provided in the IC document and the measure per unit default savings values in the tracking database are accurate.

Recommendations:

- Navigant recommends that unique project identification numbers should be implemented and included in the program tracking database. Navigant observed project “rebate numbers” assigned to applications in the tracking system of

⁹ Nicor Gas Business EE Rebate Program Policies and Procedures (August 1, 2011)

differing formats (e.g. “1-20120227-20161” or N700026” formats). The evaluation team recognizes that this was a carryover from Rider 29 formatting, and that all project rebate numbers will be consistent moving forward.

- The tracking system should be updated to track pre and post-inspection findings and inspection dates.
- The tracking system should provide measure cost information such as equipment cost, installation cost, and incremental cost, and the measure useful life. This information is useful for evaluating measure and program cost effectiveness analysis.
- The tracking system provided to the evaluator should include the business/building type descriptions in the tracking system. Currently, only the related numerical codes are provided. Navigant also found that some project applications provided the type of business/building, but these data were not appropriately recorded in the tracking database (these were instead shown as “OTR”). Navigant understands that the IC does track these parameters and they will be provided in subsequent tracking datasets.
- The IC should ensure information provided on hardcopy or handwritten applications is accurately transferred into the tracking system.

3.1.3 Gross Program Impact Parameter Estimates

The program parameters used for evaluating the program are summarized in Table 3-1.

Table 3-1. GPY1 Gross Program Impact Parameter Estimates

Parameter	Value	Deemed or Evaluated?	Source Notes
		Verification Report	Verification Report
Verified Realization Rate on Ex-Ante Gross Savings	1.00	Evaluated	GPY1 EM&V analysis based on program tracking data and participant CATI responses
Measure Type and Eligibility	Varies by measure type	Evaluated	GPY1 EM&V analysis based on program tracking data and participant CATI responses
Quantity	Varies by measure type	Evaluated	GPY1 EM&V analysis based on program tracking data and participant CATI responses
Gross Savings per Unit Measure	Varies by measure type	Deemed and Evaluated (non-deemed measures)	State of Illinois TRM and GPY1 EM&V analysis based on program tracking data

Source: Navigant Analysis

3.1.4 Gross Program Impact Results

Measure Gross Unit Savings Verification and Adjustments

The evaluation team verified and adjusted the per-unit savings values for measures in the sample and then applied the calculated realization rate to the population. The verified average per unit savings values for GPY1 measures are presented in Appendix 5.5. Navigant concluded that the IC sufficiently applied the TRM assumptions and algorithms. The differences between tracking unit savings and the verified values were not significant, and the per unit savings values in the tracking database are accurate. The realization rates based on measure unit savings were determined to be 1.00.

Additional Project File Reviews

The project file review effort was completed to ascertain the level of accuracy of records in the tracking database versus the project application documentation. The 20 projects were randomly selected and stratified based on business category and measure type. Generally, all 20 project files contained relevant information needed to review the project applications. The following were findings from the file review task:

- Verified that all 20 reviewed projects were completed within the GPY1 timeline;
- Verified that all project applications included invoices with measure specifications;
- Verified total quantity of 162 measures recorded in the project applications matched records in the tracking database; and
- Verified that the correct TRM values and assumptions were applied.

Based on the file review findings, no adjustments were applied, hence the realization rates for the sample of 20 file review projects was determined to be 1.00, as shown in Table 3-2.

Table 3-2. Project File Review Findings and Realization Rates

Sampled Measure Type	Verified Sample Measure Quantity	Verified Unit Gross Savings RR	Verified Measure Quantity RR
Boiler Tune-Up	10	1.00	1.00
Commercial Steam Trap	7	1.00	1.00
Industrial Steam Trap	109	1.00	1.00
Condensing Boilers	4	1.00	1.00
Combined HE Boiler & DHW	2	1.00	1.00
EStar Convection Oven	1	1.00	1.00
Infrared Heaters	2	1.00	1.00
Programmable Thermostat	19	1.00	1.00
Furnaces, 95%+AFUE	3	1.00	1.00
Water Heater, 88% TE	1	1.00	1.00
Pre-Rinse Spray Valve	2	1.00	1.00
Hydronic Boilers	2	1.00	1.00

Source: Evaluation findings from GPY1 project file reviews

Gross Impact Adjustments Triggered by the Participant Phone Survey

A brief set of questions in the CATI survey were asked to support the savings verification gross impact evaluation, regarding installed measures, existence of maintenance contracts, removed equipment, and temperature settings for programmable thermostats. Table 3-3 shows the primary measure type, the respondent count and the adjustment applied after reviewing the telephone survey responses. Participants confirmed they implemented these measures within the GPY1 period. In GPY2, Navigant will consider including additional batteries to the survey guide to verify the quantity of each measure installed by survey participants.

Table 3-3. Participant Responses to CATI Impact Questions and Realization rates

Primary Measure Type	Respondent Count	Verified/ Adjusted Measure Therms RR
Boiler Reset Control	2	1.000
Boiler Tune-Up	3	1.000
Combination Boiler	1	1.000
Commercial Steam Trap Replacement	3	1.000
HE Boiler - \geq 85%	1	1.000
HE Boiler - \geq 90%	2	1.000
HE Furnace - \geq 92% AFUE	2	1.000
HE Furnace - \geq 95% AFUE	8	1.000
Programmable Thermostat	3	1.000
High Pressure Steam Trap	3	1.000
Infrared Heating	9	1.000
Storage Water Heater - 88% TE	1	1.000
Total	39	1.000

Navigant analysis of participant CATI survey responses (11-27-2012)

** includes respondents who mentioned more than one measure.*

Using the methodology described in Section 2.3.1, Navigant determined the verified gross savings for each sampled project. Table 3-4 presents the overall total verified gross savings of 1,392,269 therms for the sample of 34 projects, with a verified gross realization rate of 1.00.

Table 3-4. Gross Impact Realization Rate Results for the Prescriptive Sample

Sample (n)	Sample-Based Ex Ante Gross Savings Claimed (Therms x 1,000)	Sample-Based Verified Gross Savings (Therms x 1,000)	Sample-Based Verified Realization Rate
34	1,392	1,392	1.00

Source: Navigant analysis

Realization Rates for the Prescriptive Program

Using a simple ratio estimation technique, Navigant determined the sampled gross realization of the verified gross savings versus the reported ex ante gross savings, and analyzed the variance in the ratio estimation of the gross realization rate to determinate the confidence interval and precision. Details of the ratio estimation approach are discussed in Appendix 5.4. The standard error was used to estimate the error bound around the estimate of verified gross therms. The results are summarized in Table 3-5. The mean verified gross realization rate for

the sample was 1.00 at zero (0.0 %) relative precision at 90% confidence level. A zero relative precision was achieved based on the fact that there was no variation in the ex ante gross savings and the verified gross savings for each individual measure or project, resulting in a realization rate of 1.00 at the project level and at the program level.

Table 3-5. Gross Therms Realization Rate and Relative Precision at 90% Confidence Level

Sampling Strata	Relative Precision at 90% Level of Confidence (± %)	Low	Mean	High	Standard Error (±)
Overall Verified Gross Savings RR	0.0%	1.00	1.00	1.00	0.00

Navigant analysis

The sample 1.00 verified gross realization rate was applied to the population to achieve the program level verified gross savings as shown in Table 3-6.

Table 3-6. Gross Parameter and Savings Estimates at the Program Level

Program	Paid Incentives	Measures	Ex Ante Gross Energy Savings (Therms x 1,000)	Verified Gross Energy Savings (Therms x 1,000)	Gross Realization Rate
Total	\$372,058	1,621	1,742	1,742	1.00

Navigant analysis

Some general observations from the gross impact analysis include:

- Three projects contributed 77% of total GPY1 gross impact. These projects were among the 34 customers who participated in the CATI survey. The total savings from the 34 survey respondents is approximately 80% of total GPY1 gross savings.
- Approximately 85% of GPY1 gross savings came from the application and installation of steam trap measures. Industrial high pressure steam traps contributed about 97% of the total savings from steam traps. Navigant acknowledges that new programs sometimes rely on just a few measures to achieve savings and then diversify over time.

As mentioned above, the NTGR for the GPY1 BEER Program was estimated using an enhanced customer self-report approach. This approach relied on responses provided by 34 program participants and 3 trade allies during the CATI telephone survey to determine the fraction of

measure installations that would have occurred by participants in the absence of the program (free-ridership).

If the customer had additional projects at other sites covering the same end-use, the survey asked whether the responses also apply to the other projects. If that is the case, the additional projects are given the same NTG score and included in the sample. Table 3-7 shows the research findings net impact parameter estimates for GPY1.

Table 3-7. GPY1 Verified Net Impact Parameter Estimates

Parameter	Value	Deemed or Evaluated?	Source Notes
		Verification Report	Verification Report
Participant Surveys	34	Evaluated	GPY1 EM&V analysis based on participant CATI responses
Free-ridership	0.27	Evaluated	GPY1 EM&V analysis based on participant CATI responses
Research Findings Overall NTG Ratio	0.73	Evaluated	GPY1 EM&V analysis based on participant CATI responses

Navigant conducted spillover research through both the participant and trade ally interviews. Trade allies did not identify any potential spillover. Navigant’s qualitative analysis of spillover identified through the participant telephone survey yielded four of the 34 participants reporting possible spillover. Navigant’s subsequent questioning, however, indicated that none of the identified projects qualified as program spillover due either to lack of program influence or lack of program qualification

Program participants were asked about any additional efficiency measure they may have installed since their participation, both at the participating facility and at any other facility within Nicor Gas service territory. All four of the participants responded that they had installed additional measures for which they did not receive any rebates. The installed measures included: a T8 lighting system, an efficient gas water heater, an infrared heating system, roof membrane system, and a programmable thermostat. While several of the measures would not have been eligible for any rebates, when asked why they did not receive an incentive for these measures that may have been eligible, one participant said that “It was urgent, the one we had broken. The one we chose was one that didn't meet Nicor’s requirements for an incentive.”, while another participant said that “I wasn't aware of any Nicor programs that covered this”.

When asked about whether or not their participation in the BEER Program influenced the adoption of additional energy efficiency measures, all respondents reported that the effect of the program was not at all significant. When asked the likelihood of installing the measure in the absence of the program, all 4 potential spillover respondents indicated that they definitely would have implemented the measure.

3.1.5 Net Program Impact Results

Once gross program impacts have been estimated, net program impacts are calculated by multiplying the project verified gross realization rate estimate by the program NTGR. Table 3-8 provides the program gross and net savings. The relative precision at a 90% confidence level is provided in Table 3-9. Based on the completion of 34 participant surveys, Navigant estimated a NTGR of 0.73 for the BEER Program at a relative precision of 9% at 90% confidence level. It should be noted that this estimation is based on CATI survey responses with program participants and may not be reflective of the true NTGR, particularly given the lesser than ideal sample.

Industrial steam trap measures contributed to an overall lower free ridership, thus increasing the NTGR, while other measures, such as boilers, furnaces, and boiler tune-ups had a higher free ridership, contributing to a lower NTGR.

In addition to the above, the Program Score (i.e. If the program had not been available, what is the likelihood that a participant would have installed exactly the same item/equipment) and the Program Influence Score (i.e. did a participant learn about the program before or after they decided to implement the measure that was installed?) contributed to lowering the overall NTGR with averages of 0.45 and 0.47 respectively. The Timing and Selection Score for the participants surveyed contributed to a higher NTGR with a simple average of 0.75.

Table 3-8. PY1 Program Gross and Net Energy Savings Estimates

Program	Ex Ante Gross Energy Savings (Therms x 1,000)	Verified Gross Energy Savings (Therms x 1,000)	Verified Gross Realization Rate	Verified Net Energy Savings (Therms x 1,000)	Verified Net-to-Gross Ratio
Total	1,742	1,742	1.00	1,272.4	0.73

Source: Navigant analysis

Table 3-9. NTG Ratio and Relative Precision at 90% Confidence Level

Project Population (N=267)	NTG Interviews (n=34)	NTG Sample* (n=39)	Relative Precision (± %)	Low	Mean	High
267	34	39	9%	0.67	0.73	0.80

Source: Navigant analysis

* - includes multiple projects

Steam trap measures represented 85% of the program gross therm savings. Two participants represented roughly 75% of the program savings. Much of the program’s ability to achieve its goal can be attributed solely to steam trap measures. However, we acknowledge that new programs sometimes rely on just a few measures to achieve savings and then diversify over time.

One solution would be to diversify the trade ally pool to include other measure categories/technologies.

One respondent (with an individual NTGR of 53%) mentioned they would like to see the incentives be more attuned to the level of savings being achieved for each sector/industry. As an example, this participant mentioned that schools and industrial process facilities receive the same \$200/trap incentive, which didn’t seem reasonable to him, as he felt industrial applications would yield higher savings. A solution suggested by the participant would be to base the incentive on the size of the steam trap. Smaller steam traps (equaling fewer therm savings) would receive smaller incentives, and vice versa.

Comparing initial program planning net therm savings with evaluation estimated net therm savings, Navigant found that Nicor Gas BEER Program achieved 128% of the initial planned net savings for the BEER Program, as indicated in Table 3-10.

Table 3-10. GPY1 Program Net Energy Savings Vs. Planned Net Savings

Program	Net Therms Achieved (Therm x 1,000)	GPY1 Planned Net Therms (Therms x 1,000)	% Net Therms Achieved
Total	1,272.4	991.6	128%

Source for planned net savings: Rider 30 EEP Program Portfolio Operating Plan

The Navigant team assessed the progress of the Nicor Gas BEER Program by comparing impact results from the Rider 29 program to the Rider 30 GPY1 impact results. Table 3-11 compares the Rider 29 and Rider 30 GPY1 BEER Program gross and net impact parameters.

Table 3-11. BEER Program Results from Rider 29 and Rider 30 GPY1

Program Result	Rider 29	Rider 30 (GPY1)	R30/R29
Ex Ante Gross Therms (x 1,000)	547.8	1,742.5	318%
Verified Gross Therms (x 1,000)	547.8	1,742.5	318%
Gross Realization Rate	1.00	1.00	100%
Ex Ante Net Therms (x 1,000)	426.1	1,400.7	329%
Verified Net Therms (x 1,000)	426.1	1,272.04	299%
Net-to-Gross Ratio ¹⁰	0.78	0.73	94%
Participation (measure count)	1,679	1,621	97%
Incentives Paid (\$)	421,580	372,058	88%

Source: Rider 30 Evaluation analysis, and Nicor Gas Rider 29 Prescriptive Rebate program report.

Although program participation in Rider 30 GPY1 has not been significantly different from that of the Rider 29 pilot program, the Rider 30 GPY1 program achieved over 318% of Rider 29 gross savings. Net savings increased by approximately 299%. Further, these gains were achieved by expending incentives equivalent to only 88% of Rider 29 incentives. The difference in savings and incentives was due to increased installations of industrial high pressure steam traps.

3.2 Process Evaluation Results

The process evaluation of the BEER Program focused on answering the following research questions:

1. Has the program been successful in recruiting additional participants?
2. Has the program been successful in recruiting additional trade allies?
3. How has the program changed its marketing and outreach strategies since Rider 29?
4. Are customers satisfied with the program? In what ways can the program improve the customer experience?
5. Are trade allies satisfied with the program? In what ways can the program improve the trade ally experience?
6. Is the program successfully referring customers to the other Business programs? Can program coordination be improved?

¹⁰ In Rider 29, the evaluation did not adjust program planning net-to-gross ratio, but the Rider 30 GPY1 NTG ratio is based on research findings from free-ridership analysis.

The process evaluation results are organized by the process research questions. The primary data sources for the process evaluation included the telephone survey with 34 survey participants and in-depth interviews with market actors and implementation staff. The surveys were conducted October through December, 2012. In addition to the aforementioned surveys, Navigant also conducted surveys with five participating trade allies. The results of these surveys are summarized below, while detailed results can be found in Appendix 5.6.

3.2.1 Has the program been successful in recruiting additional participants?

Finding

In terms of project or measure participation, it does not appear the program in Rider 30 GPY1 period achieved significant progress in recruiting additional participants, when compared to the Rider 29. Under Rider 30 in GPY1, 237 customers participated and implemented 1,621 measures, compared to 333 customers who implemented 1,679 measures in the Rider 29 pilot program¹¹. On the other hand, the program achieved or exceeded its planned gross savings goal in the Rider 30 GPY1 period compared to the Rider 29. This was partly due to introduction of new measures and provision of incentives for the measure mix, including steam traps. In PY1, program staff also took steps to increase program marketing and outreach. On this basis, Navigant concludes that the program made successful modifications to achieve the savings goals without increasing participation.

Recommendation

- Navigant suggests that Nicor Gas consider increasing the amount of advertising done directly to customers, through methods such as email blasts, and bill inserts. This will both increase program participation, and increase the number of participating trade allies, as customers make their contractors aware of the program.

3.2.2 Has the program been successful in recruiting additional trade allies? How has the program changed its marketing and outreach strategies since Rider 29?

Finding

Navigant found that significant efforts have been made to improve the program marketing and outreach activities since the beginning of Rider 30. Notable among them is the continued recruitment of trade allies and organizing trade ally meetings and training, the introduction of the “big check event”, and the “E-blast” announcement for promoting newly introduced C&I

¹¹ Copy of Rider 29 Portfolio Summary Spreadsheet v3 (FINAL 9-23-11).xlsx (The 333 customers in Rider 29 included 75 customers from the Rockford Small Business pilot program, who installed 323 measures).

prescriptive measures. Although customers were not contacted directly during the Rider 29 cycle, information gathered from the program staff and from the current Rider 30 GPY1 participant telephone survey provides a strong indication that the contractor/trade ally channel is being well utilized by the program, followed by the Nicor Gas website and through e-mails.

During Rider 29, there were 1,000 registered trade allies. The IC did a commendable job in recruiting trade allies to the program, increase the total registered trade allies to 4,169. Sixty-nine (69%) of survey respondents used a contractor for their project, 36% reported that they did not know if their contractor was a program-qualified trade ally. Only 41% of the survey respondents reported that they did use a program-qualified trade ally. This suggests that the trade allies may not be promoting their status as program-qualified trade allies to the fullest extent possible.

Recommendation

- The program should continue to provide training and support to trade allies. Continuing recruitment efforts of new trade allies to the program is also recommended.
- The program should continue to recruit trade ally involvement and encourage trade allies to market the program to their customer base.
- Navigant suggests that Nicor Gas continue to work with trade allies to develop marketing materials for trade allies to use to promote the program to their customers.

3.2.3 Are customers satisfied with the program? In what ways can the program improve the customer experience?

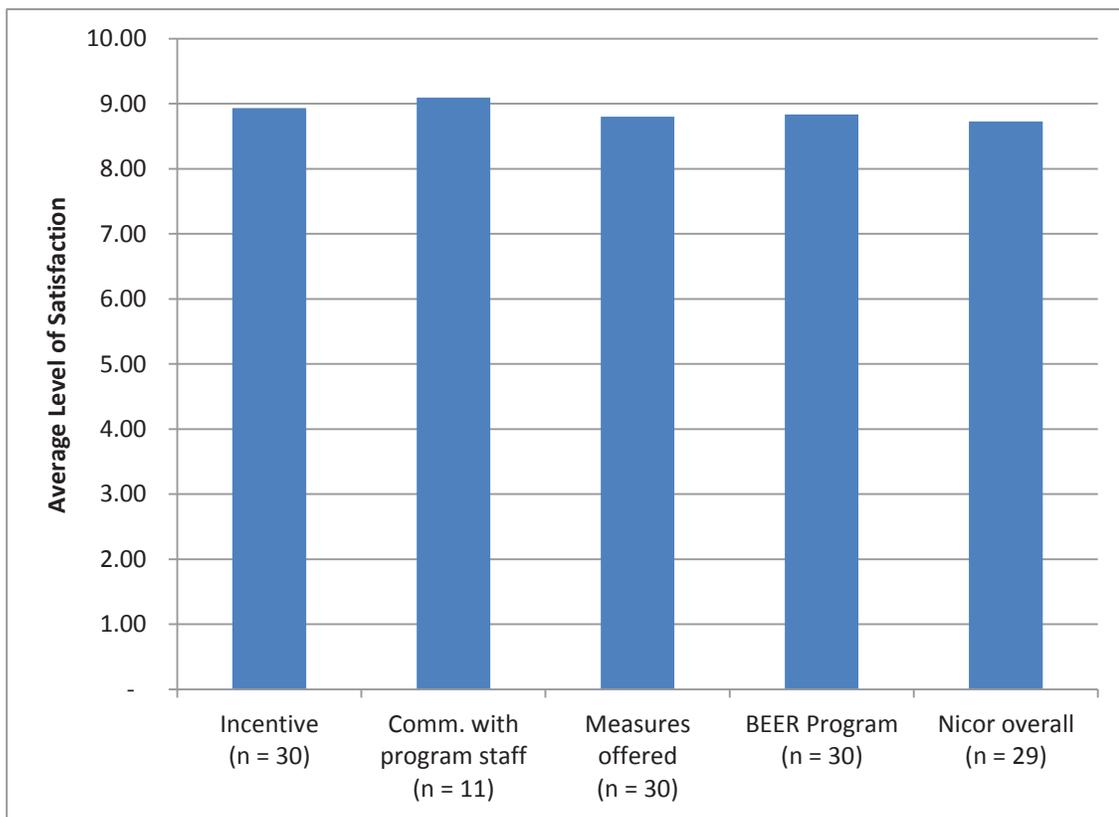
Finding

As part of the participant survey, the evaluation team spoke with customers about their satisfaction with the BEER Program. Satisfaction data was collected using a 0 to 10 point scale and recoded into the three analysis categories: dissatisfied (0-3), neutral (4-6) and satisfied (7-10). With this approach the evaluation team sought to address the key evaluation question on customer satisfactions and ways to improve on the customer experience.

Overall, participating customers appear to be very satisfied with the BEER Program; 94% of the customers surveyed reported being satisfied with the program overall. All the participants who had contact with the Nicor Gas staff were satisfied with their experience, and rated it at 7 or above (or then 0 to 10 scale). Only 38% of survey respondents had contact with the Nicor Gas staff and were able to answer this satisfaction question. Since minimal contact between customers and Nicor Gas staff is typical, this is not an unexpected result. The average level of satisfaction among respondent who were able to answer the question was 9, indicating that they were very satisfied with their experience. Customer satisfaction with the program attributes is reported in Figure 3.1.

When asked if they plan to participate in the BEER Program again in the future, a majority (65%) of participants responded in the affirmative, and additional 26% indicated they may participate again in the future. Although some (44%) participants could offer no recommendations for improving the program, of those who did, more than a quarter (29%) called for higher incentives for program measures.

Figure 3.1 Satisfaction with Program Attributes



Source: Participant survey

3.2.4 Are trade allies satisfied with the program? In what ways can the program improve the trade ally experience?

Finding

All five trade allies interviewed were satisfied with the program and its role in their businesses. Some participants indicated that the program has become an asset to their sales pitch and in one instance increased their business.

The trade ally that provided a partial survey discussed their working relationship with Nicor Gas as very positive, and how much they prefer to work with Nicor Gas rather than the other

regional utilities. From the paperwork, to staff accessibility, and the open dialogues, this trade ally is very satisfied working with Nicor Gas.

All trade allies have found that their customers are very satisfied with the program. One trade ally indicated that they are finding it increasingly confusing to navigate programs, not with Nicor Gas specifically, but with all the available rebate programs. As a result, they feel they cannot provide their customers with rebate program information that is specific to that customer and types of equipment they could qualify for. One trade ally concluded that Nicor Gas took more pride and ownership in their incentive programs, and as a result, their relationship reflected better in their service and the influence they had with their customer.

Trade allies also unanimously agreed that the program has given them an increased level of customer service without compromising services in other areas of their business. Very significantly, two trade allies indicated that their sales have increased within the past two years and are attributed to the program. Although small, 5% and 15% respectively, this finding indicates that the Program has helped these businesses develop through difficult economic times. All trade allies plan on participating in the program next year.

Recommendation

- Navigant recommends that the IC continue to conduct a focus group with trade allies to determine what marketing material they find to be the most effective in recruiting new and repeat customers.
- Similar to the participant survey, Navigant was unable to obtain a high success rate when attempting to conduct the process survey with participating trade allies. Navigant recommends that Nicor Gas encourage trade allies to participate in surveys conducted. One method would be to conduct the survey shortly after rebates have been paid. Another potential solution would be to add additional language to the trade ally contract.

3.2.2 Is the program successfully referring customers to the other business programs? Can program coordination be improved?

Finding

From program staff interviews and program documentation, Navigant established that customer referrals are happening between the BEER Program and the Small Business and Custom Programs. The IC reports program referrals in weekly and monthly reports to the utility. ...

Recommendation

- The BEER Program through coordination with other Business programs should continue to coordinate efforts in tracking referrals to and from the programs.

4. Findings and Recommendations

4.1 Key Impact Findings and Recommendations

The primary impact findings and recommendations are as follows:

Finding: Navigant found that steam trap measures represent approximately 85% of the total reported gross therm savings. Much of the program's ability to achieve its goal can be attributed solely to steam trap measures. Navigant acknowledges that new programs sometimes rely on just a few measures to achieve savings and then diversify over time.

Recommendations:

- The program should work to diversify the registered trade ally pool to include additional types of equipment/measures.
- Future evaluations should include secondary research on commercial and industrial steam trap measures to ensure prescribed savings are accurate.

Finding: Upon reviewing the program tracking database, Navigant found that certain key variables that aid in the evaluation process were not included in the tracking data provided for review, although it is the understanding of the evaluator that this data is tracked. The Implementation Contractor (IC) provided unit measure savings estimates for program qualifying measures. Navigant performed a review and verification of the algorithms and assumptions. Our estimates from the TRM were in agreement with those provided in the IC's documentation. The IC's estimates were considered accurate for GPY1 application.

Recommendations:

- The IC should ensure that unique project identifiers are provided in the tracking system for review by the evaluator.
- The IC should ensure information provided in hardcopy or handwritten applications are accurately transferred into the tracking system. The IC should ensure the type of business or facility type indicated in the project application is provided in the tracking system.
- The IC should also ensure all relevant contact information for both program participants and trade allies is provided in the tracking database. At a minimum, contact name, telephone number, and participant address should be provided for all program participants. A primary contact name and telephone number should be provided for trade allies.

4.2 Key Process Findings and Recommendations

The primary process findings and recommendations are as follows:

Finding

Overall, customers appear to be very satisfied with the BEER Program; 94% of the customers surveyed reported being satisfied with the program overall. Most customers (88%) reported being satisfied with the incentive amount; while 84% reported being satisfied with the incentivized measures/equipment offered by the program.

Finding

Evidence from the program tracking system shows incomplete applications and denials are a challenge to the program implementation.

Recommendation:

- The program implementation team should work with the participating trade allies to streamline and simplify the application process; including providing additional information about qualifying units before the energy efficient projects are undertaken, in order to reduce the number of rejected applications.

Finding

Navigant found that during the Rider 29 evaluation, program participation and savings did not meet initial program planning goals. In GPY1 of Rider 30, program staff took steps to increase program marketing and outreach efforts and added new program measures (steam traps and commercial kitchen measures) to achieve program goals. Navigant found that the program made successful modifications to achieve the savings goals and at a lower than projected incentive cost.

Finding: Navigant found that significant efforts have been made to improve on the program marketing and outreach activities to trade allies since the beginning of Rider 30. The IC increased the total registered trade allies from 1,000 to 4,169. Only 41% of the survey respondents reported that they used a program-qualified trade ally.

This suggests that both the program and the trade allies may not be promoting the program-qualified trade ally status feature to the fullest extent possible.

Recommendation:

- Navigant recommends that the IC continue to train and recruit new trade allies to aid in the promotion of the BEER program. Because the participation of trade allies is vital to both program promotion and to facilitating the program application process, Navigant also suggests that the IC implement an additional set of incentives for trade allies, such as rewarding higher trade ally volume through such means as listing on Nicor Gas website based on cumulative savings brought in.
- Although contractors are encouraged to participate in co-branding of their company's website and marketing material, it may also be effective to encourage

trade allies to promote their program-qualified status to participating and potential customers. By informing customers of their status (either vocally or through marketing material) as a registered Trade Ally with Nicor Gas, customers may be more comfortable participating in future program offerings.

In January 2013, Nicor Gas implemented a web-based tool that allows customers to find contractors with the contractor circle that provides service to their county, customer segment (i.e. residential, large commercial, small commercial), and the type of service required (e.g. commercial boiler installation, central air conditioning installation, etc.). This tool should facilitate customers' ability to find program affiliated contractors.

Finding: Participation in the participant survey did not meet the designed sample size of 75 completes. Although Navigant contacted 146 participants, only 34 agreed to participate in the survey. Although there were few outright refusals to participate in the survey, many participants indicated that they did not have time and calling back at a later time would be better. Many of the later callbacks did not result in the customer's participation, but rather another refusal to participate. It should be noted that while the sample of 34 participants represented 13% of the population, it accounted for approximately 80% (or 1,392,269 therms) of the ex-ante gross savings claimed.

Recommendations:

- Improve the quality of the customer contact name and telephone number data in the tracking system so the correct survey contact can be targeted from the outset.
- Discuss the verification obligation with customer contacts at the time of project implementation activity – note that there is a requirement to participate in a brief survey, if contacted.
- Include a note of obligation to participate in verification, if contacted, with the rebate check payment letter.
- Send out a reminder note of the verification obligation in post-project follow-up communication with the customer.
- On the application form Terms and Conditions, state that, if contacted, responding to verification interviews is a requirement of program participation. Navigant recommends changing the current wording from:

“Current C&I PY2 Application Forms Terms & Conditions: Verification: Any customer receiving a rebate check may be contacted by an evaluator to verify service/equipment installation or be asked to complete a customer survey.”

to

“Verification: Any customer receiving a rebate check may be contacted by an evaluator to verify service/equipment installation or be asked to complete a customer survey. If contacted, your participation is required.”

5. Appendix

5.1 Glossary

5.1.1 High Level Concepts

Program Year

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

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

Verified Savings composed of

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

These are savings using deemed savings parameters when available and after evaluation adjustments to those parameters that are subject to retrospective adjustment for the purposes of measuring savings that will be compared to the utility's goals. Parameters that are subject to retrospective adjustment will vary by program but typically will include the quantity of measures installed. In GPY1 Nicor's deemed parameters were defined in its filing with the ICC *[add footnote to the source]*. The Gas utilities agreed to use the parameters defined in the TRM, which came into official force for EPY5/GPY2. *[Is there a document we can footnote for this agreement?]*

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

Impact Evaluation Research Findings composed of

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

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

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

5.1.2 Program-Level Savings Estimates Terms

N	Term Category	Term to Be Used in Reports‡	Application†	Definition	Otherwise Known As (terms formerly used for this concept)§
1	Gross Savings	Ex-ante gross savings	Verification and Research	Savings as recorded by the program tracking system, unadjusted by realization rates, free ridership, or spillover.	Tracking system gross
2	Gross Savings	Evaluation-verified gross savings	Verification	Gross program savings after applying adjustments based on evaluation findings for only those items subject to verification review for the Verification Savings analysis	Ex post gross, Evaluation adjusted gross
3	Gross Savings	Evaluation-Verified gross realization rate	Verification	Verified gross / tracking system gross	Realization rate
4	Gross Savings	Research findings gross savings	Research	Gross program savings after applying adjustments based on all evaluation findings	Evaluation-adjusted ex post gross savings
5	Gross Savings	Research Findings gross realization rate	Research	Research findings gross / ex-ante gross	Realization rate

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

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

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

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

5.1.3 Individual Values and Subscript Nomenclature

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

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

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

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

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

5.1.4 Incorporated From the TRM

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

Custom: Measures whose energy savings algorithm and/or inputs, or metering results apply only to the individual customer who is implementing them and has no deemed measure.

Prescriptive: Measures whose energy savings algorithm and inputs are fixed within the TRM and may not be changed by the Program Administrator. Two subcategories of prescriptive measures are included in the Illinois TRM:

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

Partially Deemed: Measures whose energy savings algorithms are deemed in the TRM, with input values that may be selected to some degree by the Program Administrator.

5.2 *Program Theory and Logic Model Review*

Program Theory

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

Program Goals

The goal of the Business Prescription program is to produce long-term natural gas energy savings in the business sector by promoting the purchase and installation of prescriptive measures by commercial and industrial customers that would not have upgraded to high-efficiency equipment in the absence of the program. The immediate objectives to achieve this goal are:

- Increase the market share of commercial-grade high-efficiency technologies sold through market channels.
- Increase the installation rate of high-efficiency technologies in business facilities by businesses that would not have done so in the absence of the program.
- Improve operating energy efficiency of existing long-life equipment to ensure peak operating efficiency for business customers.

An additional, secondary objective of the Prescriptive program is to identify energy saving opportunities that are not standard and channel those opportunities to the Custom program.

Motivating Conditions/Barriers

Potential barriers for the program include a lack of awareness of energy efficiency opportunities, for both trade allies (HVAC and water heating distributors, retail contractors, engineering firms and select retailers) and commercial and industrial customers (facilities operators and energy managers).

A secondary set of barriers include financial concerns, such as the increased incremental cost of more energy efficient measures and lack of financing for said measures.

Target Audience

The target audience for this program is commercial and industrial customers with more complex facilities who are planning to purchase new equipment and replace equipment in their existing business, who would benefit from a custom approach.

Desired Actions/Behaviors

The program encourages the purchase and installation of specifically prescribed high-efficiency measures, and will attempt to transform the commercial market by seeding the

market for efficient gas measures. The installation of prescriptive measures as well as any participant/non-participant spillover will achieve savings for this program.

Strategies/Rationale

The main strategy of the Business Energy Efficient Rebate Program is to influence trade allies to promote and install qualifying measures with Nicor Gas' commercial and industrial customers. Nicor Gas will develop an outreach program targeting the trade allies and leveraging relationships from the pilot year of the program. Nicor Gas will also incent trade ally training and in order to increase the availability of knowledgeable contractors that can install and service qualifying equipment that could be incentivized by the program. Primarily, however, the program will offer incentives for efficient equipment to alleviate the barrier of higher first-cost purchase prices of qualifying equipment.

Messages/Communications Vehicles

The Business Prescription program primarily relies on trade allies to promote the program to Nicor Gas' commercial and industrial customers. As a result, much of Nicor Gas' marketing for this program is focused on trade allies that service commercial and industrial facilities. Nicor Gas provides trade allies with educational materials intended to be shared with their customers such as program marketing materials and application forms, and life cycle cost analysis and worksheets.

Additionally, the program will undertake direct marketing to customers through coordination with the Nicor Gas Business Customer Support (BCS) team by creating simple messages for the BCS to present to customers. Also, the program website will provide all of the necessary information to promote the program, including a program handbook designed to help customers determine their eligibility and complete the application process.

Program Logic

This section presents how the Business Prescriptions program activities logically lead to desired program outcomes. **Error! Reference source not found.** presents the Nicor Gas business Prescription program logic model diagram showing the linkages between activities, outputs, and outcomes, and identifying potential external influences. The diagram presents the key features of the program. The logic diagram presented here is at a slightly higher level than the tables in the report, aggregating some of the outcomes in order to provide an easier-to-read logic model.

The remainder of this chapter presents the resources, activities, outputs, outcomes, and associated measurement indicators associated with the Business Prescriptions Program.

Resources

The ability of the Business Prescriptions program to generate the outputs and outcomes likely to result in the program reaching its goals depends in part on the level and quality/effectiveness of inputs (resources) that go into these efforts. There are also external

influences that can help or hinder achieving anticipated outcomes. Key program inputs and potential external influences are shown in **Error! Reference source not found.**

Table 5-1. Program Inputs and Potential External Influences

Program Inputs
<ul style="list-style-type: none"> • Nicor Gas ratepayer funds • Nicor Gas staff resources • Implementer staff resources and experience • Utility knowledge of the target market
External Influences and Other Factors
<ul style="list-style-type: none"> • Economic environment • Natural gas prices • Customer and trade ally awareness of energy efficiency options

Activities

The purpose of the Business Prescription program is to educate and assist eligible non-residential customers with making their facilities more energy-efficient. The program will reach eligible customers through activities designed to generate energy savings over the longer term (see **Error! Reference source not found.**). These activities are as follows:

- Develop informational and marketing collateral
- Develop outreach to potential program participants
- Develop outreach to program trade allies
- Educate trade allies
- Provide rebates for qualifying projects

Figure 5.1 Program Logic Model

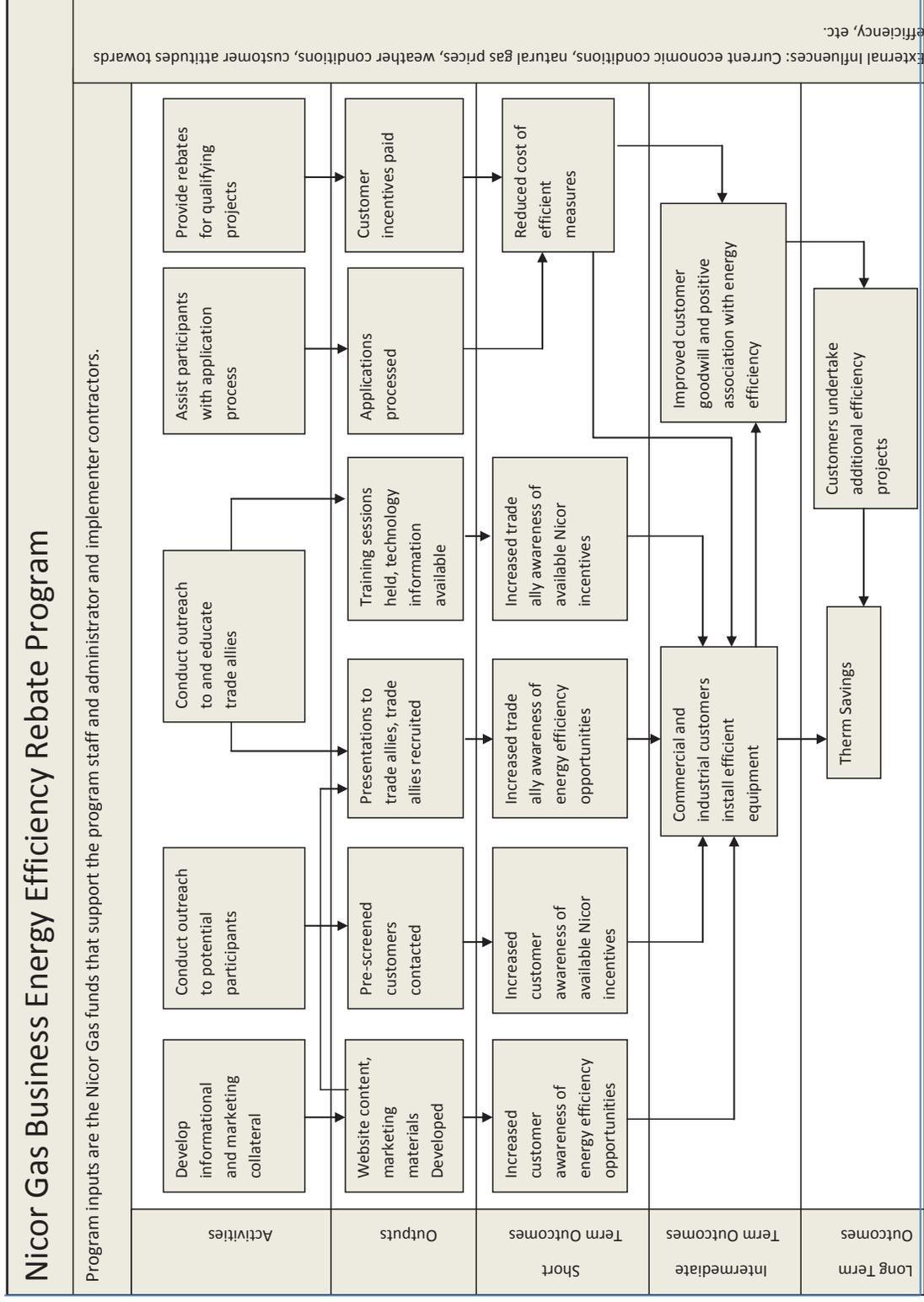


Table 5-2. Business Prescriptions Activities

Develop informational and marketing collateral
<ul style="list-style-type: none"> • Update website with information on programs and informational materials
Develop outreach to program participants
<ul style="list-style-type: none"> • Identify eligible customers • Conduct outreach activities to pre-screened customers
Develop outreach to trade allies
<ul style="list-style-type: none"> • Develop materials to market program to potential trade allies • Participate in events such as industry trade shows and conferences
Educate trade allies
<ul style="list-style-type: none"> • Provide program training for all trade allies, including presentations • Prepare marketing materials to provide to trade allies for their customers, such as brochures.
Assist participants with application process, pre- and post-inspection visits
<ul style="list-style-type: none"> • Assist customers with the applications process • Conduct pre- and post-inspection visits where deemed appropriate
Provide rebates for qualifying projects
<ul style="list-style-type: none"> • Maintain energy savings and rebate calculators • Maintain tracking system to reserve and track incentives

Outputs, Outcomes, and Associated Measurement Indicators

It is important to distinguish between outputs and outcomes. For the purposes of this logic document, outputs are defined as the immediate results from specific program activities. These results are typically easily identified and can often be counted by reviewing program records. Outcomes are distinguished from outputs by their less direct (and often harder to quantify) results from specific program activities. Outcomes represent anticipated impacts associated with Nicor Gas' program activities and will vary depending on the time period being assessed. An example would be therm savings. On a continuum, program activities will lead to immediate outputs that, if successful, will collectively work toward achievement of anticipated short, intermediate, and long-term program outcomes.

The following tables list outputs (**Error! Reference source not found.**) and outcomes (**Error! reference source not found.**), taken directly from the logic model, and associated measurement indicators. For each indicator, a proposed data source or collection approach is presented.

Table 5-3. Program Outputs, Associated Indicator and Potential Data Sources

Outputs	Indicators	Data Sources and Potential Collection Approaches
Outreach to commercial and industrial customers	List of potential customers Number of end-users contacted	Interviews with program staff Program records
Website content, informational pamphlets, print advertisements	Number and type of print materials developed. Content of website.	Interviews with program staff, electronic copies of print materials
Presentations to key trade allies, outreach to others	Number of presentations made. Presentation documents developed for meeting. Number of allies and auditors contacted	Interviews with program staff.
Training for trade allies, providing technical support	Number of training sessions held, technical information made available to trade allies	Interviews with program staff Lists of training attendees
Customer rebates	Number of rebates offered and amount.	Interviews with program staff Program tracking data

Table 5-4. Program Outcomes, Associated Indicators and Potential Data Sources

Outcomes	Indicators	Data Sources and Potential Collection Approaches
Short-Term		
Increased customer awareness and knowledge of efficiency programs	Percent of commercial and industrial customers aware of rebate Nicor Gas program	Customer surveys
Growing number of knowledgeable trade allies	Number of trade ally contacts made Number of participating trade allies	Interviews with program staff, trade allies and tracking system.
Customers are aware of the many potential efficiency projects	Number of participants	Interviews with program staff Tracking system
Reduced cost of efficient equipment	Percent of incremental cost paid by incentive	Program tracking data
Intermediate-Term		
Network of trade allies working to promote energy efficiency in commercial and industrial customers	Number of participating allies	Interviews with program staff Trade ally surveys Tracking system
Increased customer goodwill towards Nicor Gas and its programs	Customer satisfaction with incentive and experience	Customer surveys
Longer-Term		
Commercial and industrial customers install efficient equipment and receive rebates	Number of rebates issued, total therms saved	Program tracking data
Program participants undertake additional efficiency projects	Percent of customers installing efficient measures	Tracking data Customer surveys

5.3 *VDDTSR Memo*

To: James Jerozal, Dan Rourke; Nicor Gas Program Managers

Copy: Jennifer Hinman, David Brightwell; ICC
Randy Gunn, Julianne Meurice, Laura Agapay; Navigant, Inc.

From: Nick Beaman and Charles Ampong; Navigant, Inc.

Date: July 25, 2012

Re: Verification, Due Diligence and Tracking System Review of Nicor Gas Rider 30 Business Energy Efficiency Rebate Program

This memo provides the results from Navigant’s verification and due diligence review of the quality assurance, program tracking, and savings verification procedures of the Nicor Gas Business Energy Efficiency Rebate Program (BEER Program), during the Rider 30 program’s first year. Navigant reviewed the program tracking data and application documentation for five projects comprising of forty installed measures. The verification and due diligence recommendations are based on findings from interviews with program staff, the implementation contractor (IC), documentation and tracking data review, and comparing the BEER Program’s activities to national best practices. The primary areas of inquiry of this task were to determine:

- Appropriate eligibility criteria have been adhered to and applications were appropriately completed and documented;
- The QA/QC activities were adequate and unbiased (i.e., did samples meet statistical criteria, was there incorrect sampling that skewed results, etc.);
- Savings were calculated correctly compared with program assumptions;
- Project information was entered in the tracking system in an accurate and timely manner; and
- The data needed for program evaluation were thoroughly captured by the program tracking system during program year 1 (GPY1).

Overview of Findings

Verification and Due Diligence

Overall, most of the quality assurance and verification procedures in place for the BEER Program, as outlined in the Rider 30 Program Portfolio Operating Plan, and the program Implementation Policy provide detailed QC/QA procedures for verifying measure and customer eligibility, application process, and onsite inspections for qualifying project installations. These QA/QC measures are found to meet or exceed quality assurance expectations.

The BEER Program relies heavily on active trade ally participation to recruit customers. The program implementation contractor (Resource Solutions Group—RSG) utilizes field representatives (i.e. outreach leads and specialists) to facilitate the recruitment and building relationships with trade allies, installers and business associations to encourage active participation in the program. The program sponsors Trade Ally Focus Group meetings mostly on bi-monthly basis to discuss the program and the market, and how

to help direct the program's growth. The program provides the opportunity for trade allies to become members of the Nicor Gas Contractor Circle, to allow them to offer the rebate to their customers as an instant discount, guarantees a business listing on the Nicor Gas EEP website, and also ensures that trade allies receive regular program updates. Customer participation in the program has been impressive and continues to grow with increasing market penetration (from the 5/31/2012 tracking database there are 218 customers with paid incentives, 1,621 measure installations, achieving 161% savings compared to program GPY1 goals).

Navigant reviewed the application procedures for the BEER Program and determined that the measure application forms provide sufficient information for customers to submit completed applications to qualify for incentives through the BEER Program. Each measure application form requires customer and contractor business addresses and site contact information, utility type, building/business type and whether existing building or new construction, equipment specifications, and other terms and instructions for rebate application. The application form should include a field to record gross estimates of expected savings. Additionally, adding a requirement on applications that a customer participate (if contacted) in evaluation activities, such as telephone surveys, may be beneficial to the program. Navigant recommends including a clause in the Terms in Conditions section of the application stating: "Participants agree to cooperate with the Nicor Gas Energy Efficiency Program or Program representatives in evaluation activities, including, but not limited to telephone surveys and on-site inspections."

Navigant reviewed the documentation regarding program changes to service, deemed savings and incentive offerings for additional new measures not included in the Nicor Gas compliance filing. Three new measures including steam boilers, pool covers and pipe insulation were approved and introduced into the program in October 2011. Additionally, the rebate structure of the steam trap measure was revised to incorporate additional tiers to capture available higher level savings. Navigant verified that the market reach for these additional tiers is significant to justifying the approach to capture another level of savings. Navigant verified the IC has documented the program responses to these changes including updating program application forms and work papers, as well as the tracking system. Navigant observed the market segmentation fact sheets and the outreach E-blast announcements appear to be effective communication and marketing tools to increase program awareness and promotion, especially when a new business prescriptive measure is approved and introduced into the program.

Navigant reviewed the IC work paper algorithms and the default savings assumptions for the qualified product list. Navigant will provide inputs to the program default savings and make recommendations in a separate memo to be addressed to the program staff. The memo will take into account the default values from the Illinois Statewide Technical Reference Manual.

Navigant verified that incomplete applications and denials continue to be major challenge for the BEER Program implementation. The program denial rate of submitted applications stands at about 10% by the end of GPY1, although the program exceeded the GPY1 savings goal. The program staff has indicated that the customer eligibility requirements and denial codes are being reviewed to address the denial rates for eligible customers submitting applications for eligible equipment.

The IC has designed guidelines for post installation on-site inspections, and have hired an independent subcontractor to perform 3% post on-site inspections of installed measures (inspect 3% of each installed measure type as opposed to 3% of the total units, to guarantee inspections across all measure types). Since March of 2012, the program has introduced a web based Business Customer Experience survey. Navigant reviewed a spreadsheet extract of customer responses from the customer survey. Since the

data was in a raw format, Navigant was unable to verify how the responses from the survey are used to generate a scoring scale to determine customer satisfaction and overall customer perception about the BEER Program.

Reporting and Tracking Findings

Navigant reviewed the data fields and data input into the Business Rebate tracking database (year end 5/31/2012 extract) and found that overall, the program tracking database captures the vital information that enables accurate tracking of the program's participation and claimed savings. The structure of the database is simple and the inputs provide clear descriptions of the installed efficient measures, information about paid projects, status of pipeline projects, and number of incomplete and rejected applications. The tracking database has records of installed efficient measure specifications including the make and model, efficiency, type and size, equipment purchase dates, installation and check payment dates. Navigant observed that both measure application forms and the tracking system do not have data fields for recording the specifications of the replaced baseline equipment. Although the rebate number appears to be used as customer ID, it appears a unique project ID is still needed for each customer (assuming customers can have different projects at different locations or facility).

The tracking system accurately records program default gross and net savings of installed measures. Navigant identified several instances where it appears customer rebates estimates were not properly transferred into the tracking system; many of the per unit measure rebates recorded in the tracking system do not match with program offering incentives. Such inconsistencies were observed for steam traps and boiler measures. Details are provided in the tracking system review section of this report.

Navigant reviewed project documentation of five samples chosen for project engineering file review and compared with corresponding entries in the program tracking system. Navigant verified that these projects were paid and the documentation included filled and signed application forms, itemized invoices, measure specifications, incentive request worksheets, and copies of paid checks. Overall, it appears the IC adequately reviews paper applications and accurately transfers the information into the program tracking system. We observed in some cases customer/measure information were not adequately documented. It was found from the file review that two out of five customers did not specify the equipment purchase date on the application forms, and in two out of five files, the measure installation date shown in the application forms did not match with records in the tracking system. Navigant noticed the program Applications Forms can be updated to have fields to record gross estimates of customer energy savings.

Overall, the IC appears to be doing well in meeting the QC/QA performance metrics. From the review of the 5/31/2012 tracking database and monthly delivery report for March, 2012, it appears the IC accomplishes rebate processing within the 14 days target. Significant outreach efforts were made, achieving 124% of the monthly goal within the same period. A Business Customer Experience Survey has been initiated to solicit customer and trade ally satisfaction with the BEER Program. Navigant will review the progress of the survey as part of the overall program process evaluation efforts.

Summary of Recommendations

Based on review of the Nicor Gas Business Rebate planning documents, the current tracking system implementation, and general best practices for program management, the Navigant EM&V team offers the following recommendations to enhance current quality assurance and verification activities:

- Navigant acknowledges that the program staff is reviewing the customer eligibility requirements and denial codes in the tracking system to address the denial rates for eligible customers submitting applications for eligible equipment. The denial rate was estimated by WECC to be approximately 10% by May 31, 2012. We are hopeful the program staff will resolve any barriers and fine tune the application process to reduce the denial rates.
- Measure application forms should document the condition of the baseline equipment and provide customers with information not only about the rebate offering, but also about how much energy savings they can result in. In this case the application form can be updated to enable customers to record estimates of expected gross savings from the installed measures.
- Navigant acknowledges that the design and implementation of the Customer Experience Survey was introduced late into GPY1. Navigant recommends the response tracking spreadsheet should be designed to generate the scoring and overall program customer satisfaction scaling. Customer survey responses should be linked with the customer ID or rebate number, and properly linked with the customer data in the tracking system. A similar approach is necessary for dealing with information gathered from the Complaint Tracker/Logging database.
- The IC should inspect the first few projects submitted by a newly recruited trade ally, or the first few instances of a new measure in the program (e.g. steam boilers). Inspection of measures with small per customer rebates but are high impact measures that account for a large proportion of program savings is also recommended.
- Information on boiler sizes and efficiencies, as shown in the program Operating Plan, may need revising to reflect updates in the current application forms. Boiler size above 299 MBH should be 85% thermal efficiency (TE) or 90% TE, instead of 85% or 90% AFUE. As found in the Operating Plan, showing the boiler sizes as <500 MBH or <1000 MBH could be misleading, keeping in mind the program offering for boilers with sizes up to 299 MBH. Instead, these should be designated respectively as 300- 499 MBH or 500-999 MBH. The Operating Plan should be updated to account for all Steam Trap measure types, savings and incentive offerings (especially for industrial/process steam traps at different pressure sizes).

Navigant offers the following recommendations to improve on data tracking system and reporting for the BEER Program:

- Navigant recommends that in addition to the dedicated Rebate Numbers assigned to applications in the tracking system, the program should develop a unique Project Identification Number for each project implemented by customers. The rebate numbers are not very handy, for example a rebate number is shown in the format “1-20120227-20161” (other numbers are one digit shorter e.g. 1-20111108-6244), and another is shown in the format “N700026”.
- The IC should ensure program incentives are accurately applied to respectful measures. The tracking system must be updated regularly as program changes and new measures are introduced (boiler sizes should be updated so that 300- 499 MBH is updated to 301- 499 MBH, or the “up to 300 MBH” should instead read “up to 299 MBH”).

- The IC should consider including additional project information in the program files and tracking system, such as a unique numeric project identification number. The post inspection checklist should be designed such that inspection findings can be easily transferred into the tracking system. Customer survey and complaint resolution tools should record project IDs assigned to customers in the tracking system, and responses should be linked to customer data in the tracking system.
- The IC should develop a tracking database field dictionary that will provide clarification for how the rebate numbers are generated, define terms like “AFUE as yet undefined” and “Savings as yet undefined”, and provide lookup definitions in the tracking system for the business building types numbered from 1 to 15. Navigant observed in addition to the 15 building types, the tracking system contain “OTR” to mean “other buildings” or miscellaneous.
- With the exception of the rebate cost, the tracking system does not record any cost information associated with the measures installation such as equipment cost, installation cost, incremental or total cost, measures useful life etc. The IC should track the cost data, some of which are provided in the customer application documents. This information is needed for the BEER Program cost-benefit analysis.
- Navigant observed that the 5/31/2012 tracking database extract has savings and rebate estimates recorded for several measures/projects which applications were denied. While this may be for recording purposes, it may be misleading for program staff unfamiliar with the tracking system to assume these were realized savings. The other option would be to zero off these values in the tracking system.

Data Collection

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

- Interview program managers and implementers
- Review program documentation (Applications, Operating Plan, Implementation Policy, etc.)
- Review marketing and outreach efforts
- Desk review of project files
- Review program operating procedures
- Review program tracking system
- Compare program activities and materials to national best practices

Interview with Program Managers and Implementer

Navigant conducted a telephone interview with representatives from Nicor Gas, the program administrator (Wisconsin Energy Conservation Corporation—WECC), and the implementation contractor (Resource Solutions Group—RSG), to review the program’s accomplishments and challenges to date. The telephone interview included prepared question topics such as program administration, program outreach and marketing, program delivery mechanisms, customer satisfaction, and implementation challenges. At the conclusion of each interview, Navigant provided extra time to discuss any questions or raise additional topics that were not already covered in the telephone interview.

Review Program Documentation

The program documentation reviewed by Navigant included the Rider 30 program’s Operating Plan¹², Implementation Policies and Procedures¹³, Nicor Gas Compliance Filing¹⁴, Quality Assurance/Quality Control Plan¹⁵, and the Rebate Processing Manual and Program Guidance¹⁶. Other documentation included reviewing the program tracking database (year end extract 5/31/2012), measure applications forms, monthly program delivery report, measure work papers, and marketing materials. The program’s Operating Plan and the Implementation Policies clearly describe the program logic and key performance indicators, and provide detailed QA/QC procedures and program guidelines for measure and customer eligibility, reviewing customer applications, and processing customer incentives. The BEER Program’s measure work papers contain engineering assumptions and the methodology used to estimate default savings for many of the eligible measures. The program monthly delivery report highlights potential and realized energy savings, program performance and challenges. The marketing and outreach documents included newsletters and marketing fact sheets, trade ally focus group meetings and training notes, and the E-blast announcement information for promoting newly introduced C&I prescriptive measures. Navigant found that the Rebate program’s marketing and outreach materials were generally consistent with the program’s marketing goals.

Desk Review Projects Files

Navigant requested from the IC and reviewed the project documentation of five samples chosen for project engineering file review¹⁷. We verified that these projects were paid and the documentation included filled and signed application forms, itemized invoices, measure specifications, incentive request worksheets, and copies of paid checks. We observed minor instances where customers did not specify the equipment purchase date on the application forms (observed from rebate numbers “N700021” and “1-20120203-17429”). We observed that the measure installation date shown in the application forms for rebate number “1-20120203-17429 and rebate number “1-20111221-11842”, do not match records in the tracking system.

Review of Program Operating Procedures and Tracking System

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

- Application Submittal and Pre-Review
- Incentive Approval and Payment
- Inspection and Verification

¹² Nicor Gas Rider 30 EEP Program Portfolio Operating Plan (Version 1.1)

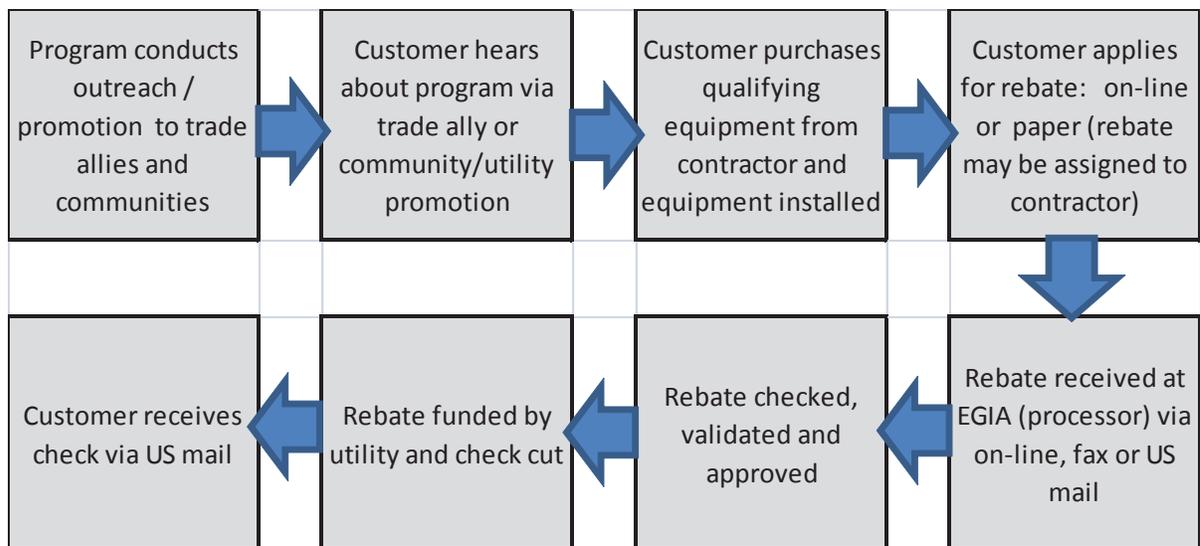
¹³ Nicor Gas Business EE Rebate Program Policies and Procedures (August 1, 2011)

¹⁴ Nicor Gas EEP 2011-2014 Revised Plan Filed Pursuant to Order Docket No. 10-0562 (May 24, 2011)

¹⁵ Business EE Rebate & Business Custom Incentive Programs QC/QA Plan. Statement of Work deliverable – Task 2 (8/1/2011)

¹⁶ Nicor Gas Business EE Rebate Program Rebate Processing Resources & Call Center Script (10/06/2011)

¹⁷ Rebate Numbers reviewed were N700021; N400003; 1-20111221-11842; 1-20120203-17429; and 1-20111219-11566



BEER Program Customer Process Flow (Source: Nicor Gas Rider 30 EEP Program Portfolio Operating Plan)

Application Submittal and Review

The Rebate program provides options for Nicor Gas customers to submit online applications or mail-in applications. Generally, after a customer installs a project that includes pre-approved equipment on the BEER Program’s qualified product list, the customer (or trade ally on behalf of the customer) submits an application and supporting documentation to the program. Program technical staff reviews a customer’s application to confirm that the customer and the installed equipment are eligible for the program. Program staff also verify that the application and accompanying information is complete by verifying the customer’s contact information (to determine whether the customer is serviced by Nicor Gas), technical specifications for installed equipment, invoices or proof of purchase receipts for the installed equipment and compliance with other program rules. The technician then assigns a dedicated Rebate Number for each submitted project and inputs the data into the program tracking system. The program allows customers up to 120 days following installation to submit applications and supporting documentation. If an application meets all requirements, but the installed equipment/product is not on the qualified product list, the product is reviewed manually by the program subcontracted Rebate Processor (EGIA) for eligibility. If an application does not meet all of the requirements, with the exception of the qualified product, the application status is updated to “Denied” in the program tracking system, and a Denial Letter is then mailed to the applicant, detailing the reason for denial. Applicants have 14 business days to submit any additional information that may prove eligibility. If no response is received within this period, the application is denied and no further action is taken by the Rebate Processor unless the applicant contacts the IC directly.

Incentive Approval and Payment

If the customer’s application is approved for an incentive, the program staff notifies the customer of the approved incentive payment. Incentives are targeted at an average of 30-40% of incremental measure costs. Depending on the amount of the incentive check, one or more program managers from Nicor Gas or WECC must approve the project file prior to issuance. Upon sending the incentive check to the customer, program staff marks the project as “Paid” and uploads the scanned check(s) and documentation to the program tracking system. If the applicant receives a rebate check and disputes the amount of the rebate paid, the resolution is processed via the Rebate Discrepancy Resolution procedures outlined in the program Implementation Policies and Procedures.

Inspection and Verification

The post-installation and verification activities are focused on ensuring the QA/QC performance metrics for measure installation were followed. The Nicor Gas BEER Program does not require pre-inspection, but after receiving a final project application, a program staff or a subcontractor returns to the project site and conducts a post-installation inspection. The IC has designed guidelines for post installation on-site inspections, and have hired an independent subcontractor to perform 3% post on-site inspection of installed measures (inspect 3% of each installed measure type as opposed to 3% of the total units, to guarantee inspections across all measure types). The independent subcontractor is developing standardized inspection checklists to record whether the measure is installed as described in the application, whether model and serial numbers matches specification, measure is operational as required, the inspection date and inspector name, and also that the quantity of installation matches the application files.

Tracking System Review

Navigant reviewed the data fields and data input into the Business Rebate tracking database (year end 5/31/2012 extract). The structure of the database is simple and the inputs provide clear descriptions of the installed efficient measures, information about paid projects, status of pipeline projects, and numbers of incomplete and rejected applications. The tracking database has records of installed efficient measure specifications including the make and model, efficiency, type and size, equipment purchase dates, installation and check payment dates. Navigant observed that both measure Application Forms and the tracking system do not have data fields for recording the specifications of the baseline or replacement equipment. The baseline specifications could aid evaluation verification of existing equipment efficiency, age and operating condition, and help to determine whether measure replacement was reasonably based on program requirements.

The savings description field in the tracking system needs to be updated to change “300- 499 MBH” to instead “301- 499 MBH”, and “up to 300 MBH” should read “up to 299 MBH”. While the rebate number appears to be used as the main customer ID, these numbers are not handy and unique in terms of format and digits. Some rebate number is shown in the format “1-20120227-20161” (other numbers are one digit shorter e.g. “1-20111108-6244”), and another is shown in the format “N700026”. The program should consider developing unique project IDs for each customer to enable easy tracking and verification of customer project data.

We compared the measure default savings as recorded in the tracking system to values from the program Operating Plan and default changes since the introduction of new GPY1 measures. We verified that the tracking system accurately records program default gross and net savings for the installed qualifying measures. Navigant observed what appear to be data entry errors for several calculated measure rebates; the calculation of measure rebates do not match the program incentives. For example, for steam traps, while the default savings are accurately tracked, the tracking rebate amounts do not match the program incentives. Similar inconsistencies were found for boiler measures. For example, rebate number “N700026” (condensing boiler 1000 - 1700 MBH, 90% TE) was credited with \$5,000 in rebates in the tracking database instead of the program default \$7,500 rebate. Customer with measure rebate number “N700044” (hydronic boilers with <300 MBH) was assigned a \$1,500 rebate instead of a \$400 rebate. In another case, a hydronic boiler (1000-1700 MBH, 85% TE) was supposed to have a default \$1,750 in rebates instead of \$5,000 in rebates shown in the tracking database.

Navigant compared information in the customer project documentation with corresponding entries in the program tracking system. It appears the IC is adequately reviewing paper applications and transferring information into the program tracking system. This include transferring installed equipment

specifications such as the type, make and model, efficiency, size, equipment purchase dates, installation and check payment dates, and customer and contractor contact address into the tracking system. Navigant observed the tracking system tracks savings and rebate estimates for measures/projects for which applications were denied. While this may be for record purposes, it may be misleading for program staff unfamiliar with the tracking system to assume this to be realized savings. The other option would be to zero off these values in the tracking system. The tracking system would need to be updated for additional project information that would be useful for evaluation, such as pre- and post-inspection findings, inspection dates, make and model of the replaced baseline equipment, measure life and cost

With the exception of the rebate cost, the tracking system does not record any cost information associated with the measures installation, such as equipment cost, installation cost, incremental or total cost, measures measure useful, etc. Navigant observed some of this information was recorded in the customer application forms. This information is needed for the BEER Program cost-benefit analysis.

Benchmarking

To conduct the best practices benchmarking assessment, the evaluation team compared the program implementer’s practices (shown as a bullet list) with the *Best Practices Self-Benchmarking Tool*¹⁸ from the *National Energy Efficiency Best Practices Study* (numbered items in *italic* font) for C&I prescriptive programs. The benchmarking categories used were Quality Control and Verification, and Reporting and Tracking.

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

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

¹⁸ See the Best Practices Self-Benchmarking Tool developed for the Energy Efficiency Best Practices Project: <http://www.eebestpractices.com/benchmarking.asp>

Quality Control and Verification

1. *Assure quality of product through independent testing procedures.*
 - The BEER Program verifies that each product on which incentives are paid meets the prescribed efficiency standards using third-party databases (i.e. ENERGY STAR, GAMA, and AHRI). Products that cannot be verified using a credible third-party database are considered on a case-by-case basis where efficiencies are verified by a qualified engineer.
2. *Use measure product specification in program requirements and guidelines.*
 - The program's Operating Plan outlines the eligible measures and the qualifying efficiency standards. The Application Forms contain specification sheets with equipment eligibility requirements for the program's qualified product list.
3. *Use incremental costs to benchmark and limit payments, and set incentive strategy to maximize net not gross program impacts.*
 - Payments and C&I prescriptive formulas are tied to measure incremental costs. The incentive strategy for all measures considers the likely level of free ridership and seeks to maximize net savings.
4. *Develop inspection and verification procedures during the program design phase.*
 - The IC has designed standardized quality control and quality assurance plan for project inspection and verification. Post installation inspections are scheduled to start in July, 2012 (although late after GPY1).
5. *Implement a contractor screening/certification/training process.*
 - The BEER Program recruits trade allies, installers, and business associations, and sponsor Trade Ally Focus Group meetings to discuss the program and market opportunities. The program provides opportunity for trade allies to become members of the Nicor Gas Contractor Circle and ensures that trade allies receive regular program updates.
 - The IC organizes PEEZZA training sessions on monthly bases to provide training for new and existing trade allies or contractors. The IC is considering the possibilities for incorporating more sophisticated content in the PEEZZA Sessions and/or creating a certification/qualification component to trainings.
6. *Conduct independent on-site post-installation inspections.*
 - The BEER Program is required to conduct random selection and 3% post-installation inspections to verify installations and match equipment models and serial numbers with those provided on the rebate claims.
 - The IC has hired an independent subcontractor to perform 3% post on-site inspections of installed measures (inspect 3% of each installed measure type as opposed to 3% of the total units, to guarantee inspections across all measure types).

7. *Always inspect the first job submitted by a new vendor or Contractor*
 - Post-installation inspection guidelines do not clarify whether program staff should invite the contractor/trade ally during onsite post-installation inspection. The guidelines do not specify if post inspection is a requirement for new trade allies or contractors.
8. *Tie staff performance to independently verified results.*
 - It is unclear how staff performance is evaluated with regard to independently verified results. The Implementation Contractor’s performance is based on the program evaluator’s independently verified results.
9. *Assess customer satisfaction with the product through evaluation.*
 - Navigant is conducting an evaluation for the program that includes process evaluation and impact evaluation. Navigant’s process evaluation efforts will assess customer satisfaction with the BEER Program.

Table 5-6. Comparison of IC Reporting and Tracking Practices to Best Practices Tool

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

Data Reporting and Tracking Benchmarking

10. *Define and identify key information needed to track and report early in the program development process*
 - The BEER Program data requirements were defined early in the program development process and are tracked in the program tracking database.

11. *Use automated or otherwise regularly scheduled notification to achieve close monitoring and management of project progress.*
 - The IC reports once a month to NICOR on all projects. These reports are not automatically generated. The report highlights potential and realized energy savings, summarizes program key performance and application and marketing challenges.

12. *Design program tracking system to support the requirements of evaluators as well as program staff.*
 - The tracking system is fully electronic, but it does not allow real-time reporting of routine functions like monthly portfolio and program reports, and financial tracking. Automated reporting and web-based communications tracking should be pursued, as the program gains penetration in the marketplace to increase staff efficiency.
 - The data tracking system is well designed for use by program staff and review by program evaluators. It tracks customer and contractor, and impact data. The IC and the evaluation team can track the timeline of each project and more easily pinpoint dates when projects passed important milestones in the process.
 - The IC should consider including additional project information in the tracking system, such as post inspection findings, inspection dates, make and model of baseline equipment, measure life and cost information for benefit cost analysis.

13. *Develop accurate algorithms and assumptions on which to base savings estimates.*
 - The IC has developed workpapers with measure savings algorithms, that use empirical data from recent evaluations and are based on acceptable deemed savings approaches. Program default savings may be revised for PY2 after reviewing the Illinois Statewide Technical Reference Manual.

14. *Integrate or link with other appropriate systems such as cross-program databases, customer information systems (CIS) and marketing or customer relationship management (CRM) systems*
 - Most of customer contact information and project details are kept in the tracking database, but additional customer and marketing information is tracked separately. Customer survey responses and complaint logging spreadsheets are not linked to the tracking system.

15. *Verify accuracy of invoices to ensure the reporting system is recording actual product installations by target market.*
 - Customers or contractors are required, as part of the BEER Program terms and conditions, to submit copies of all invoices or other reasonable documentation of the costs associated with purchasing the incentivized equipment. As part of the application review process, program staff compares invoices and purchase orders to the application information to verify measure installation.

5.4 Sampling Details

Verified gross program savings impacts were determined from reviewing program default savings and analysis of sample of participant responses to the telephone survey. Shown in **Error! Reference source not found.** is the profile of the gross impact of the sample participant survey for the BEER Program in comparison with the program population.

Table 5-7. Profile of GPY1 Gross Impact Sample

Population Summary		Sample			
Number of Project (N)	Ex Ante Therms	N	Ex Ante Therms	Sampled Project % of Population	Sampled Therms % of Population
267	1,742,478	34	1,392,269	13%	80%

Source: Navigant analysis of program tracking database (10-06-2012 data extract); analysis of CATI respondents.

Navigant employed the ratio estimation of the population mean technique¹⁹ (approximate variance of the ratio estimate) to analyze the sample reported savings and the verified gross savings. To determine the confidence interval and precision, the team analyzed the variance in the ratio estimation of the gross realization rate. The standard error was used to estimate the error bound around the estimate of verified gross therms. The results are summarized in **Error! Reference source not found.**

Table 5-8. Gross Therms Realization Rate and Relative Precision at 90% Confidence Level

Sampling Strata	Relative Precision at 90% Level of Confidence (± %)	Relative Precision at 90% Level of Confidence			Standard Error (±)
		Low	Mean	High	
Overall Verified Gross Savings RR	0.0%	1.00	1.00	1.00	0.00

Navigant analysis

The mean verified gross realization rate for the sample was 1.00 at zero (0.0%) relative precision at a 90% confidence level. A zero relative precision was achieved based on the fact that there was no variation in the ex ante gross savings and the verified gross savings for each individual measure or project, resulting in a realization rate of 1.00 at the project level and at the program level.

Below are the statistical formulas used to achieve the verified gross realization rate and precision.

¹⁹ Source: Wiley Series in Probability and Mathematical Statistics – Sampling Techniques (2 Ed., 1962, pages 158-159)

$$V(\hat{R}) \doteq \frac{1-f}{n\bar{X}^2} \left[\frac{\sum_{i=1}^N (y_i - Rx_i)^2}{N-1} \right]$$

$$V(\hat{R}) = \frac{1-f}{n\bar{X}^2} (S_y^2 + R^2 S_x^2 - 2R\rho S_y S_x)$$

Where:

$V(\hat{R})$ = variance in the realization rate estimation

$f = n/N$ is the sampling fraction

n = sample size

N = population size

R = Realization Rate (ratio estimation)

\bar{X}^2 = population ex ante mean

S_y^2 = the variance of the sample verified gross savings

S_x^2 = the variance of the sample ex ante gross savings

$\rho S_y S_x$ = covariance between the sample ex ante gross savings and the verified gross savings

5.5 Detailed impact results

As of May 31, 2012, the Nicor Gas BEER Program reported estimated ex-ante gross savings of 1,742,478 therms (1,400,675 therms, ex ante net), through participation of 1,621 measures (from 267 paid projects)²⁰.

Tables 5-1 and 5-2 provide details of the reported measures installed and the distribution of ex ante gross savings for GPY1 compared with BEER Program planning goals. **Error! Reference source not found.** indicates the BEER Program overall achieved 162% of GPY1 planning gross savings. Planning gross savings estimates were exceeded by a few measures only, including Energy Star Fryer (200%), Programmable Thermostats (148%), and most notably by Industrial High Pressure Steam Traps (973%).

Table 5-9. GPY1 BEER Program Participation and Gross Savings Estimates

Category	Incentive Paid	Projects*	Measures Installed	Ex Ante Gross Energy Savings (Therms)	GPY1 Gross Energy Saving Goal	% Gross Savings Goal Achieved	Ex Ante Net Savings
Total	372,058	267	1,621	1,742,478	1,075,101	162%	1,400,675

Navigant Analysis of Nicor Gas tracking database (10/06/2012 data extract)

*- 267 projects were counted from unique project rebate numbers, but 237 unique participants and addresses were identified.

²⁰ Measures marked as “paid” in the 10-06-2012 tracking data extract were assumed to have met program eligibility requirement, and were included in the PY1 population for the ex ante gross impact analysis. A total of 237 unique business participants and addresses were identified from 267 projects participation.

Table 5-10. Profile of Measure Participation and Savings

Savings Measure Description	Savings Unit	Installed (Savings Quantity)	GPY1 Measure Goal	% Measure Goal Achieved	Ex Ante Gross Energy Savings	GPY1 Energy Savings Goal	% GPY1 Savings Goal Achieved
Boiler Reset Controls	Unit	7	50	14%	6,722	43,350	16%
Hydronic Boilers	Unit	5	35	14%	2,594	36,630	7%
Condensing Boilers	Unit	43	40	108%	37,949	45,425	84%
Infrared Upright Broiler	Unit	1	2	50%	1,089	2,178	50%
Boiler Tune-Up	Unit	109	300	36%	33,521	90,900	37%
Boiler Combined with WH unit	Unit	5	25	20%	1,230	6,150	20%
Energy Star Fryer	Unit	18	10	180%	10,100	5,053	200%
Furnaces 90%-94% Afue	Unit	118	225	52%	23,590	49,050	48%
Furnaces 95%+Afue	Unit	74	225	33%	24,432	53,552	46%
Infrared Heaters (All Sizes)	Unit	80	125	64%	36,080	56,150	64%
Energy Star Convection Oven	Unit	4	5	80%	1,224	1,518	81%
Conveyor Oven	Unit	2	2	100%	1,466	1,466	100%
Indoor Pipe HW/Steam Insulation	Linear foot	4,183	15,030	28%	41,830	78,334	53%
Programmable Thermostat	Unit	222	150	148%	39,516	26,700	148%
Infrared Salamander Broiler	Unit	2	5	40%	478	1,147	42%
Commercial Steam Trap	Unit	558	1,400	40%	49,662	64,400	77%
Steam Trap, Industrial high pressure	Unit	326	63	517%	1,424,072	146,375	973%
Steam Trap, Industrial low pressure	Unit	2	100	2%	1,272	63,481	2%
Pre-Rinse Spray Valve	Unit	33	149	22%	3,894	39,064	10%
Water Heater 88% TE	Unit	7	29	24%	1,757	7,379	24%
Total		5,799	17,970		1,742,478	818,302	213%

Navigant Analysis of Nicor Gas tracking database (10/06/2012 data extract)

Error! Reference source not found. shows the breakdown of the GPY1 ex ante gross savings by ebate measure type. Steam Trap measures were the single most installed measure in GPY1, contributing to about 85% of the total GPY1 ex ante gross savings. The remaining 15% ex ante gross savings were shared among the other measures installed.

Error! Reference source not found. provides details of the contribution of the types of Steam trap measures to the GPY1 gross savings. Industrial High Pressure Steam Traps contributed to about 95% of the total savings from Steam Traps.

Table 5-11. GPY1 Ex Ante Gross Savings by Measure Kind

Rebate Measure Kind	Measures (Rebate Quantity)	Ex Ante Gross Energy Savings	% GPY1 Gross Savings	Planning Net-to-Gross Ratio	Ex Ante Net Energy Savings
Boiler Controls	7	6,722	<1%	0.8	5,378
Boilers	47	39,899	2%	0.8	31,919
Water heaters	8	2,401	<1%	0.8	1,921
Commercial Kitchen	62	18,251	1%	0.8	14,601
Boiler Tune-up	109	33,521	2%	0.8	26,817
Space Heating	85	37,310	2%	0.8	29,848
Furnaces	192	48,022	3%	0.8	38,418
Pipe Insulation	3	41,830	2%	0.96	40,157
Programmable Thermostats	222	39,516	2%	0.8	31,613
Steam Traps	886	1,475,006	85%	0.8	1,180,005
Total	1,621	1,742,478	100%		1,400,675

Source: Navigant analysis of Nicor Gas tracking database (10/06/2012 data)

Table 5-12. GPY1 Ex Ante Gross Savings from Steam Trap Measures

Rebate Measure Kind	Measures (Rebate Quantity)	Ex Ante Gross Energy Savings	% GPY1 Gross Savings	Net-to-Gross Ratio	Ex Ante Net Energy Savings
Steam Trap, Commercial	94	8,366	1%	0.8	6,693
Commercial Replace - Any Pressure	464	41,296	3%	0.8	33,037
Industrial/Process Low Pressure	2	1,272	<1%	0.8	1,018
Steam Trap, Industrial Medium Pressure =30 <75 psig	25	21,350	1%	0.8	17,080
Steam Trap, Industrial High Pressure =75 <125 psig	62	182,342	12%	0.8	145,874
Steam Trap, Industrial High Pressure =125 <175 psig	130	578,370	39%	0.8	462,696
Steam Trap, Industrial High Pressure =175 <250 psig	109	642,010	44%	0.8	513,608
Total	886	1,475,006	100%		1,180,005

Source: Navigant analysis of Nicor Gas tracking database (10/06/2012 data)

Error! Reference source not found. summarizes the distribution of GPY1 participants, projects, and energy savings by business sector. A total of 237 business participants completed 267 projects that accounted for 1,742,478 therms of ex ante gross savings. GPY1 participants represent a range of business sectors. Overall, there were 1.13 projects per business participant with an average of 6,526 therms per project.

Table 5-13. Participants, Projects, and Ex Ante Gross Savings by Business Sector

Business Sector	Projects		Business Participants		Projects/ Part.	Ex Ante Gross Energy Savings		Therms/ Project
	Count	%	Count	%		Therm	%	
Assembly	30	11%	30	13%	1.00	29,513	2%	984
Health/Medical - Hospital	18	7%	17	7%	1.06	10,953	1%	609
Hotel/Hospitality	5	2%	4	2%	1.25	1,474	<1%	295
Manufacturing - Light Industrial	27	10%	18	8%	1.50	945,405	54%	35,015
Multi-Family	13	5%	13	5%	1.00	30,783	2%	2,368
Office < 60,000 Sq. Ft.	22	8%	22	9%	1.00	8,701	<1%	396
Office >= 60,000 Sq Ft	6	2%	6	3%	1.00	4,526	<1%	754
Restaurant - Fast Food	7	3%	7	3%	1.00	8,080	<1%	1,154
Restaurant - Sit Down	3	1%	3	1%	1.00	1,685	<1%	562
Retail	13	5%	13	5%	1.00	5,539	<1%	426
Schools - Post Secondary	4	1%	4	2%	1.00	4,153	<1%	1,038
Schools - Primary/Secondary	1	0%	1	<1%	1.00	6,112	<1%	6,112
Storage	3	1%	3	1%	1.00	3,370	<1%	1,123
Other	115	43%	96	41%	1.20	682,184	39%	5,932
TOTAL	267		237		1.13	1,742,478		6,526

Source: Navigant analysis of Nicor Gas tracking database (10/06/2012 data)

Key observations, by business sector, are:

- The light industry sector accounts for the most energy savings (54%), the highest number of projects per participant (1.50), and the largest therms per project (35,015 therms). This sector also had the third largest share of participants (10%) and two of the five largest prescriptive projects in GPY1.
- The assembly sector accounts for the second largest share of projects (13%) and the second largest share of participants (11%), but contributed only 2% of total GPY1 gross savings.
- Overall impact from the office sector was 10% of projects and 12% of business participation (with 1.0 projects per participant), but less than 2% of the total gross savings.
- Miscellaneous business buildings had the highest number of projects (43%), the third largest number of projects per participant (1.20), and 39% of GPY1 gross savings.
- As mentioned before, the Navigant team identified during the project file reviews that not all of the business/building types recorded in the applications are transferred into the tracking system or are inappropriately designated as “OTR”. The team recommends that RSG tracks the building/business types as found on the project applications.

The evaluation team performed engineering estimates to verify the accuracy of the program estimated default savings from the TRM. We reviewed the underlying algorithms, assumptions, and calculated default savings from the TRM proposed by RSG for GPY1.

As shown in **Error! Reference source not found.**, the evaluation team identified 25 different measure types that were installed by participants. From the results of our engineering review, Navigant concluded that the implementation contractor sufficiently applied the TRM assumptions and algorithms, and that the measure per unit default savings values in the tracking database are reasonable. The realization rates based on measure unit savings were determined to be 1.00.

Table 5-14. Profile of Measures and Unit Savings in Tracking Database

Measure Description	Unit	Tracking Ex Ante Unit Gross Savings (Therms)	Evaluation Verified Unit Gross Savings (Therms)	Verified Gross Realization Rate	Evaluation Comments
Boiler Reset Controls	MBH	1.163	1.163	1	Averaged. Acceptable as is.
Boiler Tune-Up	MBH	0.234	0.234	1	Averaged. Acceptable as is.
Combined HE Boiler & Water Htg. Unit, >=90% AFUE	Boiler	246	246	1	Not in TRM. Used GPY1 value. from Program Operating Plan
Condensing Boilers, 301 To 1700 Mbh, >=90% TE	MBH	1.686	1.686	1	Averaged. Acceptable as is.
Condensing Boilers, Up To 300 Mbh, >=90% AFUE	MBH	2.385	2.385	1	Averaged. Acceptable as is.
Convection Oven, EStar, E>40%	Oven	306	306	1	Averaged. Acceptable as is.
Fryer, EStar E>50%	Fryer	505	505	1	Averaged. Acceptable as is.
Furnaces, Up To 150 Mbh, 90%-94% AFUE	MBH	1.96	1.96	1	Averaged. Acceptable as is.
Furnaces, Up To 150 Mbh, 95%+AFUE	MBH	2.44	2.44	1	Averaged. Acceptable as is.
HE Conveyor Oven Large (>=25-In Conveyor Width)	Oven	733	733	1	Averaged. Acceptable as is.
Pre-Rinse Spray Valve	Sprayer	118	118	1	Averaged. Acceptable as is.
Hydronic Boilers, 1000 To 1700 Mbh, >=85% TE	MBH	0.855	0.855	1	Averaged. Acceptable as is.
Hydronic Boilers, Up To 300 Mbh, >=85% AFUE	MBH	0.855	0.855	1	Averaged. Acceptable as is.
Indoor Pipe HW/Steam Insulation	Linear Foot	10.47	10.47	1	Not in TRM. Used GPY1 value from Program Operating Plan
Industrial/Process Low Pressure Steam Trap	Steam Trap	636	636	1	Averaged. Acceptable as is.
Infrared Heaters (All Sizes), Low Intensity	Infrared Heater	451	451	1	Averaged. Acceptable as is.
Infrared Salamander Broiler	Broiler	239	239	1	Averaged. Acceptable as is.
Infrared Upright Broiler	Broiler	1,089	1,089	1	Averaged. Acceptable as is.
Programmable Thermostat	Thermostat	178	178	1	Averaged. Acceptable as is.

Steam Trap, Commercial	Steam Trap	89	89	1	Averaged. Acceptable as is.
Steam Trap, Industrial High Pressure =125 <175 psig	Steam Trap	4,449	4,449	1	Averaged. Acceptable as is.
Steam Trap, Industrial High Pressure =175 <250 psig	Steam Trap	5,890	5,890	1	Averaged. Acceptable as is.
Steam Trap, Industrial High Pressure =75 <125 psig	Steam Trap	2,941	2,941	1	Averaged. Acceptable as is.
Steam Trap, Industrial Medium Pressure =30 <75 psig	Steam Trap	854	854	1	Averaged. Acceptable as is.
Water Heater (Large), 88% TE	Water Heater	251	251	1	Averaged. Acceptable as is.

Navigant analysis of Nicor Gas tracking database (10/06/2012 data extract)

Error! Reference source not found.and **Error! Reference source not found.** provide the verified gross savings and gross realization rates for each measure type. No adjustments were made to measure savings or quantities of measures installed. Hence the verified gross savings was 1,742,478 therms and the gross realization rate was 1.00.

Table 5-15. Verified Gross Savings by Measure Type (Consolidated)

Savings Measure Description	Measure Unit	Measures (Savings Quantity)	Ex Ante Gross Energy Savings (Therms)	Verified Gross Energy Savings (Therms)	Verified Gross Realization Rate
Boiler Reset Controls	Unit	7	6,722	6,722	1.00
Hydronic Boilers	Unit	5	2,594	2,594	1.00
Condensing Boilers	Unit	43	37,949	37,949	1.00
Infrared Upright Broiler	Unit	1	1,089	1,089	1.00
Boiler Tune-Up	Unit	109	33,521	33,521	1.00
Boiler Combined with Water Heater (WH) unit	Unit	5	1,230	1,230	1.00
Energy Star Fryer	Unit	18	10,100	10,100	1.00
Furnaces 90%-94% AFUE	Unit	118	23,590	23,590	1.00
Furnaces 95%+AFUE	Unit	74	24,432	24,432	1.00
Infrared Heaters (All Sizes)	Unit	80	36,080	36,080	1.00
Energy Star Convection Oven	Unit	4	1,224	1,224	1.00
Conveyor Oven	Unit	2	1,466	1,466	1.00
Indoor Pipe HW/Steam Insulation	Linear foot	4,183	41,830	41,830	1.00
Programmable Thermostat	Unit	222	39,516	39,516	1.00
Infrared Salamander Broiler	Unit	2	478	478	1.00
Commercial Steam Trap	Unit	558	49,662	49,662	1.00
Steam Traps, Industrial high pressure	Unit	326	1,424,072	1,424,072	1.00
Steam Traps, Industrial low pressure	Unit	2	1,272	1,272	1.00
Pre-Rinse Spray Valve	Unit	33	3,894	3,894	1.00
Water Heater 88% TE	Unit	7	1,757	1,757	1.00
Total		5,799	1,742,478	1,742,478	1.00

Navigant analysis

Table 5-16. Gross Parameter and Savings Estimates at the Program Level

Program	Ex Ante Gross Energy Savings (Therms)	Verified Gross Energy Savings (Therms)	Verified Gross Realization Rate
Nicor Gas BEER Program	1,742,478	1,742,478	1.00

Navigant analysis

Navigant used the verified gross energy savings numbers derived from the sampling to estimate the population and the program level verified gross energy savings, and applied that to estimate the program level net energy savings.

5.5.1 Research Report of Non-deemed Estimate of Ex post Net Program-Level Savings

The primary objective of the net savings analysis for the BEER Program was to determine the program's net effect on customers' natural gas usage. After gross program impacts have been assessed, net program impacts are derived by estimating a Net-to-Gross ratio (NTGR) that quantifies the percentage of the gross program impacts that can be reliably attributed to the program.

For GPY1, the net program impacts were quantified to reflect both the estimated level of free-ridership and participant spillover. Quantifying free-ridership requires estimating what would have happened in the absence of the program. For most of the projects, a basic rigor self-report analysis was conducted, as described shortly. The enhanced self-report method was used for the largest project in this program, which accounted for 37% of savings. For this project, a participant telephone interview was conducted. Then, since the customer indicated strong trade ally influence (a score greater than 7), trade ally input on program influence was overlaid on the participant self-report responses.

The existence of participant spillover was quantitatively examined by identifying spillover candidates through questions asked in the participant telephone interviews. If the response provided evidence of participant spillover and the participant was willing to have a follow-up interview by an engineer, an attempt was made to estimate the spillover impacts.

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

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

Free-Ridership Assessment

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

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

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

Additional survey batteries examine other project decision-making influences including the age, and condition of existing equipment, corporate policy for efficiency improvements and open-ended responses.

Participant Spillover

For the GPY1 Nicor Gas BEER Program evaluation, a battery of questions was asked to identify spillover candidates and to encourage spillover candidates to participate in a follow-up interview by an engineer to quantify spillover savings. Below are paraphrased versions of the spillover questions that were asked:

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

If the response to question 2 was given a score of 7 or higher, the team judged the respondent to be a spillover candidate. Unfortunately, due to the low response rate that the Prescriptive participant survey received, Navigant was unable to identify any participants who experienced spillover as a result of their participation in the program. In GPY2, the evaluation team will continue to attempt to identify participants who experienced spillover, and will ask the following additional question during the CATI survey:

“Thank you for sharing this information with us. We may have follow-up questions about the equipment you installed outside of the program. Would you be willing to speak briefly with a member of our team?”

All respondents who answer “yes” indicating that they would be willing to speak with a member of our team would be contacted by an engineer. The follow-up engineering interview attempts to confirm that spillover had occurred and estimate the energy savings.

The evaluation team also conducted in-depth interviews with five participating trade allies, and questioned them on any market effects that they may have witnessed in their unique position in the market as a result of the program.

Of the five trade allies, three indicated that the program was very influential in driving their customer base to implement other energy efficiency measures, suggesting potential non-participant spillover. Additional equipment installed included humidifiers, air conditioners (after furnaces were installed), and burners. Of the trade allies, three indicated that the majority of their customers did not apply for an incentive. One trade ally indicated that their customer base was not aware of the program, with another trade ally indicating that time constraints, and not being approved within those constraints, is the core reason why their customers did not apply for a rebate. This potential non-participant spillover will be researched further in PY2.

NTG Scoring

The net-to-gross scoring approach is summarized in **Error! Reference source not found..**

Table 5-17. Net-to-Gross Scoring Algorithm for the GPY1 Prescriptive Program

Scoring Element	Calculation
<p>Timing and Selection 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:</p> <p>A. Availability of the program incentive B. Recommendation from utility program staff person C. Information from utility or program marketing materials D. Endorsement or recommendation by utility account manager E. Other factors (recorded verbatim) F. Information provided through technical assistance received from utility or Resource Solution Group (RSG) field staff G. Vendor Score (when triggered) H. Account Manager Score (when triggered)</p>	<p>Basic Rigor: Maximum of A, B, C, D, and E Standard Rigor: Maximum of A, B, C, D, E, F, G, and H</p>
<p>Program Influence score. “If you were given a TOTAL of 100 points that reflect the importance in your decision to implement the <ENDUSE>, and you had to divide those 100 points between: 1) the program and 2) other factors, how many points would you give to the importance of the PROGRAM?”</p>	<p>Points awarded to the program (divided by 10). Divide by 2 if the customer learned about the program AFTER deciding to implement the measure that was installed</p>
<p>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 installed exactly the same equipment?” The NTG algorithm computes the Likelihood Score as 10 minus the respondent’s answer (e.g., the likelihood score will be 0 if extremely likely to install exactly the same equipment if the program had not been available).</p> <p>Adjustments to “Likelihood score” are made for timing: “Without the program, when do you think you would have installed this equipment?” Free-ridership diminishes as the timing of the installation without the program moves further into the future.</p>	<p>Interpolate between Likelihood Score and 10 to obtain the No-Program score, where If “At the same time” or within 6 months then the No Program score equals the Likelihood Score, and if 48 months later then the No Program Score equals 10 (no free-ridership)</p>
<p>Project-level Free-ridership (ranges from 0.00 to 1.00)</p>	<p>1 – Sum of scores (Timing & Selection, Program Influence, No-Program)/30</p>
<p>“Our records show that <COMPANY> also received an incentive from <UTILITY> for a <different end use> project at <same ADDRESS>. Was the decision making process for the <different end use> project the same as for the <ENDUSE> project we have been talking about?”</p>	<p>If participant responds “same decision,” assign free-ridership score to other end-uses of the same project</p>
<p>“Our records show that <COMPANY> also received an incentive from <UTILITY> for <number> other <ENDUSE> project(s). Was it a single decision to complete all of those <ENDUSE> projects for which you received an incentive from <UTILITY> or did each project go through its own decision process?”</p>	<p>If participant responds “single decision,” assign free-ridership score to same end-use of the additional projects (projects with separate project ID’s)</p>
<p>GPY1 Project level Net-to-Gross Ratio (free-ridership only)</p>	<p>1 – Project level Free-ridership</p>

As stated previously, Navigant used the enhanced self-report method to estimate the NTGR for the largest project. The calculation of the related vendor score is discussed in the following section.

The Vendor Score is the maximum (on a scale of 0 to 10) of the following four factors:

1. [Score= response, on scale of 0 to 10] On a scale of 0 to 10 where 0 is NOT AT ALL IMPORTANT and 10 is EXTREMELY IMPORTANT, how important was the

PROGRAM, including incentives as well as program services and information, in influencing your decision to recommend that <%CUSTOMER> install the energy efficiency MEASURE at this time?

2. [Score= 10 minus the response, on a scale from 0 to 10] And using a 0 to 10 likelihood scale where 0 is NOT AT ALL LIKELY and 10 is EXTREMELY LIKELY, if the PROGRAM, including incentives as well as program services and information, had not been available, what is the likelihood that you would have recommended this specific MEASURE to <%CUSTOMER>?
3. [Score = %NOW minus %BEFORE, converting delta percent to a scale of 0 to 10] How important, would you say, has the program been on how frequently you recommend high efficiency equipment to your commercial and industrial customers?
 - a) Approximately, in what percent of sales situations did you recommend this MEASURE before you learned about the PROGRAM
 - b) And approximately in what percent of sales situations do you recommend this MEASURE now that you have worked with the PROGRAM?
4. [Score = response converted to a 0 to 10 scale] What are the most important reasons that you recommend high efficiency equipment more often now? How important is the Nicor Gas BEER program in this change? (*Probe for specific program components: incentives, training, program website, vendor past participation in utility rebate program, other program components.*)

The algorithm above provides a Vendor Score on a scale of 0 to 10, where 10 is associated is with no free-ridership due to program influence on the vendor. The Vendor Score is then factored into the Timing and Selection Score of the net-to-gross ratio (NTGR) estimation.

The NTG ratio and relative precision at a 90% confidence level for the overall program and the net program savings estimates are provided in **Error! Reference source not found.** and **Error! Reference source not found.**

Table 5-18. NTG Ratio and Relative Precision at 90% Confidence Level

Project Population (N=267)	NTG Interviews (n=34)	NTG Sample* (n=39)	Relative Precision (± %)	Low	Mean	High
267	34	39	9%	0.67	0.73	0.80

Source: Navigant analysis

* - includes multiple projects

Table 5-19. GPY1 Program Gross and Net Energy Savings Estimates

Program	Ex Ante Gross Energy Savings (Therms)	Verified Gross Energy Savings (Therms)	Verified Gross Realization Rate	Verified Net Energy Savings (Therms)	Verified Net-to-Gross Ratio
Total	1,742,478	1,742,478	1.00	1,272,009	0.73

Source: Navigant analysis

5.6 Detailed process results

The process evaluation of the BEER Program focused on answering the following research questions:

1. Has the program been successful in recruiting additional participants?
2. Has the program been successful in recruiting additional trade allies?
3. How has the program changed its marketing and outreach strategies since Rider 29?
4. Are customers satisfied with the program? In what ways can the program improve the customer experience?
5. Are trade allies satisfied with the program? In what ways can the program improve the trade ally experience?
6. Is the program successfully referring customers to the other Business programs? Can program coordination be improved?

The process evaluation results are organized by the process research questions. The primary data sources for the process evaluation included the telephone survey with 34 survey participants and in-depth interviews with market actors and implementation staff. The surveys were conducted October through December, 2012.

5.6.1 Has the program been successful in recruiting additional participants?

Finding

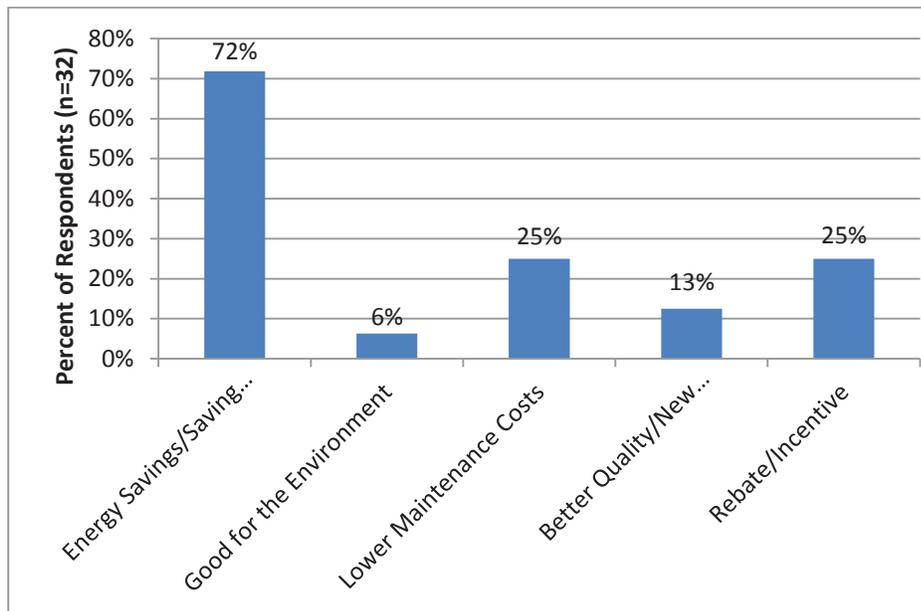
In terms of project or measure participation, it does not appear the program in Rider 30 GPY1 period achieved significant progress in recruiting additional participants, when compared to the Rider 29. Under Rider 30 in GPY1, 237 customers participated and implemented 1621 measures, compared to 333 customers who implemented 1679 measures in the Rider 29 pilot program²¹. On the other hand, the program achieved or exceeded its planned gross savings goal in the Rider 30 GPY1 period compared to the Rider 29 (partly due to introduction of new measures and provision of incentives for the measure mix, including steam traps and commercial kitchen measures). On this basis, Navigant concludes that the program made successful modifications to achieve the savings goals without increasing participation.

Although, customers were not contacted directly during the Rider 29, information gathered from the program staff during the Rider 30 GPY1 participant survey appears to shed light on the characteristics of participants of the BEER Program. Responses from the participant survey demonstrate strong customer satisfaction and willingness to participate in the BEER Program. Of the 34 respondents to the survey, 65% mentioned being influenced by a third party to identify and implement the projects, and 31% said they decided on their own to implement the projects. When asked if they will participate again in the future, 91% reported they were planning or it is possible they will participate again in the future.

Program participants were asked about what they perceive to be the main benefits of participation in the program, and the top three responses were energy savings (72% of respondents), the program rebate (25% of respondents) and lower maintenance cost (25% of respondents). Also mentioned was the ability to install new and/or better equipment (13% of respondents). illustrates customer responses of the main benefits to participating in the BEER Program.

²¹ Copy of Rider 29 Portfolio Summary Spreadsheet v3 (FINAL 9-23-11).xlsx (The 333 customers in Rider 29 included 75 customers from the Rockford Small Business pilot program, who installed 323 measures).

Figure 5.2 Primary Benefit of Program Participation



Source: Participant survey

When asked about the drawbacks to participating in the program, 75% of participants reported they did not perceive any drawbacks, 6% respondents said program paperwork was too burdensome, and another 6% mentioned cost of equipment as the draw back to the program. No customer mentioned issues with program incentives as a drawback to the program. When customers were asked whether the scope of their project was limited by the program’s incentive cap, 91% responded “No”.

Recommendation

- Continue to work on minimizing incomplete applications and denials rate to improve on program participation.
- Establish a mechanism that will optimize the application verification process for past customers.

5.6.2 How has the program changed its marketing and outreach strategies since Rider 29? Has the program been successful in recruiting additional trade allies?

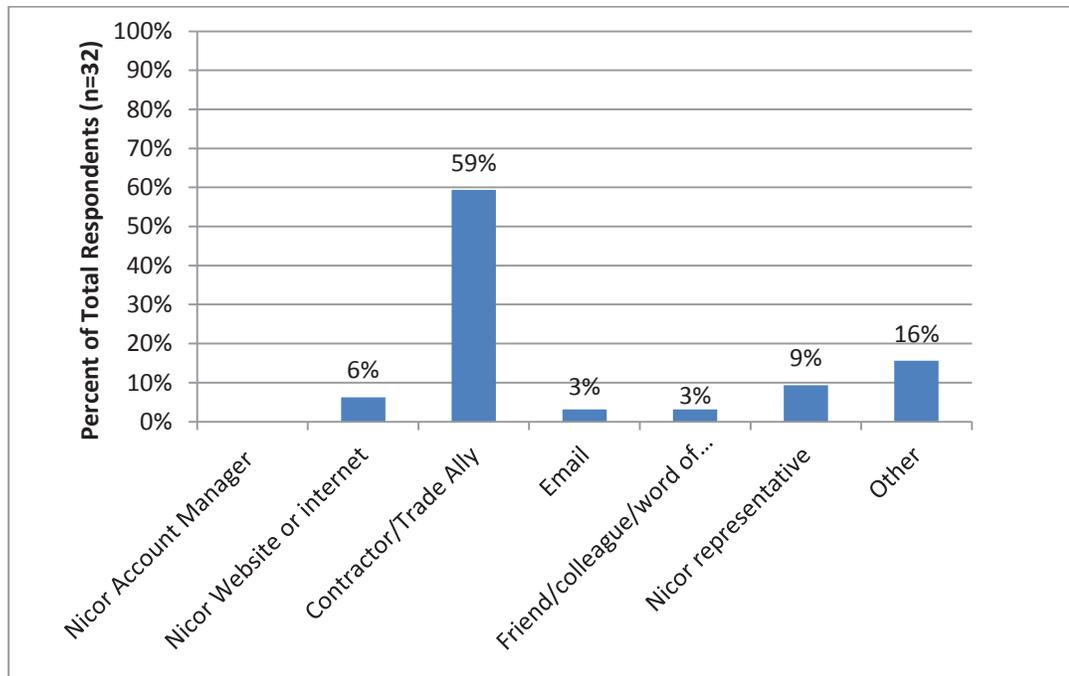
Finding

Navigant found that significant efforts have been made to improve on the program marketing and outreach activities since the beginning of Rider 30. Notable among them is the continued recruitment of trade allies and organizing trade ally meetings and training, the introduction of the “big check event”, and the “E-blast” announcement for promoting newly introduced C&I prescriptive measures. Although, customers were not contacted directly during the Rider 29 cycle, information gathered from the program staff and from the current Rider 30 GPY1 participant telephone survey provides a strong indication that the contractor/trade ally channel is being well utilized by the program, followed by the Nicor Gas website and through emails.

From the 34 respondents of the GPY1 participant survey, most participants learn about the BEEER Program through a discussion with a contractor or a trade ally (59%), Nicor Gas website or internet (6%), e-mails (3%), through a colleague, friend, or family member (3%). Other methods included Nicor Gas representative (9%), by an engineer (6%), meeting, seminar, or workshop (3%), or Nicor Gas mail-out (3%). illustrates these findings in detail.

When comparing the ways that customers reported wanting to learn about the program, the most popular method was through trade allies (72%), then Nicor Gas website (38%) e-mails (25%), newsletters (25%), and from colleague, friend, or family member (22%). Only 13% of customers indicated they preferred to learn about the program from Nicor Gas Account Managers.

Figure 5.3 Method of Initial Introduction to Program



Source: Participant Survey

Participants were also asked how useful program marketing materials are in providing information about the program. Only 16% of participants felt the materials are very useful, and additional 25% indicated the material was somewhat useful. Some respondents did report that they did not recall receiving any marketing materials. When asked about the best ways to reach companies regarding energy efficiency opportunities, the most cited method was e-mail, with 31% of respondents suggesting it as the method, followed by bill inserts (28%), and trade allies (19%), while 6% indicated contact from Nicor Gas Account Managers.

During Rider 29, there were 1,000 registered trade allies. The IC did a commendable job in recruiting trade allies to the program, increase the total registered trade allies to 4,169.

Sixty-nine (69%) of survey respondents used a contractor for their project, 36% reported that they did not know if their contractor was a program-qualified trade ally. Only 41% of the survey respondents reported that they did use a program-qualified trade ally. This suggests that the trade allies may not be promoting their status as program-qualified trade allies to the fullest extent possible. When asked to rate how important it is that their contractor is a program trade ally, on a scale from zero to ten, where zero is “not at all important” and ten is “very important”, 22% of respondents reported a rating from 7 to 10. Additional 28% gave a rating from 5 to 6.

Recommendation

- The program should continue to improve on dissemination of marketing and outreach materials to increase program awareness through emails, bill inserts and newsletters.
- The program should continue to recruit trade ally involvement and encourage trade allies to market the program to their customer base.

Finding

More than two-third (69%) of the survey respondents reported that they themselves filled out the program application. Of those, over 90% reported that the application clearly explained the program requirements and how to participate. When asked to rate the application process on a scale from zero to ten, where zero is “very difficult” and ten is “very easy”, 86% of respondents gave a score from 7 to 10. This high favorable response rate justifies customer position when many answered that application paperwork is not burdensome or a drawback to program participation.

Slightly over 22% of the survey respondents recalled placing telephone calls to the BEER Program Call Center, and 75% indicated they did not contact the Call Center. Of those who did, they all reported very high levels of satisfaction with the Program Call Center. On a scale of zero to ten, where zero is “not at all satisfied” and ten is “very satisfied”, 100% of respondents gave 7 to 10 rating on their satisfaction of contacting the program Call Center.

Recommendation

- Customers have shown the program application process is not a drawback to their participation, however evidence from the program tracking system shows incomplete application and denials are major challenges to the program implementation. The program administration and implementation strategy should continue to improve on eliminating the bottlenecks, review the eligibility requirements and denial codes. These will be major factors to increase program participation in GPY2 and beyond.

5.6.3 Are customers satisfied with the program? In what ways can the program improve the customer experience?

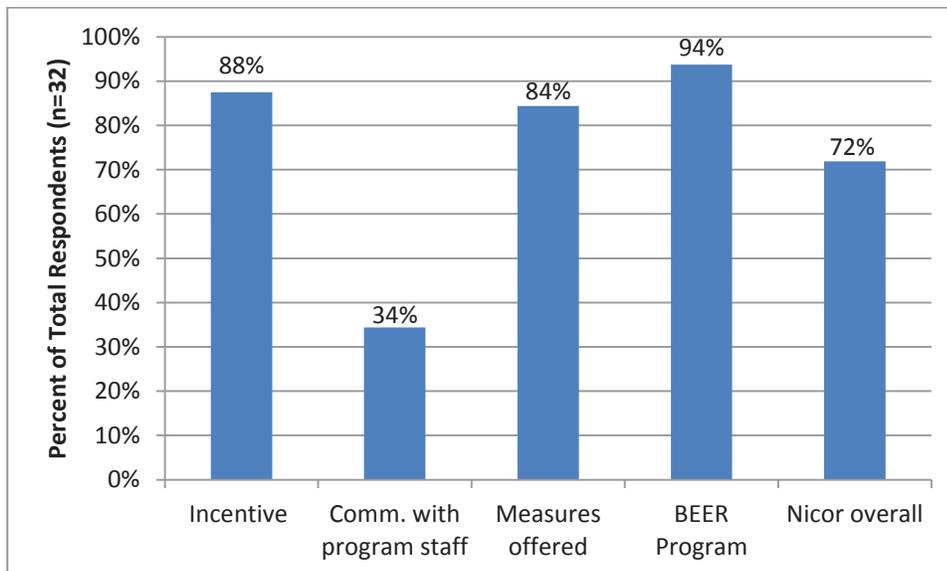
Finding

As part of the participant survey, the evaluation team spoke with customers about their satisfaction with the BEER Program. Satisfaction data was collected using a 0 to 10 point scale and recoded into the three analysis categories: dissatisfied (0-3), neutral (4-6) and satisfied (7-10). With this approach the evaluation team sought to address the key evaluation question on customer satisfactions and ways to improve on the customer experience.

Overall, participating customers appear to be very satisfied with the BEER Program; 94% of the customers surveyed reported being satisfied with the program overall. Most customers (88%) reported being satisfied with the incentive amount; while 84% reported being satisfied with the incentivized measures/equipment offered by the program. When asked to rate their satisfaction with communications with the program staff, only 34% reported being satisfied BEER Program (although participants had indicated strong satisfaction with contact with the program Call Center), and the majority indicated the question was not applicable or refused to respond. Customer satisfaction with the program attributes is reported in .

When asked if they plan to participate in the BEER Program again in the future, a majority (63%) of participants responded in the affirmative, and additional 28% indicated they may participate again in the future. Although some (44%) participants could offer no recommendations for improving the program, of those who did, more than a quarter (29%) called for higher incentives for program measures, and another 29% called for greater publicity, better communication and improvement in program information. Also, 21% of respondents suggested simplifying the application process; one customer mentioned that the program should accept other means of documentation when serial numbers and startup dates are not available; and another customer mentioned the program should minimize the duration of revising the application process for past customers.

Figure 5.4 Satisfaction with Program Attributes



Source: Participant survey

Recommendation

- Customers have shown the program application process is not a drawback to their participation, however evidence from the program tracking system shows incomplete application and denials are major challenges to the program implementation. The program administration and implementation strategy should continue to improve on eliminating the bottlenecks, review the eligibility requirements and denial codes. These will be major factors to increase program participation in GPY2 and beyond.

3.2.2 Is the program successfully referring customers to the other Business programs? Can program coordination be improved?

Finding

From program staff interviews and program documentation, Navigant established that customer referrals are happening between the BEER Program and the Small Business and Custom Programs. However, the evaluation team could not establish how many projects were referred during the GPY1 period as there is inadequate information or a database of the referral projects. There also appears to be a lack of coordination between utility programs to streamline the referral process.

Recommendation

- The BEER Program through coordination with other Business programs should create a central database system where referral projects are stored and can be accessed by respective program implementation contractors.

5.6.4 Trade Ally Survey Results

This section summarizes the results from the telephone survey conducted with five trade allies who participated in the BEER Program. The five trade allies were taken from the population size of 130 participating members, all of whom were contacted. A total of 65 calls were made in order to achieve five completed surveys, and one partially completed survey. The surveys were conducted October through December, 2012.

The trade ally survey component of the Business Rebate evaluation focused on:

- Program Marketing and Outreach Effectiveness
- Program Characteristics and Barriers to Participation
- Administration and delivery
- Participant satisfaction

The evaluation results are organized by the same process research questions that are grouped by the above themes. The primary data sources include the telephone survey with five trade allies.

Program Marketing and Outreach Effectiveness

Trade ally participants were asked a series of questions regarding program-specific marketing and marketing effectiveness. Four of the five trade allies were aware of other rebate programs; however none actively referred or marketed this, or other, incentive programs. Typically, these trade allies would refer their customers to utility websites only when an enquiry regarding incentive programs are made. Significantly, one trade ally viewed the Utility as an *'an Ally, rather than an adversary, like other utilities'* and referred to the Utility's seminars, programs, and marketing material in an extremely positive frame. Supporting this response, another trade ally found the online material was sufficient, and the only difficulty was verifying the customers' equipment eligibility.

Three participating trade allies have been aware of the program over the last two years, while another learned of the Program through their utility bill. Of the five trade allies, four indicated that the level of marketing material was sufficient, with the remaining participant indicating that they *'could promote it more'*. When probed further, the trade ally was unable to provide a clear strategy as to how to reach the right audience. Two trade allies indicated that the utility should take a larger role in the delivery and promotion of the program, due to contractor time constraints.

Program Characteristics and Barriers to Participation

Trade allies expressed varying responses to the program's characteristics and determined how it could overcome barriers to participation. One trade ally viewed the program as a sales tool for contractors, and did not fully understand why the program was offered. This response indicates that the contractor was unclear about the incentive program's purpose, and therefore, it is possible that the objectives of the utility, and its program, are not being passed on to the Contractor's customers.

One trade ally thought that all incentive programs – Nicor Gas programs and other utilities' – should be administered through a not-for-profit organization to minimize the confusion and provide a more effective platform to disseminate information of all rebate programs to customers.

All trade allies have used the website to find program information. One trade ally found the website not very useful, based on their earlier response regarding air conditioner eligibility that is only reserved for simultaneous installations.

Administration and Delivery

All five participants market the program to their customers; two do so actively, while three do not drive the program as the key plank in their selling. All trade allies incorporate the program into their proposals or into their sales proposal, but all unanimously agreed that the Program was not the core reason why their customers used their services.

All trade ally participants indicated that the current timeframe to schedule an installation was also sufficient, albeit highly variable and dependent on participants and manufacturers. Two trade allies indicated that in the past, and with other utilities, it has taken 8-12 weeks, which is largely seen as unsuitable.

Two trade ally participants indicated that they were offered training by the utility, with one finding it very useful. When probed further, the same trade ally indicated that another training session would be beneficial only if the program is modified significantly.

Participant Satisfaction

All five trade allies were satisfied with the program and its role in their businesses. Some participants indicated that the program has become an asset to their sales pitch and in one instance increased their business.

Although they are generally satisfied with the program, three trade allies indicated that there are certain aspects that could be addressed. One trade ally preferred when the Utility showed an estimate of the program's overall funds available on their website. The trade ally that provided a partial survey discussed their working relationship with Nicor Gas as very positive, and how much they prefer to work with Nicor Gas than competing utilities. From the paperwork, to staff accessibility, and the open dialogues, this trade ally is very satisfied working with Nicor Gas.

All trade allies have found that their customers are very satisfied with the program. One trade ally indicated that they are finding it increasingly confusing to navigate programs, not with Nicor Gas specifically, but with all the available rebate programs. As a result, they feel they cannot provide their customers with rebate program information that is specific to that customer and types of equipment they could qualify for. One trade ally concluded that Nicor Gas took more pride and ownership in their incentive programs, and as a result, their relationship reflected better in their service and the influence they had with their customer.

Trade allies also unanimously agreed that the program has given them an increased level of customer service without compromising services in other areas of their business. Very significantly, two trade allies indicated that their sales have increased within the past two years and are attributed to the program. Although small, 5% and 15% respectively, this finding indicates that the Program has helped these businesses develop through difficult economic times. All trade allies plan on participating in the program next year.

5.7 TRM Recommendations

- No adjustment is provided at this time for the TRM default measure savings and the application in GPY1.

- About 85% of GPY1 gross and net savings came from application and installation of steam trap measures. Industrial high pressure steam traps contributed to about 95% of the total savings from steam traps (and about 82% of total GPY1 net savings). The Navigant team is planning to conduct more research on the types and specifications of steam traps installed by customers in the Nicor Gas territory. This research is expected to include secondary research and, if feasible and cost-effective, lab testing. Findings from the research will provide recommendations which could be applied to the statewide TRM.

5.8 Data Collection Instruments

5.8.1 Participant Survey

Nicor Gas Business Energy Efficiency Rebate Program

PARTICIPANT SURVEY – COMMERCIAL & INDUSTRIAL (C&I) PRESCRIPTIVE REBATES

DRAFT August 23, 2012

Section	Topics	Questions
Screening		A0-A3c
Market Influencers	Who informed and influenced the incentive/rebate and incentive process and timing	MM1-MM3
Measure Loop	What were the steps in the incentive/installation process?	MS1-MS4
Free-ridership	Would business customers have installed the equipment without the program?	N00-N27
Spillover	About what percentage of customers have installed additional energy efficient equipment without an incentive?	SP1-SP5
Satisfaction	To what extent was the program satisfactory for the participant?	S0-S12
Marketing and Outreach	How well did the program marketing and outreach influence the participant?	MK0-MK2
Benefits and Barriers	What did the participant perceive to be the benefits and barriers to the program?	B1a-B3
Feedback and Recommendations	What feedback and recommendations do the participants offer?	R1-R2
Firmographics	Firm-specific data for characterization	F1-F7

INTRODUCTION

[READ IF CONTACT=1]

Hello, this is _____ from _____ calling on behalf of Nicor Gas, your natural gas utility. This is not a sales call. May I please speak with <PROGRAM CONTACT>?

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

This survey will take about 30 minutes. Is now a good time? [If no, schedule call-back]

[READ IF CONTACT=0]

Hello, this is _____ from _____ calling on behalf of Nicor Gas. I would like to speak with the person most knowledgeable about recent changes in energy-related gas equipment for your firm at this location.

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

This survey will take about 30 minutes. Is now a good time? [If no, schedule call-back]

SCREENING QUESTIONS

A0 Which of the following statements best characterizes your relation to <COMPANY>?

1. I am an employee of <COMPANY> (THIS CATEGORY SHOULD INCLUDE THE OWNER/PRESIDENT/PARTNER ETC. OF THE COMPANY.)
2. My company provides energy-related services to <COMPANY>
3. I am a contractor and was involved in the installation of energy efficient equipment for this project
00. (Other, specify) (PUT OWNER/PRESIDENT/PARTNER ETC. OF THE COMPANY IN 1)
88. (Don't know)
99. (Refused)

[READ if S1<1] This survey asks questions about the energy efficiency upgrades for which <COMPANY> received an incentive at <ADDRESS>. Please answer the questions from the perspective of <COMPANY>. For example, when I refer to "YOUR COMPANY", I am referring to <COMPANY>. If you are not familiar with certain aspects of the project, please just say so and I will skip to the next question.

- A1. Just to confirm, between June 1, 2011 and May 31, 2012 did <COMPANY> participate in the Nicor Gas C&I Prescriptive Rebate Program at <ADDRESS>? (IF NEEDED: This is a program where your business received an incentive for installing one or more energy-efficient products.)
- 1 (Yes, participated as described)
 - 2 (Yes, participated but at another location)
 - 3 (NO, did NOT participate in program)
 - 00 (Other, specify)
 - 88 (Don't know)
 - 99 (Refused)

[SKIP A2 IF A1=1,2]

- A2. Is it possible that someone else dealt with the energy-efficient product installation?
- 1 (Yes, someone else dealt with it)
 - 2 (No)
 - 00 (Other, specify)
 - 88 (Don't know)
 - 99 (Refused)

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

[IF A1=2,3,00,88,99: Thank and terminate. Record dispo as "Could not confirm participation".]

Before we begin, I want to emphasize that this survey will only be about the energy efficient <END USE> you installed through the C&I Prescriptive Rebate Program at <ADDRESS>.

- A3. I'd like to confirm some information in the Nicor Gas database. Our records show that you implemented the following <ENDUSE> measures through the C&I Prescriptive Rebate Program. Is this correct?

[ASK A3a IF MEASD1 <> BLANK]

- A3a <MEASD1>
- 1 (Yes)
 - 3 (No, did not install)
 - 88 (Don't know)
 - 99 (Refused)

[ASK A3b IF MEASD2 <> BLANK]

- A3b <MEASD2>
- 1 (Yes)
 - 3 (No, did not install)
 - 88 (Don't know)
 - 99 (Refused)

[ASK A3c IF MEASD3 <> BLANK]

A3c <MEASD3>

- 1 (Yes)
- 3 (No, did not install)
- 88 (Don't know)
- 99 (Refused)

IF A3A=3,8,9 AND A3B=3,8,9 AND A3C=3,8,9: Thank and Terminate, Record Dispo as "Could Not Confirm Measures"

IF QA3A=1 OR 2 THEN MEAS1=1, IF QA3B=1 OR 2 THEN MEAS2=1, IF QA3C=1 OR 2 THEN MEAS3=1

MEASURE MODULE

MM1 Who was the most influential in identifying and recommending that you install the <ENDUSE> project you completed through the C&I Prescriptive Rebate Program?

- 1. (me/respondent)
- 2. (contractor)
- 3. (engineer)
- 4. (architect)
- 5. (manufacturer)
- 6. (distributor)
- 7. (Owner)
- 9. (Nicor Gas Representative/Program Staff)
- 10. (RSG Staff)
- 00. (Other, specify)
- 88. (Don't know)
- 99. (Refused)

MM2 And who informed you about the availability of an incentive through the Nicor Gas C&I Prescriptive Rebate Program?

- 1. (me/respondent "I contacted my utility as a matter of business to ask about their programs")
- 2. (contractor)
- 3. (engineer)
- 4. (architect)
- 5. (manufacturer)
- 6. (distributor)
- 7. (Nicor Gas Account Manager)
- 8. (owner/developer)
- 9. (project manager)
- 11. (Nicor Gas Representative/Program Staff)
- 12. (RSG Staff)
- 00. (Other, specify)
- 88. (Don't know)

99. (Refused)

MM3 When did you implement this project (IF NECESSARY, PROBE FOR BEST GUESS)

- a Month [Precodes for Jan through Dec.]
- b Year [Precodes for 2011 and 2012]

Measure Loop

[Loop 1: ASK IF MEAS1=1. Loop 2: ASK IF MEAS2=1. Loop 3: ASK IF MEAS3=1.]

[For Loop 2, replace “1” at the end of read-ins with “2”; for Loop 3, replace “1” with “3”.]

The following questions are about the <MEASD1> installed through the C&I Prescriptive Rebate Program.

[IF MEASD1= BOILER TUNE-UP OR INDUSTRIAL BURNER TUNE-UP, ASK NL4 AND NL5]

NL4 Prior to receiving this tune-up on your heating system through this program, when did you last tune up your heating equipment?

- 1. Within the past three years
- 2. More than three years ago
- 3. Never had a tune-up
- 00. Not applicable
- 88. Don’t know
- 99. Refused

NL5 Prior to receiving a boiler tune-up through this program, did <COMPANY> have a maintenance contract for the heating system equipment?

- 1. Yes
- 2. No
- 88. Don’t know
- 99. Refused

[IF MEASD1= BOILER TUNE-UP OR INDUSTRIAL BURNER TUNE-UP, SKIP TO NEXT MEASURE]

REMOVED EQUIPMENT

MS1 Did the <MEASD1> you installed through the C&I Prescriptive Rebate Program replace old or outdated equipment at this facility, or was it an addition of new equipment?

- 1 (Addition of new equipment - did not replace anything)
- 2 (Replacement of old or outdated equipment)
- 00 (Other, specify)
- 88 (Don't know)
- 99 (Refused)

[IF MEASD1=PROGRAMMABLE THERMOSTAT, ASK NL11 AND NL12]

NL11 After installing the <MEASD1> device, have you or a contractor programmed the temperature settings?

- 1 (Yes)
- 2 (No)
- 88 (Don't know)
- 99 (Refused)

[IF NL11=1, ASK NL12]

NL12 Has the <MEASD1> been programmed to maintain a different temperature during unoccupied periods than occupied periods?

- 1 (Yes)
- 2 (No) [End of Measure Loop; GO TO NEXT MEASURE]
- 88 (Don't know) [End of Measure Loop; GO TO NEXT MEASURE]
- 99 (Refused) [End of Measure Loop; GO TO NEXT MEASURE]

NL13 Is the current programmed temperature the originally programmed temperature or has the programmed temperature been changed since installation?

- 1 Original temperature [End of Measure Loop; GO TO NEXT MEASURE]
- 2 New temperature
- 88 Don't know [End of Measure Loop; GO TO NEXT MEASURE]
- 99 Refused [End of Measure Loop; GO TO NEXT MEASURE]

NL14 What was the originally programmed temperature and what is the new programmed temperature?

[ASK AS GRID]

<u>Original</u>	<u>New</u>
[RECORD NUMERIC RESPONSE]	[RECORD NUMERIC RESPONSE]
Don't know	Don't know
Refused	Refused

NL14 What was the reason for this the change in programmed temperature?

- 1 [RECORD OPEN-END RESPONSE]
- 88 (Don't know)
- 99 (Refused)

[IF MEASD1=GUEST ROOM ENERGY MANAGEMENT OR MEASD1=PROGRAMMABLE THERMOSTAT SKIP TO NEXT MEASURE]

[End of Measure Loop; GO TO NEXT MEASURE] ELSE

[ASK NET-TO-GROSS MODULE, THEN RETURN]

NET-TO-GROSS MODULE

Variables for the net-to-gross module:

<NTG> (B=Basic rigor level, S= Standard rigor level. All questions here are asked if the standard rigor level is designated. Basic rigor level is designated through skip patterns)
Nicor Gas

<PROGRAM> (Name of energy efficiency program)

<ENDUSE> (Type of measure installed; from program tracking dataset)

<VEND1> (Contractor who installed new equipment, from program tracking dataset)

<TECH_ASSIST> (If participant conducted Feasibility Study, Audit, or received Technical Assistance through the program; from program tracking database)

<OTHERPTS> (Variable to be calculated based on responses. Equals 1- minus response to N3p.)

<FINCRIT1> (Variable to be calculated based on responses. Equals 1 if payback period WITHOUT incentive is shorter than company requirement. See instructions below.)

<FINCRIT2> (Variable to be calculated based on responses. Equals 1 if payback period WITH incentive is shorter than company requirement. See instructions below.)

<MSAME> (Equals 1 if same customer had more than one project of the same end-use type; from program tracking database)

<NSAME> (Number of additional projects of the same end-use type implemented by the same customer; from program tracking database)

<FSAME> (Equals 1 if same customer also had a measure of a different end-use type at the same facility; from program tracking database)

<FDESC> (Type of end-use of a different measure type at the same facility; from program tracking database)

<ACCT_REP> (Name of utility account manager, from program tracking database or program files if present)

<BONUS> (Equals 1 if any Prescriptive lighting measure in the overall project received an incentive bonus from the June 1, 2011 to March 31, 2012 offer)

I'd now like to ask a few questions about the <ENDUSE> you installed through the program.

N00 In deciding to do a project of this type, there are usually a number of reasons that it may be undertaken. In your own words, can you tell me the reasons that you decided to implement this project? Were there any other reasons?

DO NOT READ

- 1 To replace old or outdated equipment
- 2 As part of a planned remodeling, build-out, or expansion
- 3 To gain more control over how the equipment was used
- 4 The maintenance downtime and associated expenses for the old equipment were too high
- 5 Had process problems and were seeking a solution
- 6 To improve equipment performance
- 7 To improve the product quality
- 8 To comply with codes set by regulatory agencies
- 9 To comply with company policies regarding regular/normal maintenance/replacement policy
- 10 To get a rebate from the program

- 11 To protect the environment
- 12 To reduce energy costs
- 13 To reduce energy use/power outages
- 14 To update to the latest technology
- 00 Other (RECORD VERBATIM)
- 88 (Don't know)
- 99 (Refused)

N1 Does your company have an annual capital budget?

- 1 Yes
- 2 No (Skip to N1b)
- 88 (Don't know) (Skip to N1b)
- 99 (Refused) (Skip to N1b)

N1a Was the measure already part of that capital budget before you were aware of the Business Energy Efficiency Rebate Program? (NOTE TO INTERVIEWER: "this measure" refers to the specific energy efficient equipment installed through the program.)

- 1 (Before)
- 2 (After)
- 88 (Don't know)
- 99 (Refused)

N1b Did you learn of the Business Energy Efficiency Rebate Program before or after you began to THINK about the implementation of this measure?

- 1 (Before) (Skip to N3)
- 2 (After)
- 88 (Don't know)
- 99 (Refused)

[ASK N1b IF N1a or N1b=2, 8, 9]

N2 Did you learn about the Nicor Gas Program BEFORE or AFTER you DECIDED to implement the measure that was installed? (NOTE TO INTERVIEWER: "the measure" refers to the specific energy efficient equipment installed through the program.)

- 1 (Before)
- 2 (After)
- 88 (Don't know)
- 99 (Refused)

N3 Next, I'm going to ask you to rate the importance of the program as well as other factors that might have influenced your decision to implement this measure. Think of the degree of importance as being shown on a scale with equally spaced units from 0 to 10, where 0 means not at all important and 10 means extremely important. Now using this scale please rate the importance of each of the following in your decision to implement the measure at this time. [FOR N3a-n, RECORD 0 to 10; 96=Not Applicable; 88=Don't Know; 99=Refused]

(If needed: How important in your DECISION to implement the project was...)

[SKIP N3a IF NTG=B]

N3a. The age or condition of the old equipment

N3b. Availability of the PROGRAM incentive

[ASK IF N3b=8, 9, 10]

N3bb. What were the reasons that you gave it this rating?[OPEN END; 88=Don't know; 99=Refused]

[SKIP TO N3f IF NTG=B]

[ASK IF <TECH_ASSIST>=1, ELSE SKIP TO N3d]

N3c. Information provided through the technical assistance you received from Nicor Gas or RSG Energy field staff

[SKIP N3cc IF NTG=B]

[ASK IF N3c=8, 9, 10]

N3cc. What were the reasons that you gave it this rating?[OPEN END; 88=Don't know; 99=Refused]

N3d. Recommendation from an equipment vendor or contractor that helped you with the choice of the equipment

N3e. Previous experience with this type of equipment

N3f. Recommendation from a Nicor Gas program staff or RSG representative

[SKIP N3ff IF NTG=B]

[ASK N3ff IF N3f=8, 9, 10]

N3ff. Why do you give it this rating?

N3h. Information from C&I Prescriptive Rebate Program or Nicor Gas marketing materials

[SKIP N3hh IF NTG=B]

[ASK IF N3h=8, 9, 10]

N3hh. Why do you give it this rating?

[SKIP TO N3k IF NTG=B]

N3i. A recommendation from a design or consulting engineer

N3j. Standard practice in your business/industry

N3k. Endorsement or recommendation by a Nicor Gas account manager

[SKIP N3kk IF NTG=B]

[ASK IF N3k=8, 9, 10]

N3kk. What were the reasons that you gave that rating?

[SKIP TO N3n IF NTG=B]

N3l. Corporate policy or guidelines

N3m. Payback on the investment

N3n. Were there any other factors we haven't discussed that were influential in your decision to install this MEASURE?

- 00 Other [Record verbatim]
- 96 (Nothing else influential)
- 88 (Don't Know)
- 99 (Refused)

[ASK N3nn IF N3n=00]

N3nn. Using the same zero to 10 scale, how would you rate the influence of this factor?
[RECORD 0 to 10; 88=Don't Know; 99=Refused]

Thinking about this differently, I would like you to compare the importance of the PROGRAM with the importance of other factors in implementing the <ENDUSE> project.

[SKIP TO N3p IF NTG=B]

[READ IF (N3A, N3D, N3E, N3I, N3J, N3L, N3M, OR N3N)=8,9,10; ELSE SKIP TO N3p]

You just told me that the following other factors were important:

[READ IN ONLY ITEMS WHERE THEY GAVE A RATING OF 8 or higher]

- (N3A) Age or condition of old equipment,
- (N3D) Equipment Vendor recommendation
- (N3E) Previous experience with this measure
- (N3I) Recommendation from a design or consulting engineer
- (N3J) Standard practice in your business/industry
- (N3L) Corporate policy or guidelines
- (N3M) Payback on investment
- (N3N) Other factor

N3p If you were given a TOTAL of 100 points that reflect the importance in your decision to implement the <ENDUSE>, and you had to divide those 100 points between: 1) the program and 2) other factors, how many points would you give to the importance of the PROGRAM?

Points given to program: [RECORD 0 to 100; 8888=Don't Know; 9999=Refused]

[CALCULATE VARIABLE "OTHERPTS" AS: 100 MINUS N3p RESPONSE; IF N3p=8888, 9999, SET OTHERPTS=BLANK]

N3o And how many points would you give to other factors? [RECORD 0 to 100; 8888=Don't Know; 9999=Refused] [The response should be <OTHERPTS> because both numbers should equal 100. If response is not <OTHERPTS> ask INC1]

INC1 The last question asked you to divide a TOTAL of 100 points between the program and other factors. You just noted that you would give <N3p RESPONSE> points to the program. Does that mean you would give <OTHERPTS> points to other factors?

- 1 (Yes)
- 2 (No)
- 88 (Don't know)
- 99 (Refused)

[IF INC1=2, go back to N3p]

CONSISTENCY CHECK ON PROGRAM IMPORTANCE SCORE

[ASK IF (N3p>69 AND ALL OF (N3b, N3c, N3f, N3h, AND N3k)=0,1,2,3), ELSE SKIP TO N4aa]

N4 You just gave <N3p RESPONSE> points to the importance of the program, I would interpret that to mean that the program was quite important to your decision to install this equipment. Earlier, when I asked about the importance of individual elements of the program I recorded some answers that would imply that they were not that important to you. Just to make sure I have recorded this properly, I have a couple questions to ask you.

N4a When asked about THE AVAILABILITY OF THE PROGRAM INCENTIVE, you gave a rating of ...<N3B RESPONSE> ... out of ten, indicating that the program incentive was not that important to you. Can you tell me the reasons that was not that important?

- 00 [Record VERBATIM]
- 88 (Don't know)
- 99 (Refused)

[SKIP N4b IF NTG=B OR<TECH ASSIST>=0]

N4b When I asked you about THE INFORMATION PROVIDED THROUGH THE TECHNICAL ASSISTANCE, you gave a rating of ...<N3C RESPONSE> ... out of ten, indicating that the information provided was not that important to you. Can you tell me the reasons that provided was not that important?

- 00 [Record VERBATIM]
- 88 (Don't know)
- 99 (Refused)

N4c When I asked you about THE RECOMMENDATION FROM A Nicor Gas PROGRAM STAFF PERSON, you gave a rating of ...<N3F RESPONSE> ... out of ten, indicating that the information provided was not that important to you. Can you tell me the reasons that provided was not that important?

- 00 [Record VERBATIM]
- 88 (Don't know)
- 99 (Refused)

N4d When asked about THE INFORMATION from the <PROGRAM> or Nicor Gas MARKETING MATERIALS, you gave a rating of ...<N3H RESPONSE> ... out of ten, indicating that this information from the program or utility marketing materials was not that important to you. Can you tell me the reasons that this information was not that important?

00 [Record VERBATIM]

88 (Don't know)

99 (Refused)

[SKIP N4e IF N3k=96,88,99]

N4e When asked about THE ENDORSEMENT or RECOMMENDATION by YOUR UTILITY ACCOUNT MANAGER, you gave a rating of <N3K RESPONSE> ... out of ten, indicating that this Account manager endorsement was not that important to you. Can you tell me the reasons that this endorsement was not that important?

00 [Record VERBATIM]

88 (Don't know)

99 (Refused)

[ASK IF N3p<31 AND ANY ONE OF (N3b, N3c, N3f, N3h, OR N3k=8,9,10) ELSE SKIP TO N5]

N4aa You just gave <N3p RESPONSE> points to the importance of the program. I would interpret that to mean that the program was not very important to your decision to install this equipment. Earlier, when I asked about the importance of individual elements of the program I recorded some answers that would imply that they were very important to you. Just to make sure I understand, would you explain the reasons that the program was not very important in your decision to install this equipment?

Now I would like you to think about the action you would have taken with regard to the installation of this equipment if the utility program had not been available.

N5 Using a likelihood scale from 0 to 10, where 0 is "Not at all likely" and 10 is "Extremely likely", if the utility program had not been available, what is the likelihood that you would have installed exactly the same equipment? [RECORD 0 to 10; 88=Don't know; 99=Refused]

CONSISTENCY CHECKS

[ASK N5a-d IF N3b=8,9,10 AND N5=7,8,9,10]

N5a When you answered ...<N3B RESPONSE> ... for the question about the influence of the incentive, I would interpret that to mean that the incentive was quite important to your decision to install. Then, when you answered <N5 RESPONSE> for how likely you would be to install the same equipment without the incentive, it sounds like the incentive was not very important in your installation decision.

I want to check to see if I am misunderstanding your answers or if the questions may have been unclear. Will you explain the role the incentive played in your decision to install this efficient equipment?

00 [Record VERBATIM]

88 (Don't know)

99 (Refused)

N5b Would you like for me to change your score on the importance of the incentive that you gave a rating of <N3B RESPONSE> or change your rating on the likelihood you would install the same equipment without the incentive which you gave a rating of <N5 RESPONSE> and/or we can change both if you wish?

1 (Change importance of incentive rating)

2 (Change likelihood to install the same equipment rating)

3 (Change both)

4 (No, don't change)

88 (Don't know)

99 (Refused)

[ASK IF N5b=1,3]

N5c How important was... availability of the PROGRAM incentive? (IF NEEDED: in your DECISION to implement the project) [Scale of 0 to 10, where 0 means not at all important and 10 means extremely important; 88=Don't know, 99=Refused]

[ASK IF N5b=2,3]

N5d If the utility program had not been available, what is the likelihood that you would have installed exactly the same equipment? [Scale of 0 to 10, where 0 means "Not at all likely" and 10 means "Extremely likely"; 88=Don't know, 99=Refused]

[ASK IF N3j>7]

N6 In an earlier question, you rated the importance of STANDARD PRACTICE in your industry very highly in your decision making. Could you please rate the importance of the PROGRAM, relative to this standard industry practice, in influencing your decision to install this measure. Would you say the program was much more important, somewhat more important, equally important, somewhat less important, or much less important than the standard practice or policy?

1 (Much more important)

2 (Somewhat more important)

3 (Equally important)

4 (Somewhat less important)

5 (Much less important)

88 (Don't know)

99 (Refused)

[ASK IF N5>0, ELSE SKIP TO N8]

N7 You indicated earlier that there was a <N5 RESPONSE> in 10 likelihood that you would have installed the same equipment if the program had not been available. Without the program, when do you think you would have installed this equipment? Would you say...

- 1 At the same time
- 2 Earlier
- 3 Later
- 4 (Never)
- 88 (Don't know)
- 99 (Refused)

[ASK N7a IF N7=3]

N7a. How much later would you have installed this equipment? Would you say...

- 1 Within 6 months?
- 2 6 months to 1 year later
- 3 1 - 2 years later
- 4 2 - 3 years later?
- 5 3 - 4 years later?
- 6 4 or more years later
- 88 Don't know
- 99 Refused

[ASK N7b IF N7a=6]

N7b. What were the reasons that you do you think it would have been 4 or more years later?

- 00 [Record VERBATIM]
- 88 (Don't know)
- 99 (Refused)

PAYBACK BATTERY [ASK N8-N10e IF N3m=6,7,8,9,10]

I'd like to find out more about the payback criteria <COMPANY> uses for its investments.

N8 What financial calculations does <COMPANY> make before proceeding with installation of a MEASURE like this one?

- 00 [Record VERBATIM]
- 88 (Don't know)
- 99 (Refused)

N9 What is the payback cut-off point <COMPANY> uses (in months) before deciding to proceed with an investment? Would you say...

- 1 0 to 6 months
- 2 7 months to 1 year
- 3 more than 1 year up to 2 years
- 4 more than 2 years up to 3 years

- 5 more than 3 years up to 5 years
- 6 Over 5 years
- 88 (Don't know)
- 99 (Refused)

N10 Does your company generally implement projects that meet the required financial cut-off point?

- 1 (Yes)
- 2 (No)
- 88 (Don't know)
- 99 (Refused)

[ASK N10aa IF N10=2]

N10aa What are the reasons that your company generally doesn't implement projects that meet the required financial cut-off point?

- 00 [Record VERBATIM]
- 88 (Don't know)
- 99 (Refused)

N10a Did the rebate play a big role in moving your project within the acceptable payback cutoff point?

- 1 (Yes)
- 2 (No)
- 88 (Don't know)
- 99 (Refused)

CORPORATE POLICY BATTERY [ASK N11-N17 IF N3L=6,7,8,9,10]

N11 Does your organization have a corporate environmental policy to reduce environmental emissions or energy use? Some examples would be to "buy green" or use sustainable approaches to business investments.

- 1 (Yes)
- 2 (No)
- 88 (Don't know)
- 99 (Refused)

[ASK N12-N17 IF N11=1]

N12 What specific corporate policy influenced your decision to adopt or install the <ENDUSE> through the Nicor Gas program?

00 [RECORD VERBATIM]

88 (Don't know)

99 (Refused)

N13 Had that policy caused you to adopt energy efficient <ENDUSE> at this facility before participating in the Nicor Gas program?

1 (Yes)

2 (No)

88 (Don't know)

99 (Refused)

N14 Had that policy caused you to adopt energy efficient <ENDUSE> at other facilities before participating in the Nicor Gas Program?

1 (Yes)

2 (No)

88 (Don't know)

99 (Refused)

[ASK N15-N16 IF N13=1 OR N14=1]

N15 Did you receive an incentive for a previous installation of <ENDUSE>?

1 (Yes)

2 (No)

88 (Don't know)

99 (Refused)

[ASK N16 IF N15=1]

N16 To the best of your ability, please describe.... [Record VERBATIM; 88=Don't know; 99=Refused]

a. the amount of incentive received

b. the approximate timing

c. the name of the program that provided the incentive

[ASK N17 IF N13=1 OR N14=1]

N17 If I understand you correctly, you said that <COMPANY> 's corporate policy has caused you to install energy efficient <ENDUSE> previously at this and/or other facilities. I want to make sure I fully understand how this corporate policy influenced your decision versus the Nicor Gas program. Can you please clarify that?

00 [Record VERBATIM]

88 (Don't know)

99 (Refused)

STANDARD PRACTICE BATTERY

[ASK N18-N22 IF N3j=6,7,8,9,10]

N18 Approximately, how long has use of energy efficient <ENDUSE> been standard practice in your industry?

M [00 Record Number of Months; 88=Don't know, 99=Refused]

Y [00 Record Number of Years; 88=Don't know, 99=Refused]

N19 Does <COMPANY> ever deviate from the standard practice?

1 (Yes)

2 (No)

88 (Don't know)

99 (Refused)

[ASK IF N19=1]

N19a Please describe the conditions under which <COMPANY> deviates from this standard practice.

00 [Record VERBATIM]

88 (Don't know)

99 (Refused)

N20 How did this standard practice influence your decision to install the <ENDUSE> through the <PROGRAM>?

00 [Record VERBATIM]

88 (Don't know)

99 (Refused)

N20a Could you please rate the importance of the <PROGRAM>, versus this standard industry practice in influencing your decision to install the <ENDUSE>. Would you say the <PROGRAM> was...

1 Much more important

2 Somewhat more important

3 Equally important

4 Somewhat less important

5 Much less important

88 (Don't know)

99 (Refused)

N21 What industry group or trade organization do you look to establish standard practice for your industry?

00 [Record VERBATIM]

88 (Don't know)

99 (Refused)

N22 How do you and other firms in your industry receive information on updates in standard practice?

00 [Record VERBATIM]

88 (Don't know)

99 (Refused)

DESIGN ASSISTANCE

N23 Who provided the most assistance in the design or specification of the <ENDUSE> you installed through the <PROGRAM>? (If necessary, probe from the list below.)

- 1 (Designer)
- 2 (Consultant)
- 3 (Equipment distributor)
- 4 (Installer)
- 5 (Nicor Gas account manager)
- 6 (<Nicor Gas PROGRAM> staff)
- 7 RSG Representative
- 00 (Other, specify)
- 88 (Don't know)
- 99 (Refused)

[SKIP N24 IF N23=88, 99]

N24 Please describe the type of assistance that they provided.

- 00 Record VERBATIM
- 88 Don't know
- 99 Refused

ADDITIONAL PROJECTS

[ASK N26 IF MSAME=1]

Our records show that <COMPANY> also received an incentive from Nicor Gas for <NSAME> other <ENDUSE> project(s).

N26 Was it a single decision to complete all of those <ENDUSE> projects for which you received an incentive from Nicor Gas or did each project go through its own decision process?

- 1 (Single Decision)
- 2 (Each project went through its own decision process)
- 00 (Other, specify)
- 88 (Don't know)
- 99 (Refused)

[ASK N27 IF FSAME=1 ELSE SKIP TO SPILLOVER MODULE]

Our records show that <COMPANY> also received an incentive from Nicor Gas for a <FDESC> project at < ADDRESS >.

N27 Was the decision making process for the <FDESC> project the same as for the <ENDUSE> project we have been talking about?

- 1 (Same decision making process)
- 2 (Different decision making process)

- 00 (Other, specify)
- 88 (Don't know)
- 99 (Refused)

SPILOVER MODULE

Thank you for discussing the new <ENDUSE> that you installed through the <PROGRAM>. Next, I would like to discuss any energy efficient equipment you might have installed OUTSIDE of the program.

SP1 Since your participation in the Nicor Gas program, did you implement any ADDITIONAL energy efficiency measures at this facility or at your other facilities within the Nicor Gas service territory that did NOT receive incentives through any utility or government program?

- 1 (Yes)
- 2 (No)
- 88 (Don't know)
- 99 (Refused)

[ASK SP2-SP7i IF SP1=1, ELSE SKIP TO S0]

SP2 What was the first measure that you installed or implemented? (IF RESPONSE IS GENERAL, E.G., "LIGHTING EQUIPMENT", PROBE FOR SPECIFIC MEASURE. PROBE FROM LIST, IF NECESSARY. IF RESPONDENT IS UNSURE OF DETAILS ASK THEM TO MAKE THEIR BEST GUESS OR OFFER ALTERNATIVE DESCRIPTION UNDER 00 - "OTHER")

1. HVAC Steam Trap Repairs (Low Pressure <15 psi)
2. HVAC Steam Trap Repairs (High Pressure >=15 psi)
3. HVAC Steam Trap Replacement (Low Pressure <15 psi)
4. HVAC Steam Trap Replacement (High Pressure >=15 psi)
5. HVAC Steam Trap Test
6. Industrial/Process Steam Trap (Low Pressure <15 psi)
7. Industrial/Process Steam Trap (High Pressure >=15 psi)
8. Industrial/Process Steam Trap Test
9. Space Heating Hot Water Boilers (< 300 MBH and Rated AFUE of 90% or Greater)
10. Space Heating Hot Water Boilers (>= 300 MBH and Rated Thermal Energy of 85% or Greater)
11. Space Heating Hot Water Boilers (>= 300 MBH and Rated Thermal Energy of 90% or Greater)
12. Space Heating Hot Water Boiler – Condensing Unite Heater (Rated Thermal Energy of 90% or Greater)
13. Space Heating Hot Water Boiler Cutout and Reset Controls
14. Boiler Tune up (Rated at >= 110MBH Output with a post tune-up increase in efficiency)
15. Industrial Burner Tune Ups (Rated at >= 110MBH Output with a post tune-up increase in efficiency)
16. Domestic Hot water Pipe Insulation (Pipe must be part of a domestic hot water distribution

- system. Minimum pipe diameter of 0.5 inch Pipe insulation installed must be \geq R-2)
17. Hot Water Boiler Pipe Insulation (Minimum pipe diameter of 1 inch)
 18. Steam Boiler Pipe Insulation (Minimum pipe diameter of 1 inch)
 19. Space Heating Furnaces (>92% to <95% AFUE)
 20. Space Heating Furnaces (\Rightarrow 95% AFUE)
 21. Space Heating Furnaces (Infrared Heaters)
 22. Natural Gas Water Heaters (<75 MBH Input and \geq .67 Energy Factor)
 23. Large Natural Gas Water Heater (\Rightarrow 75 Input and \geq 90% Thermal Efficiency)
 24. Indirect Water Heater (Must be paired with a condensing, modulating hot water boiler rated at either \geq 90% AFUE or \geq 85% thermal efficiency)
 25. Tankless Water Heater (Must be rated at < 200 MBH input and \geq 0.82)
 26. Programmable Thermostats
 27. Indoor Pool or Spa Covers (must be rated by manufacturer as a pool or spa cover)
 28. Food Service Equipment (Convection Oven – Energy Star or Fisher-Nickel)
 29. Food Service Equipment (Combination Oven – Energy Star or Fisher-Nickel)
 30. Food Service Equipment (Fryer – Energy Star or Fisher-Nickel)
 31. Food Service Equipment (Upright Boiler with infrared burner)
 32. Food Service Equipment (Large Conveyor Oven - Energy Star or Fisher-Nickel with conveyor belt \Rightarrow 25 inches)
 33. Food Service Equipment (Pasta Cooker –infrared burner and designated as a pasta cooker by manufacturer)
 34. Food Service Equipment (Rotisserie Oven)
 35. Food Service Equipment (Salamander Broiler)
 36. Food Service Equipment (Pre-Rinse Sprayers - Must have a flow rate of \leq 1.6 GPM and replace a sprayer \geq 2.2 GPM.)
 37. Food Service Equipment (Steamer – Energy Star or Fisher-Nickel with minimum 5 pan capacity)
 38. Food Service Equipment (Griddle – Energy Star or Fisher-Nickel)
 39. Food Service Equipment (Rack Oven – Energy Star or Fisher-Nickel)
 00. Other: (Specify)_____
 96. None – Did not implement/install any additional measures
 88. Don't know
 99. Refused

[SKIP TO S0 IF SP2=96, 88, 99]

SP3 What was the second measure?

- SP5 I have a few questions about the FIRST measure that you installed. (If needed, read back measure: <SP2 RESPONSE>) [OPEN END]
- a. What were the reasons that you not receive an incentive for this measure?
 - b. What were the reasons that you did not install this measure through the Nicor Gas Program?
 - c. Please describe the SIZE, TYPE, and OTHER ATTRIBUTES of this measure.
 - d. Please describe the EFFICIENCY of this measure.
 - e. How many of this measure did you install?

- SP5f. Was this measure specifically recommended by a program related audit, report or program technical specialist?
- 1 (Yes)
 - 2 (No)
 - 88 (Don't know)
 - 99 (Refused)

- SP5g. How significant was your experience in the Nicor Gas Program in your decision to implement this Measure, using a scale of 0 to 10, where 0 is not at all significant and 10 is extremely significant? [SCALE 0-10; 88=Don't Know; 99=Refused]

[SKIP SP5h IF SP5g = 88, 99]

- SP5h. What were the reasons that you gave it this rating?[OPEN END]

- SP5i. If you had not participated in the Nicor Gas program, how likely is it that your organization would still have implemented this measure, using a 0 to 10, scale where 0 means you definitely WOULD NOT have implemented this measure and 10 means you definitely WOULD have implemented this measure? [SCALE 0-10; 88=Don't Know; 99=Refused]

CONSISTENCY CHECK ON PROGRAM IMPORTANCE RATING VS. NO PROGRAM RATING

[ASK CC1a IF SP5g=0,1,2,3 AND SP5i =0,1,2,3]

CC1a When you answered ...<SP5g RESPONSE> ... for the question about the influence of the Nicor Gas Program on your decision to install this measure, I would interpret that to mean the Program was not very important to your decision. 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 in the Nicor Gas Program. Can you please explain the role the program made in your decision to implement this measure?

- 00 [Record VERBATIM]
- 88 (Don't know)
- 99 (Refused)

[ASK CC1b IF SP5g=8,9,10 AND SP5i =8,9,10]

CC1b When you answered ...<SP5g RESPONSE> ... for the question about the influence of the Nicor Gas Program on your decision to install this measure, I would interpret that to mean the Program was quite important to your decision. 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 in the Nicor Gas Program. Can you please explain the role the program made in your decision to implement this measure?

- 00 [Record VERBATIM]
- 88 (Don't know)
- 99 (Refused)

[SKIP SP6-SP7i IF SP3=96, 88, 99]

SP6 I have a few questions about the SECOND measure that you installed. (If needed, read back measure: <SP3 RESPONSE>) [OPEN END]

- a. What were the reasons that you did you not receive an incentive for this measure?
- b. What were the reasons that you did not install this measure through the Nicor Gas Program?
- c. Please describe the SIZE, TYPE, and OTHER ATTRIBUTES of this measure.
- d. Please describe the EFFICIENCY of this measure.
- e. How many of this measure did you install?

SP6f. Was this measure specifically recommended by a program related audit, report or program technical specialist?

- 1 (Yes)
- 2 (No)
- 88 (Don't know)
- 99 (Refused)

SP6g. How significant was your experience in the Nicor Gas Program in your decision to implement this Measure, using a scale of 0 to 10, where 0 is not at all significant and 10 is extremely significant? [SCALE 0-10; 88=Don't Know; 99=Refused]

[SKIP SP6h IF SP6g = 88, 99]

SP6h. What were the reasons that you gave it this rating?[OPEN END]

SP6i. If you had not participated in the Nicor Gas program, how likely is it that your organization would still have implemented this measure, using a 0 to 10, scale where 0 means you definitely WOULD NOT have implemented this measure and 10 means you definitely WOULD have implemented this measure? [SCALE 0-10; 88=Don't Know; 99=Refused]

CONSISTENCY CHECK ON PROGRAM IMPORTANCE RATING VS. NO PROGRAM RATING

[ASK CC2a IF SP6g=0,1,2,3 AND SP6i =0,1,2,3]

CC2a When you answered ...<SP6g RESPONSE> ... for the question about the influence of the Nicor Gas Program on your decision to install this measure, I would interpret that to mean the Program was not very important to your decision. 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 in the Nicor Gas Program. Can you please explain the role the program made in your decision to implement this measure?

- 00 [Record VERBATIM]
- 88 (Don't know)
- 99 (Refused)

[ASK CC2b IF SP6g=8,9,10 AND SP6i =8,9,10]

CC2b When you answered ...<SP6g RESPONSE> ... for the question about the influence of the Nicor Gas Program on your decision to install this measure, I would interpret that to mean the Program was quite important to your decision. 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 in the Nicor Gas Program. Can you please explain the role the program made in your decision to implement this measure?

- 00 [Record VERBATIM]
- 88 (Don't know)
- 99 (Refused)

PROCESS MODULE

I'd now like to ask you a few general questions about your participation in the C&I Prescriptive Rebate Program .

Program Processes and Satisfaction

[IF S1<>1 SKIP TO S1A]

S0 How did you first hear about the C&I Prescriptive Rebate Program?

- 1. (Nicor Gas Account Manager)
- 2. (Nicor Gas Website)
- 4. (Contractor/Trade Ally)
- 5. (Email)
- 6. (Friend/colleague/word of mouth)
- 00. (Other, specify)
- 88. (Don't know)
- 99. (Refused)

S1a Did YOU fill out the application forms for the project? (Either the initial or the final program application)

- 1. (Yes)
- 2. (No)

- 88. (Don't know)
- 99. (Refused)

[ASK S1b IF S1a=1 ELSE SKIP TO S1e]

S1b Did the application forms clearly explain the program requirements and how to participate?

- 1. (Yes)
- 2. (No)
- 3. (Somewhat)
- 88. (Don't know)
- 88. (Refused)

S1c How would you rate the application process? Please use a scale of 0 to 10 where 0 is "very difficult" and 10 is "very easy". [SCALE 0-10; 88=Don't know, 99=Refused]

[ASK S1d IF S1c<4]

S1d What were the reasons that you gave that rating?

- 1. (Difficult to understand)
- 2. (Long process)
- 00. (Other, specify)
- 88. (Don't know)
- 99. (Refused)

[ASK S1e IF S1a=2]

S1e Who filled out the application forms for the project?

- 1. (Someone else at the facility)
- 2. (Someone else at the company)
- 3. (Trade Ally)
- 4. (Contractor)
- 5. (Supplier/Distributor/Vendor)
- 6. (Engineer)
- 7. (Consultant)
- 00. (Other, specify)
- 88. (Don't know)
- 99. (Refused)

[IF S1=3, SKIP TO S8]

S4a Did you use a contractor for your <ENDUSE> project?

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

[ASK S4b IF S4a=1]

S4b Was the contractor you used a Nicor Gas Trade Ally? (IF NEEDED: Was the contractor REGISTERED with the C&I Prescriptive Rebate Program?)

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

[ASK S5 IF S4a=1 ELSE SKIP TO S7]

S5 How would you rate the contractor's ability to meet your needs in terms of implementing your project? Please use a scale from 0 to 10, where 0 is "not at all able to meet needs" and 10 is "completely able to meet needs"? [SCALE 0-10; 88=Don't know, 99=Refused]

S6a Would you recommend the contractor you worked with to other people or companies?

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

[ASK S6b IF S6a=2]

S6b What are the reasons that you would not recommend the contractor with whom you worked?

1. (Too small)
00. (Other, specify)
88. (Don't know)
99. (Refused)

S7 When implementing an energy efficiency project, how important is it to you that the contractor is a Nicor Gas Trade Ally? Please use a scale from 0 to 10, where 0 is "not at all important" and 10 is "very important"? [SCALE 0-10; 88=Don't know, 99=Refused]

S8 During the course of your participation in the program, did you place any calls to the C&I Prescriptive Rebate Program Call Center?

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

[ASK S9 IF S8=1]

S9 On a scale of 0 to 10, where 0 is "very dissatisfied" and 10 is "very satisfied;" how would you rate your satisfaction with the Call Center's ability to answer your questions? [SCALE 0-10; 88=Don't know, 99=Refused]

[ASK S10 IF S9<4]

S10 What were the reasons that you gave it that rating?

1. (Provided inconsistent information)

- 2. (Didn't understand the question)
- 3. (Hard to reach the right person/person with the answer)
- 00. (Other, specify)
- 88. (Don't know)
- 99. (Refused)

S11 On a scale of 0 to 10, where 0 is very dissatisfied and 10 is very satisfied, how would you rate your satisfaction with... [SCALE 0-10; 96=not applicable, 88=Don't know, 99=Refused]

- a. the incentive amount
- b. the communication you had with the C&I Prescriptive Rebate Program staff or RBS
- c. the measures offered by the program (If needed: this is the equipment that is eligible for an incentive under the program)
- d. the C&I Prescriptive Rebate Program overall
- e. RSG Representative
- f. Nicor Gas overall

[ASK S12a IF S11a<4]

S12a You indicated some dissatisfaction with the incentive amount, what are the reasons that you gave this rating? [MULTIPLE RESPONSE; UP TO 3]

- 1. (Better rebates in other states)
- 2. (Too small)
- 3. (Equipment didn't qualify)
- 00. (Other, specify)
- 88. (Don't know)
- 99. (Refused)

[ASK S12b IF S11b<4]

S12b You indicated some dissatisfaction with the communication you had with the C&I Prescriptive Rebate Program staff, what are the reasons that you gave this rating?

- 1. (Provided inconsistent information)
- 2. (Didn't understand the question)
- 3. (Hard to reach the right person/person with the answer)
- 00. (Other, specify)
- 88. (Don't know)
- 99. (Refused)

[ASK S12c IF S11c<4]

S12c You indicated some dissatisfaction with the measures offered by the C&I Prescriptive Rebate Program, what are the reasons that you gave this rating? [OPEN END; 88=Don't know, 99=Refused]

[ASK S12d IF S11d<4]

S12d You indicated some dissatisfaction with the C&I Prescriptive Rebate Program overall, what are the reasons that you gave this rating?

- 1. (Not as easy as other states)

- 2. (No clear guidance)
- 00. (Other, specify)
- 88. (Don't know)
- 99. (Refused)

[ASK S12e IF S11e<4]

S12e You indicated some dissatisfaction with Nicor Gas overall, what are the reasons that you gave this rating?

- 1. (Rates are too high)
- 2. (Took too long to get rebate)
- 3. (Poor customer service)
- 4. (Poor power supply/service)
- 00. (Other, specify)
- 88. (Don't know)
- 99. (Refused)

Marketing and Outreach

[IF S1<>1, SKIP TO B1A]

MK0 I'm now going to ask you about several specific ways in which you might have seen or heard information about the C&I Prescriptive Rebate Program. Have you ever... [1=Yes, 2=No, 8=(Don't know), 9=(Refused)]

- a. Received information about the program in your monthly utility bill?
- b. Attended a Nicor Gas customer event where the program was discussed?
- c. Discussed the program with a Nicor Gas Account Manager?
- d. Discussed the program with a Contactor or Trade Ally?
- e. Seen information about the program on the Nicor Gas Website?
- f. Received information about the program in an Email?
- g. Heard about the program from a colleague, friend or family member?
- h. Attended a meeting, seminar or workshop where the program was presented?
- i. Attended a webinar where the program was discussed?
- j. Read about the program in a Nicor Gas Newsletter?
- k. Been directly contacted by a Nicor Gas or RSG Energy outreach staff?

How much did the information you received peak your interest and motivate you to find out more about the program?

MK1a How much did the information you received peak your interest and motivate you to find out more about the program?

- 1. Very useful
- 2. Somewhat useful
- 3. Not very useful
- 4. Not at all useful
- 8. (Don't know)
- 9. (Refused)

MK1b How useful were the program’s marketing materials in providing information about the program? Would you say they were...

1. Very useful
2. Somewhat useful
3. Not very useful
4. Not at all useful
8. (Don't know)
9. (Refused)

[ASK MK1c IF MK1b=3,4]

MK1c What would have made the materials more useful to you? [MULTIPLE RESPONSE, UP TO 3]

1. (More detailed information)
2. (Where to get additional information)
00. (Other, specify)
88. (Don't know)
99. (Refused)

MK2 In general, what is the best way of reaching companies like yours to provide information about energy efficiency opportunities like the C&I Prescriptive Rebate Program? [MULTIPLE RESPONSE, UP TO 3]

1. (Bill inserts)
2. (Flyers/ads/mailings)
3. (e-mail)
4. (Telephone)
5. (Nicor Gas Account Manager)
8. (Trade allies/contractors)
00. (Other, specify)
88. (Don't know)
99. (Refused)

Benefits and Barriers

B1a What do you see as the main benefits to participating in the C&I Prescriptive Rebate Program? [MULTIPLE RESPONSE, UP TO 3]

1. (Energy Savings/Saving money)
2. (Good for the Environment)
3. (Lower Maintenance Costs)
4. (Better Quality/New Equipment)
5. (Rebate/Incentive)
9. (Able to make improvements sooner)
00. (Other, Specify)
88. (Don't know)
99. (Refused)

B1b What do you see as the drawbacks to participating in the program? [MULTIPLE RESPONSE, UP TO 3]

1. (Paperwork too burdensome)
2. (Incentives not high enough/not worth the effort)
3. (Program is too complicated)
4. (Cost of equipment)
5. (No drawbacks)
00. (Other, specify)
88. (Don't know)
99. (Refused)

B2 BLANK

B3 Was the scope of your project limited by the program's incentive cap?

1. Yes
2. No
00. (Other, specify)
88. (Don't know)
99. (Refused)

Feedback and Recommendations

R1 Do you plan to participate in the program again in the future?

1. Yes
2. No
3. Maybe
8. (Don't know)
9. (Refused)

R2 How could the C&I Prescriptive Rebate Program be improved? [MULTIPLE RESPONSE, UP TO 4]

1. (Higher incentives)
2. (More measures)
3. (Greater publicity)
4. (Better Communication/Improve Program Information)
8. (Simplify application process)
11. (Quicker processing times)
00. (Other, specify)
96. (No recommendations)
88. (Don't know)
99. (Refused)

Firmographics

I only have a few general questions left.

F1 BLANK

F2 Which of the following best describes the ownership of this facility?

1. <COMPANY> owns and occupies this facility
2. <COMPANY> owns this facility but it is rented to someone else
3. <COMPANY> rents this facility
8. (Don't know)
9. (Refused)

F6 And which of the following best describes the facility? This facility is...

1. <COMPANY>'s only location
2. one of several locations owned by <COMPANY>
3. the headquarters location of <COMPANY> with several locations

F4a How old is this facility? [NUMERIC OPEN END, 0 TO 150; 8888=Don't know, 9999=Refused]

F5a How many employees, full plus part-time, are employed at this facility? [NUMERIC OPEN END, 0 TO 2000; 88888=Don't know, 999999=Refused]

[SKIP F7 IF F2=2]

F7 In comparison to other companies in your industry, would you describe <COMPANY> as...

1. A small company
2. A medium-sized company
3. A large company
4. (Not applicable)
8. (Don't know)
9. (Refused)

5.8.2 Trade Ally Survey

Nicor Gas Business Incentives Rebate Program Trade Ally Contractor In-Depth Interview Guide

August 2012 Draft

Respondent name:	
Respondent phone number:	
Respondent title:	
Email Address:	
Respondent Company	
Date:	
Status:	

Section	Topics	Questions
Background	What type of business does the trade ally conduct and what types of experience does this trade representative have?	Q1-Q3
Marketing and Participation	How did trade ally become aware of this program and other utility programs? Do you refer customers to other utility programs? Is the level of utility marketing sufficient? Has word of mouth marketing had an impact?	Q4-Q8
Program Barriers	How could the program be changed to overcome the barriers encountered by customers and trade allies?	Q9-Q10
Administration and Delivery	How do you market the program? How do you provide customers with service for both electric and gas energy efficient equipment? Does program delivery occur in a timely manner? Do you need more training?	Q11-Q17
Program Satisfaction	How satisfied are trade allies with the program? How satisfied are customers with the program? Do the inspections increase or decrease customer satisfaction?	Q18-Q21
Economic Indicators	How do the current economic conditions impact the program? Have your business revenues grown? Have you hired more employees? Do you plan on continuing your participation?	Q22-Q26

Section	Topics	Questions
Free Ridership and Spillover	Would business customers have installed the equipment without the program (free ridership)? About what percentage of customers have installed additional energy efficient equipment without an incentive (spillover)?	Q27-Q37

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

Introduction

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

Hi, may I please speak with [NAME]?

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

This interview is about your experience with the Business Energy Efficiency Program, which I may refer to as the Business EER Program, or simple, the Program

Background

1. Can you briefly describe the company you work for and the type of business it conducts? How many are employed at your company? Who are your primary business customers?
2. Can you briefly summarize your roles and responsibilities at your company? For how long have you carried these out?
3. How would you describe your familiarity with your company’s relationship with the Nicor Gas Business Energy Efficiency Rebate Program?

Marketing and Participation

4. How and when did you (the contractor) become aware of the program? What other ways can the utilities and program implementers use to boost program awareness with contractors?
5. Are you aware of other Nicor Gas Energy Efficiency Programs? Have you referred any customers to other Nicor Gas business programs? Do you have any materials that you can leave with customers describing the full range of [Nicor Gas] Programs? (ASK SEPARATELY ABOUT EACH)
6. What kind of support, if any, does [Nicor Gas] provide to you for marketing the Business EER Program to your customers? Do you use utility-produced marketing materials?
7. Do you think the level of marketing and promotion of the Business EER Program has been appropriate so far? Do you think promotional efforts have been successful? Are there any that you feel have been especially successful in attracting businesses? Do you think they reach the right audience? If the utilities or implementers are missing areas of opportunity, what are those areas?
8. Have you noticed any spontaneous word- of- mouth marketing among Nicor Gas customers? For example, do customers know of other participating businesses before you contact them?

Program Characteristics and Barriers

9. In your opinion, what are the strengths of the Business EER program? What areas could be improved to create a more effective program for customers and program partners? What could be modified to make the program work better (e.g., incentive levels, eligible equipment, etc.)? What would you recommend? Why do you think this change is needed?
10. Have you looked at the website to find program information? Did you find the information that you needed?

Administration and Delivery

11. Do you actively market the program to your customers? How do you decide which Nicor Gas customers to contact about the program? Are these customers current customers of yours? Do you market to targeted geographic areas? What factors influenced you to participate in the program? What factors have prevented you from more active participation in the program?
12. This program provides cash rebates for gas measures. Do you currently partner with any other companies to provide these services?
13. After the customer agrees to install the recommended low-cost equipment, how long does it usually take to schedule the installation?
14. Do you receive the rebate from the utility directly, or does it go to your customers? [IF GOES TO THEM] How long does it take to receive your program rebate after installation? Is this an acceptable amount of time?
15. Do you know whom to contact for help with this program? Who would you call?
16. What training did you receive in how to deliver this equipment to business customers? Would more training be useful? What types of training would be helpful?

Satisfaction with the Business Prescriptive Rebate Program

17. Are you satisfied with the program? Why or why not?
18. Has the program provided your organization with an opportunity to provide an increased level of customer service to your new and current customers?
19. Are customers satisfied with the program? Why or why not? Have you had any call backs and if so, on what measures?
20. Are the incentives levels effective at encouraging customers to install equipment they would not have considered without the program? Economic Indicators
21. Do you think the current economic conditions are affecting the program? If so, how?
22. Do you find the Business Prescriptive Rebate Program is a competitive advantage for your firm?
23. Has your business revenues grown in the past year (Y/N)? If yes would you attribute any of that growth to the Business Prescriptive Rebate Program? About what % (+/- 10%)
24. Have you hired more employees because of work generated by the Business Prescriptive Rebate Program? How many? In the next year will you hire more employees to handle increased work generated by the program? About how many?
25. Do you plan to continue participating in the program through 2013?

Free-ridership

26. Were you installing this type of equipment that would have qualified for the program prior to participating in this program? [IF YES] What kind? About what percent of your sales do you think were of this type of energy efficient equipment before the program? Was it more than 50% or less than 50%? More or less than 75% or 25%? Etc.
27. About what percent of your total sales do you think qualified for the program after you became a Business Prescriptive Rebate Program Trade Ally? Was it more than 50% or less than 50%? More or less than 75% or 25%? Etc. Did all of these installations receive a rebate?
28. About what percent of your total sales do you think would have been for the same type of qualifying equipment in 2011 if the Prescriptive program was not offered?
29. Of the [number of projects in program] in 2011, how many of these businesses were your customers before they participated in the program?
30. Of your customers, how many of them had EVER installed energy efficient equipment before they participated in the Business Prescriptive Rebate Program? What type of equipment was it? When was that project installed?
31. Did the customer receive a rebate from a utility program for installing that qualifying equipment? (Electric only, no gas rebates existed in Illinois before GPY1)
32. Why do you think the customer did not receive a rebate for this equipment?
33. Have any of the Business Prescriptive Rebate Program participants asked your organization to install additional energy efficient equipment after their program participation? What did you install? Why did they want more equipment? Did the equipment qualify for a utility incentive?
34. If the Business Prescriptive Rebate Program had not been available in 2011, how would your sale of program-qualifying equipment be different?

Spillover

35. How many of your business customers purchase program equipment and do not apply for the incentive offered by the utility? [Which measure types and rough scope.]
 - What do you think is the reason for this? (e.g., too time-consuming, too much paperwork, incentive too small to bother)
36. How many of your business customers choose to implement other energy efficiency measures (not incented by the program) as a result of awareness of or participating in the program? What types of things do they usually do? (Try to develop a number for each type.)

Thank you and closing.



**Energy Efficiency Plan
Plan Year 1
(6/1/2011-5/31/2012)**

**Evaluation Report:
Nicor Gas
Business Custom Incentive Program**

FINAL

**Presented to
Nicor Gas**

November 12, 2013

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E. Executive Summary

E.1 Evaluation Objectives

The objectives of Navigant's PY1 Business Custom Incentive program (Custom program) evaluation were to: (1) quantify gross and net savings impacts from the program; (2) determine process-related program strengths and weaknesses and opportunities for program improvement, and (3) provide opportunities to discuss the possibility of providing preliminary, early feedback on baseline assumptions for some projects. Evaluation efforts in PY2 and PY3 will build upon findings in the PY1 evaluation.

E.2 Evaluation Methods

The key evaluation activities to assess gross and net impacts of the Custom Program were:

- Verification of claimed savings
 - Engineering review of project-level tracking data and the algorithms used by the program to calculate energy savings for all measures and the assumptions that feed those algorithms
 - On-site measurement and verification
- In-depth interviews
 - Program implementation contractor
 - Program trade allies/program stakeholders (e.g. wholesale equipment - distributors)
- Program materials review
- Participant telephone surveys via Computer Assisted Telephone Interviews (CATI)

E.3 Key Impact Findings and Recommendations

As shown in Table E-1, savings verification of the GPY1 Custom Program found that research findings gross energy savings were approximately 7% lower than ex-ante gross savings reported in the implementation contractor's (IC's) tracking system, resulting in a realization rate of 0.93 (realization rate = evaluation research findings gross / ex-ante gross from the tracking system). Table E-1 provides the evaluation research findings net energy savings based on a calculated net-to-gross ratio (NTGR) of 0.53.

Table E-1. GPY1 Natural Gas Savings Estimates

Category	Nicor Gas Energy Savings (Therms)
Ex Ante Gross Savings	1,622,380
Ex Ante Net Savings	1,297,904
Research Findings Gross Savings	1,510,285
Research Findings Net Savings	800,451
Verified Net-to-Gross Ratio	0.53

Navigant Analysis of Nicor Gas tracking database (10/06/2012 data extract)

The mean research findings gross realization rate for the Custom Program was 0.93 at $\pm 2\%$ relative precision at a 90% confidence level. A NTGR of 0.53 was estimated for the Custom Program at a relative precision of $\pm 9\%$ at a 90% confidence level.

The primary impact findings and recommendations are as follows:

Finding: Navigant’s program tracking system review indicates that additional information is needed to support future program evaluations and possibly allow program managers to monitor key aspects of program performance at regular intervals.

Recommendations:

- The IC should consider updating the tracking system for the PY2 evaluation to include participant business or facility type.
- The IC should consider including additional fields in the tracking system for information on baseline selection to indicate whether the implemented measure is a replace on burn-out (ROB) or early replacement/retrofit (RET) scenario.
- The tracking system should include measure information such as equipment cost, installation and incremental cost, equipment age or estimated equipment end of useful life. This information is useful for evaluating measure and program cost effectiveness.
- The IC tracks program forecast or pipeline projects separately and updates the main tracking system when projects are approved for incentives. The program tracking system should provide pipeline projects, including timelines.

Finding: Customers or their trade allies do not submit adequate information on the operating condition and input parameters for savings estimates, and measure specifications. During the on-site M&V and subsequent follow-up review, the evaluation team spent a significant amount of time reviewing and obtaining sufficient project information from the customer or IC to enable us to sufficiently establish the condition of installed equipment to develop savings estimations. Significant adjustments were applied to the operating conditions for some projects including; NG01-001, NG01-004, NG01-005, NG01-006, and NG01-015. The projects with the

lowest relative realization rates were; NG01-061, NG01-012, and NG01-002, with realization rates of 0.64, 0.42, and 0.62 respectively.

Recommendation:

- Verification of net claimed savings is greatly aided when thorough documentation of baseline and baseline conditions are provided, including:
 - a. Pre-existing equipment and operation description,
 - b. energy savings assumptions and methodologies,
 - c. estimated equipment remaining useful life from pre-approval application form, when applicable,
 - d. standard maintenance practices and history, and
 - e. Inspection results.
- While the IC is collecting this information to some extent, Navigant stresses the importance of sufficient project documentation to accurately portray the program’s selection of baseline conditions for custom projects.
- Nicor Gas should continue to encourage all customers receiving incentives through the Custom Program to participate in the CATI survey. Navigant will work with the IC in reaching out to program participants prior to initiating either participant or trade ally surveys.

Finding: A relatively lower overall weighted NTGR of 0.53 was achieved compared to initial program planning NTGR of 0.80. This is due to a lower rating by the majority of survey respondents when asked to assign a percentage to the Custom Program’s influence relative to all other factors regarding their decision to implement the measures/project.

Recommendation:

- The program should continue to assess the opportunities to reduce free ridership among the Custom program participants. Although high free ridership among custom project participants is not unusual, increasing awareness and the application screening process can help reduce free ridership.

E.4 Key Process Findings and Recommendations

The primary process findings and recommendations summarized below:

Finding

The Custom Program in the Rider 30 GPY1 period achieved significant progress in recruiting additional participants, with 28 projects participating in GPY1 compared to nine projects during the Rider 29. Although the Custom Program did not meet its GPY1 participation target of 43 projects, the program in GPY1 exceeded its planning gross savings goal by 11%, and an increase of 415% of gross savings compared to the Rider 29 program.

Finding

Navigant found that significant effort has been made to improve on the program marketing and outreach activities to both trade allies and participants since the beginning of Rider 30. Notable among them is the continuous recruitment of contractors and organizing trade ally meetings and training.

During Rider 29, there were 1,000 registered trade allies. The IC did a commendable job in recruiting trade allies to the program, increasing the total registered trade allies to 4,169.

Recommendation

- Nicor Gas should explore the added value of registering trade allies to the program and whether having trade allies increases customer participation. In the event that promoting trade ally status increases program participation, Nicor Gas should emphasize these findings to the trade allies to encourage promotion of the program.

Finding

Participating customers surveyed are highly satisfied with the program, with the majority planning to participate again in the future and the balance possibly participating in the program again in the future. It should be noted that since a high level of freeridership was found in GPY1, these participants may or may not pose a risk of increasing freeridership in future program years if they decide to participate again.

Recommendation

- In an effort to reduce freeridership, the program could;
 - Promote the installation of technologies that are more emergent, and;
 - Continue to recruit trade allies to the program. Increasing trade ally participation may bring customers to the program that may otherwise have not known about the program and promote measures that the customer would be less likely to have installed in the absence of the program.
- The program should continue to work on simplifying the application process, including using more common terminology and the ability to submit program applications online.
- The IC should continue to follow up with those customers (pending participant authorization for Navigant to release their contact information) that indicated that they are interested in future participation to explore whether those customers have particular projects in mind.

Finding

All trade allies contacted were satisfied with the program and its role in their businesses. The majority would be interested in sharing with Nicor Gas their thoughts on equipment and energy saving methods that could be incorporated into the program as well as potential

improvements to the equipment qualification process and the metering documentation required to achieve program approval.

Recommendation:

- Nicor Gas should continue conducting focused research to explore trade allies' thoughts on beneficial program changes.

Finding

Customer referral is happening between the Custom Program and the Small Business and Business Rebate Programs. Referrals are reported to Nicor Gas on a weekly, monthly and quarterly basis.

Recommendation

- The Custom Program in coordination with other Business programs should create a central database system where referral projects are stored and the status of which can tracked.

1. Introduction to the Program

1.1 Program Description

The Custom Program provides business customers with financial incentives for the installation of natural gas-related energy improvements that are not specified for a prescriptive rebate under the Nicor Gas Business Energy Efficiency Rebate Program or other Nicor Gas programs. Participants span a range of industries and can receive incentives for a wide variety of natural gas savings technologies. Typical industries served by this program include light and heavy manufacturing, steel and metal working, plastics compounding and processing, hospitals, food processing, hotels, commercial laundry and other process heating intensive businesses. Large centrally-heated multifamily buildings and office buildings are also targets for this program.

The Custom Program staff work with decision-makers at larger facilities to identify and quantify efficiency opportunities at their facilities. Interested customers must first submit a letter of interest and a pre-approval application to the program. The initial application includes usage history and detailed calculations and specifications for the project. Program staff review the customer's initial savings claims and screen projects using an internal cost-benefit test. For the majority of Custom Program projects, the IC conducts site visits prior to approving the project. If the project is approved by program staff, the participant and program staff will make arrangements for any necessary post-installation inspections. The Custom Program requires that a project's initial application be pre-approved prior to the start of the project.

It is the intent of Nicor Gas and Commonwealth Edison Company (ComEd) to cooperate in offering this program, for example, by exchanging project leads. In some cases, prospective projects may have both natural gas and electricity benefits. In such cases, joint offerings will be made to the customer to address both natural gas and electricity savings. Impact evaluation efforts for Nicor Gas and ComEd will largely be independent as gas savings and electric savings are independent of each other and not interchangeable between utilities, although there may be some observed interaction of measures that influence savings.

The initial program implementation period is three years, commencing with GPY1.¹ The net energy savings goals for GPY1 are 1,169,756 therms and 43 participants. Table 1-1 provides the program GPY1 planning estimates for the Custom Program.

¹ Program year designations are as follows: GPY1 begins June 1, 2011 and ends May 31, 2012; GPY2 begins June 1, 2012 and ends May 31, 2013; GPY3 begins June 1, 2013 and ends May 31, 2014.

Table 1-1. C&I Business Custom Incentive Program Savings Goals and Budget

Category	Incentives Budget	Participation Goal (Projects)	Target Gross Therms Savings	Target Net Therms Savings
Total	\$2,408,000	43	1,462,195	1,169,756

Source: Nicor Gas Monthly Report - GPY1, May 2012; Rider 30 EEP Program Portfolio Operating Plan.

The Custom program accounts for a significant portion of the targeted ex-ante impacts of Nicor Gas’ GPY1 portfolio and, thus, solid Custom Program performance is key to Nicor Gas achieving its portfolio savings goals. Navigant is working with Nicor Gas and its implementation contractor, RSG, to develop an effective means to reduce the risk of non-performance to Nicor Gas through early discussions about custom project baseline assumptions.

Navigant’s 2011 evaluation of the Nicor Gas Rider 29 Custom Program found that the program exceeded its therm savings goals. However, the program performed well primarily due to the impacts of several large projects. This GPY1 evaluation built on Navigant’s previous evaluation work. Specifically, the evaluation included a review of the program’s engineering assumptions and algorithms to review applicable baselines for some projects. The evaluation also included a review of the program’s marketing and outreach efforts implemented since the Nicor Gas Rider 29 program period.

1.2 Evaluation Questions

The evaluation sought to answer the following key researchable questions.

1.2.1 Impact Questions

1. What is the level of gross therm savings induced by the program?
2. What are the net impacts from the program? What is the level of free ridership associated with this program and how can it be reduced? What is the level of spillover associated with this program?
3. Did the program meet its energy savings goals? If not, why not?
4. Are the assumptions and calculations in compliance with standard engineering practice? If not, what changes are required?
5. Are proper baselines being assumed? Is the program leading to early replacement of equipment?

1.2.2 Process Questions

1. Has the program been successful in recruiting additional participants?
2. Has the program been successful in recruiting additional trade allies?

3. How has the program changed its marketing and outreach strategies since Rider 29?
4. Are customers satisfied with the program? In what ways can the program improve the customer experience?
5. Are trade allies satisfied with the program? In what ways can the program improve the trade ally experience?
6. Is the referral process between the Custom program and other programs, such as the Nicor Gas Business Energy Efficiency Rebate program and Nicor Gas Small Business Energy Savings program, working well? Can program coordination be improved?
7. Is the program successfully sharing information with ComEd? Is program staff sufficiently documenting projects with electric and natural gas savings to enable both utilities to properly account for project savings?

2. Evaluation Methods

This section describes the analytic methods and data collection activities implemented as part of the GPY1 impact and process evaluation of the Custom Program, including the data sources and sample designs used as a basis for the data collection activities.

2.1 Primary Data Collection

The key evaluation activities to estimate the evaluation research finding gross energy savings of the Custom Program were:

- Conducted a participant telephone survey targeting a census of the Custom Program population;
- Conducted an engineering review of the tracking database entries and telephone responses for CATI respondents, and;
- Implemented a stratified random sampling design to select 18 projects from the population of Custom project applications, and collected the project application documents from the IC to conduct on-site visits and M&V activities for 15 projects and additional engineering file reviews of 3 projects.

The process analysis reflects input from the program manager and implementation contractor interviews as well as the telephone surveys of program participants. Free ridership and participant spillover were calculated for GPY1 using an algorithm approach based on survey self-report data. Navigant completed telephone interviews with 11 Custom project contacts from GPY1 to support net impact research. The key evaluation activities are summarized in Table 2-1 below.

Table 2-1. Primary Data Collection

Collection Method	Subject Data	Quantity	Gross Impact	Net Impact	Process
In-Depth Interviews	Implementation Contractor	1			X
In-Depth Interviews	Participating Trade Allies	5			X
Engineering Review	On-site Data Collection	15	X		
Engineering Review	Desk File Review	18	X		
Telephone Surveys	Participating Customers	11		X	X

2.2 Additional Research

To support the impact and process evaluation efforts, the evaluation team reviewed the verification and due diligence procedures of the Custom Program, and reviewed project files and the program tracking system. Navigant reviewed the methodology and assumptions used by project applications to estimate custom energy savings. Detailed findings and recommendations to improve the program operations and tracking database are documented in section 3. The full due diligence, verification and tracking system memo can be found in Appendix 5.7.

The evaluation team also documented the Custom Program activities necessary to yield the desired program outcomes. Navigant determined the linkages between activities, outputs, and outcomes, and identified potential external influences. Appendix 5.8 contains the program theory and logic model memo that describes the resources, activities, outputs, outcomes, and associated measurement indicators associated with the Custom Program.

2.3 Impact Evaluation Methods

This section describes the analytic methods implemented as part of the GPY1 impact evaluation of the Custom Program. The key evaluation activities to assess gross and net impacts of the Custom Program were:

- An engineering review of project files and energy savings estimates on a sample of 18 projects to support gross impact evaluation.
- On-site visits and M&V activities on a sample of 15 Custom projects, selected as a subset from the 18 projects in the file review sample. The on-site verification sought to develop independent research finding gross estimates of energy savings, and to update, refine or replace the calculation procedures that were submitted as part of the final application submittal.
- Computer-assisted telephone interviewing (CATI) of 11 Custom program participants to support the net impact analysis approach².

2.3.1 Gross Program Savings

The objective of this aspect of the impact evaluation was to verify the accuracy of the claimed GPY1 ex-ante gross energy savings values in the Custom Program tracking database submitted to the evaluation team on May 31, 2012. The savings reported in the tracking database were evaluated using the following key steps.

² Navigant targeted a 90/10 level of confidence and relative precision for the population of the Custom Program.

- a. Engineering review at the measure-level for a sample of 18 project files.
- b. Preparation of a detailed, site-specific impact evaluation report for each sampled site and the desk file reviewed projects.
- c. Conducting a quality control review of the ex post impact estimates and the associated site reports and implementation of any necessary revisions.

Additional information regarding gross impact evaluation methodology can be found in Appendix 5.6, including baseline assessment, data collection and quality control methods.

Gross Impact M&V Sample

For the GPY1 gross impact evaluation, sampling was conducted on paid projects in the May 31, 2012 database. A statistically significant sample based on 90/20 confidence/precision levels for program-level savings was drawn for the gross savings verification.³ Table 2-2 provides a profile of the gross impact verification sample for the Custom Program in comparison with the Custom Program population. All projects in the population strata 1 and 2 were selected in the sample, and a little more than half of the population in stratum 3 was selected in the sample.

Table 2-2. Profile of GPY1 Gross Impact Sample Strata

Population Summary				M&V Sample		
Sampling Stratum	Number of Project (N)	Ex Ante Claimed Gross Savings, Therms	Therm Weights	N	Ex Ante Therms	Sampled % of Population
1	3	574,091	0.354	3	574,091	100%
2	4	516,278	0.318	4	516,278	100%
3	21	532,011	0.328	11	333,735	63%
TOTAL	28	1,622,380	1.000	18	1,424,104	88%

Source: Navigant analysis of Nicor Gas tracking database (5-31-2012 data extract)

The overall sample of 18 projects account for 1,424,104 therms of ex ante gross savings (88% of gross savings impact claim from program population). Table 2-3 provides a profile of the 15 sites randomly selected from the impact sample for on-site M&V. Also shown are the end-use measure technology types. The 15 onsite projects account for 1,370,896 therms of ex ante gross savings (84% of gross savings impact claim from program population). Details of the sampling approach are provided in the Appendix 5.4.

³ Each program year, the confidence and precision of the *ex post* estimates will be better than a target of 90/20, respectively, with a three-year overall precision and confidence target of 90/10. If fewer but larger projects participate than estimated in program and evaluation planning, smaller sample sizes can achieve 90/10 results in a given year.

Table 2-3. Profile of the Gross Impact M&V On-Site Sample by Strata

On-Site Sample				
Sampling Stratum	Number of Sites	Measure Types	Ex Ante Gross Savings (Therms)	Sampled Therms % of Population
1	3	Burner Replacement, Regenerative Combustion Furnace, Regenerative Thermal Oxidizer (RTO)	574,091	100%
2	4	Burner/Economizer Replacement, Boilers, RTO	516,278	100%
3	8	Burner/Economizer Replacement, Space Heater Setbacks Control, EMS, Ozone Laundry System, Tank Insulation, Condensate Return System	280,527	53%
TOTAL	15		1,370,896	84%

Source: Navigant analysis of Nicor Gas tracking database (5-31-2012 data extract)

Research Findings Gross Savings and Realization Rates:

Research findings for gross savings impacts were determined for the Custom Program based on detailed M&V for the 18 selected sample projects. Research findings gross realization rate (which is the ratio of the research findings gross savings to reported tracking savings) was estimated for the sample, by sampling stratum, and applied to the population of reported tracking savings for the Custom Program. The result is the research finding gross savings estimate for the Custom Program.

There are two basic statistical methods for combining individual realization rates from the sample projects into an estimate of research findings gross therms savings for the population when stratified random sampling is used. These two methods are called “separate” and “combined” ratio estimation.⁴ In the case of a separate ratio estimator, a separate gross therms savings realization rate is calculated for each stratum and then combined. In the case of a combined ratio estimator, a single gross therms savings realization rate is calculated directly without first calculating separate realization rates by stratum.

The separate ratio estimation technique was used to estimate research findings gross therms savings for the Custom Program. The separate ratio estimation technique follows the steps outlined in the California Evaluation Framework. These steps are matched to the stratified random sampling method that was used to create the sample for the program. The standard

⁴ A full discussion and comparison of separate vs. combined ratio estimation can be found in Sampling Techniques, Cochran, 1977, pp. 164-169.

error was used to estimate the error bound around the estimate of research finding gross therms, and the relative precision at 90% level of confidence was determined.

2.3.2 Net Program Savings

The net-to-gross analysis was conducted following completion of the telephone survey of program participants. Free ridership was calculated using an algorithm approach based on survey self-report data. The analysis relied on interview results from participating customers. The existence of participant spillover was examined using survey self-report data. The detailed methodology is provided in Appendix 5.2.

The program falls under the following condition from the NTGR Framework,⁵: *“For existing and new programs not yet evaluated, and previously evaluated programs undergoing significant changes — either in the program design or delivery, or changes in the market itself⁶ — NTGR ratios established through evaluations would be used retroactively, but could also then be used prospectively if the program does not undergo continued significant changes.”*

⁵ “Proposed Framework for Counting Net Savings in Illinois.” Memorandum March 12, 2010 from Philip Mosenthal, OEI, and Susan Hedman, OAG.

⁶ An example of a market change might be where baselines have improved significantly and the likely free riders are growing substantially because of it.

3. Evaluation Results

3.1 Impact Evaluation Results

This section presents the Custom Program impact evaluation results. Included in the impact evaluation results are a verification and due diligence procedure review and tracking system review. A gross impact parameter estimate and gross impact results are also provided below.

3.1.1 Verification and Due Diligence Procedure Review

Under this task, the Navigant team reviewed quality assurance/quality control (QA/QC) activities already in place to determine:

- Whether appropriate eligibility criteria have been adhered to and applications are appropriately completed and backed with supporting documentation;
- Whether the QA/QC activities are adequate and unbiased (e.g., are samples statistical, is there incorrect sampling that may skew results, etc.);
- Whether savings were calculated correctly compared with program assumptions, and project information entered in an accurate and timely manner in the tracking system; and
- Whether the data needed for program evaluation are being thoroughly captured by the program tracking system.

Overall, most of the quality assurance and verification procedures in place for the Custom Program, as outlined in the Rider 30 Program Portfolio Operating Plan and the program Participant Resource Handbook, provide a detailed quality control framework that meets or exceeds Navigant’s quality assurance expectations and meets national best practices. Key findings and recommendations from this task are provided in the Appendix 5.7.

3.1.2 Tracking System Review

The evaluation team performed an independent verification of the program tracking database to determine whether the database included an appropriate level of inputs, outliers, missing values, and potentially missing variables. The purpose of the tracking system review was to ensure that the program tracking system gathered the necessary to support future program evaluation and to allow program managers to monitor key aspects of program performance at regular intervals. As needed, the Navigant team developed recommendations for revisions in conjunction with its Verification, Due Diligence and Tracking Systems review.

Recommendations:

- The tracking system should provide pre and post-inspection findings and inspection dates, as well as the baseline and replacement/retrofit equipment specification.

- The tracking system should track measure information such as equipment cost, installation cost, and incremental cost, and the existing measure useful life. This information is useful for evaluating measure and program cost effectiveness analysis.
- The IC should ensure updates of the tracking system for the GPY2 evaluation includes Custom Program participant business/building type.
- The tracking system should include a field that describes what incentive category each project qualified for, and clarify how the assumptions were used to justify the estimated and paid incentives.
- The IC tracks program forecast or pipeline projects separately and updates the main tracking system when projects are approved for incentives. The program tracking system should be enabled to also track pipeline projects, including timelines.

3.1.3 Gross Program Impact Parameter Estimates

The program parameters used for evaluating the program are summarized in Table 3-1.

Table 3-1. GPY1 Gross Program Impact Parameter Estimates

Parameter	Value	Deemed or Evaluated?	Source Notes
Research finding Realization Rate on Ex-Ante Gross Savings	0.93	Evaluated	GPY1 EM&V analysis based on program tracking data and on-site verification
Measure Type and Eligibility	Varies	Evaluated	GPY1 EM&V analysis based on program tracking data
Measure Participation	42	Evaluated	GPY1 EM&V analysis based on program tracking data
Project participation	28	Evaluated	GPY1 EM&V analysis based on program tracking data
M&V Sample	18	Evaluated	GPY1 EM&V analysis based on program tracking data
Gross Savings per Measure	Custom	Evaluated	GPY1 EM&V analysis based on program tracking data and on-site verification

Source: Navigant analysis

3.1.4 Gross Program Impact Results

This section provides the gross impact findings based on results from the engineering file review and on-site verification activities.

The results of the sample-based research findings gross realization rate by stratum are summarized in Table 3-2. The relative precision at a 90% level of confidence is provided in

Table 3-3. The therm-weighted mean research finding sample gross realization rate (RR) was 0.93. Details of the M&V approach and the gross impact realization rate estimates by project are provided in the Appendix 5.2.

Table 3-2. Gross Impact Realization Rate Results for the Custom Sample

Sampling Stratum	Sample-Based Ex Ante Gross Savings (Therms x 1000)	Sample-Based Research Findings Gross Savings (Therms x 1000)	Sample-Based Research Findings Gross Realization Rate ⁷
1	574	600	1.05
2	516	466	0.90
3	334	278	0.83
Total	1,424	1,345	0.93

Source: Navigant analysis

Table 3-3. Gross Therms Realization Rates and Relative Precision at 90% Confidence Level

Sampling Stratum	Relative Precision at 90% Level of Confidence	Low	Mean	High	Standard Error (±)
1	0%	1.05	1.05	1.05	-
2	0%	0.90	0.90	0.90	-
3	7%	0.77	0.83	0.89	0.06
Overall Therm RR	2%	0.90	0.93	0.95	0.02

Source: Navigant analysis

The sample stratum research findings gross realization rates were applied to the population strata to achieve the program level research findings gross savings as shown in Table 3-4.

⁷ These are sample weighted therm realization rate values rounded to 2 digits. Direct application to the ex ante gross savings (to get sample research findings gross savings) will produce rounding differences.

Table 3-4. Gross Parameter and Savings Estimates at the Program Level by Stratum

Sampling Stratum	Program Ex Ante Gross Savings (Therms x 1000)	Program Research Findings Gross Savings (Therms x 1000)	Program Research Findings Gross Realization Rate
1	574	603	1.05
2	516	466	0.90
3	532	441	0.83
Total	1,622	1,510	0.93

Source: Navigant analysis

The research findings mean gross realization rate of 0.93 was applied to the program reported ex ante gross savings to achieve the program level research findings gross savings, as summarized in Table 3-5.

Table 3-5. Gross Parameter and Savings Estimates at the Program Level

Nicor Gas Custom Program	Paid Incentives	Projects	Ex Ante Gross Energy Savings (Therms x 1000)	Research Findings Gross Energy Savings (Therms x 1000)	Research Findings Gross Realization Rate
Total	\$1,015,210	28	1,622	1,510	0.93

Source: Navigant analysis

3.1.5 Net Program Impact Parameter Estimates

Table 3-6 provides the net program impact parameter estimates.

Table 3-6. GPY1 Research Finding Net Impact Parameter Estimates

Parameter	Value	Deemed or Evaluated?	Source Notes
Participant Surveys	13	Evaluated	Participant CATI responses
Free-ridership	0.47	Evaluated	GPY1 EM&V analysis based on participant CATI responses
Spillover	0.0	Evaluated	GPY1 EM&V analysis based on participant CATI responses
Research finding overall NTGR Ratio	0.53	Evaluated	GPY1 EM&V analysis based on participant CATI responses

3.1.6 Net Program Impact Results

Table 3-7 provides an overview of the number of respondents to the participant telephone survey in comparison to the program population. The NTGR was estimated at the project level

for each respondent. The net impact evaluation methodology and scoring approach can be found in the Appendix 5.2.

Table 3-7. Profile of GPY1 Participants Interviewed for Net Impact Estimates

Population Summary		Participants Interviewed			
Number of Project (N)	Ex Ante Gross Energy Savings (Therm x 1000)	n	Ex Ante Gross Energy Savings (Therm x 1000)	Participant Projects % of Population	Participant Therms % of Population
28	1,622	13	1,252	46%	77%

Source: Navigant analysis of participant telephone survey responses

Navigant calculated the program research findings net savings by multiplying the research findings gross savings estimate by the program research findings NTGR. Table 3-8 provides the program gross savings and the net savings for the Custom Program. The relative precision at 90% confidence level is provided in

Table 3-9. A weighted NTGR of 0.53 was estimated for the Custom Program at a relative precision of $\pm 9\%$ at a 90% confidence level.

Table 3-8. GPY1 Program Gross and Net Energy Savings Estimates

Nicor Gas Custom Program	Ex Ante Gross Savings (Therms x 1000)	Program Research Findings Gross Savings (Therms x 1000)	Research Findings Gross Realization Rate	Research Findings Net Energy Savings (Therms x 1000)	Research Findings Net-to-Gross Ratio
Total	1,622	1,510	0.93	801	0.53

Source: Navigant analysis

Table 3-9. NTG Ration and Relative Precision at 90% Confidence Level

Project Population (N=28)	NTGR Interviews (n=13)	NTGR Sample (n=13)	Relative Precision (\pm %)	Low	NTGR (Mean)	High
28	13	13	9%	0.48	0.53	0.58

Source: Navigant analysis of participant telephone survey responses

The relatively lower overall weighted NTGR of 0.53 compared to the initial planning NTGR of 0.80 is due to the low rating by most respondents to the question regarding the Custom Program influence relative to all other factors. Close to 80% of respondents rated the Custom Program influence below a 50% factor. For instance, projects NG0-014, NG0-016, and NG0-031

contributed significantly to the overall sample gross savings, but received low program influence ratings, thus affecting the impact of the weighted NTGR estimate.

Comparing program planning net therms savings with evaluation estimated net therms savings, the evaluation team determined that Nicor Gas achieved only 68% of the initial planned savings for the Custom Program, as shown in Table 3-10.

Table 3-10. GPY1 Program Net Energy Savings Vs. Planned Net Savings

Nicor Gas Custom Program	Net Therms Achieved (Therms x 1000)	GPY1 Planned Net Therms (Therms x 1000)	% Net Therms Achieved
Total	801	1,170	68%

Source: Navigant analysis

The Navigant team assessed the progress of the Nicor Gas Custom Program by comparing impact results from the Rider 29 program to the Rider 30 GPY1 impact results. Table 3-11 compares the Rider 29 and Rider 30 GPY1 Custom Program gross and net impact parameters.

Table 3-11. Custom Program Results from Rider 29 and Rider 30 GPY1

Program Result	Rider 29	Rider 30 (GPY1)	R30/R29
Ex Ante Gross Therms (x 1000)	315	1,622	515%
Research Finding Gross Therms (x 1000)	315	1,510	479%
Research finding Gross Realization Rate ⁸	1.00	0.93	93%
Ex Ante Net Therms (x 1000)	236	1,298	549%
Research finding Net Therms (x 1000)	236	801	339%
Net-to-Gross Ratio	0.75	0.53	71%
Participation	9	28	311%
Incentives Paid (\$)	205,823	1,015,210	493%

Source: Rider 30 Evaluation analysis, and Nicor Rider 29 Custom Incentive Program report.

⁸ It should be noted that zero field verification on-site visits were conducted during Rider 29 by the Navigant team. The Rider 29 NTG ratio of 0.75 was rather based on planning estimate.

The program experienced a significant increase in participation during the Rider 30 GPY1 period compared to the Rider 29, rising 211% above the Rider 29 level. The program achieved an over 415% increase in gross savings (1,622,380 therms) in GPY1 compared to the Rider 29 (315,231 therms). Net savings increased over 239% increase from 236,423 therms to 800,541 therms.

3.2 Process Evaluation Results

The process evaluation results are organized by the process research questions that are grouped by process themes. The primary data sources for the process evaluation included the telephone survey with 11 survey participants and in-depth interviews with market actors and implementation staff. The surveys were conducted in October through December, 2012. In addition to the aforementioned surveys, Navigant also conducted surveys with five participating trade allies. The results of these surveys are summarized below, while detailed results can be found in the appendix.

3.2.1 Has the program been successful in recruiting additional participants?

Finding

The Custom Program in the Rider 30 GPY1 period achieved significant progress in recruiting additional participants. In all, 28 projects participated in GPY1 compared to nine projects during Rider 29. Although the Custom Program did not meet its GPY1 participation target of 43 projects, the program in GPY1 exceeded its planning gross savings goal by 11%, and an increase of 415% of gross savings compared to the Rider 29 program.

Recommendation

- Establish a mechanism that will minimize the application verification process for prospective and past customers.

3.2.2 How has the program changed its marketing and outreach strategies since Rider 29? Has the program been successful in recruiting additional trade allies?

Finding

Navigant found that significant effort has been made to improve on the program marketing and outreach activities to both trade allies and participants since the beginning of Rider 30. Notable among them is the continuous recruitment of trade allies and organizing trade ally meetings and training. Although customers were not contacted directly during the Rider 29 cycle, information gathered from program staff and from the current Rider 30 GPY1 participant telephone survey provides a strong indication that the contractor/trade ally marketing channel is being well utilized by the program, followed by the Nicor Gas website, and also through emails.

From the 11 respondents of the GPY1 participant survey, 36% of participants heard about the Custom Program for the first time through a discussion with a contractor or a trade ally, 36% through a colleague, friend, or word of mouth, and 18% through a Nicor Gas Account Manager. One of the eleven participants reported learning of the program through a Nicor Gas representative. Figure 3-2 illustrates these findings in detail.

Comparing with the specific details of the ways that customers reported they have seen or learned about the program, the highest was contractors/trade allies (73%), the Nicor Gas website (64%), e-mails (64%), newsletters (45%), and from Nicor Gas Account Managers (36%). Other methods were through direct contact by Nicor Gas or RSG energy outreach staff (36%), or through a colleague, friend, or family member (27%).

During Rider 29, there were 1,000 registered trade allies. The IC did a commendable job in recruiting trade allies to the program, increase the total registered trade allies to 4,169. The majority of respondents (82%) used a contractor for their project. When asked to rate how important it is that their contractor is a program trade ally, on a scale from zero to ten, where zero is “not at all important” and ten is “very important”, no respondents mentioned trade allies are very important but 18% of respondents reported a rating from 7 to 8. An additional 27% gave a rating from 4 to 6, but 45% of respondents gave a rating from 0 to 3.

Recommendation

- The program should continue to improve on dissemination of marketing and outreach materials to increase program awareness through emails, bill inserts and newsletters.
- Nicor Gas should explore the added value of registering trade allies to the program and whether having trade allies increases customer participation. In the event that promoting trade ally status increases program participation, Nicor Gas should emphasize these findings to the trade allies to encourage promotion of the program.

3.2.3 Are customers satisfied with the program? In what ways can the program improve the customer experience?

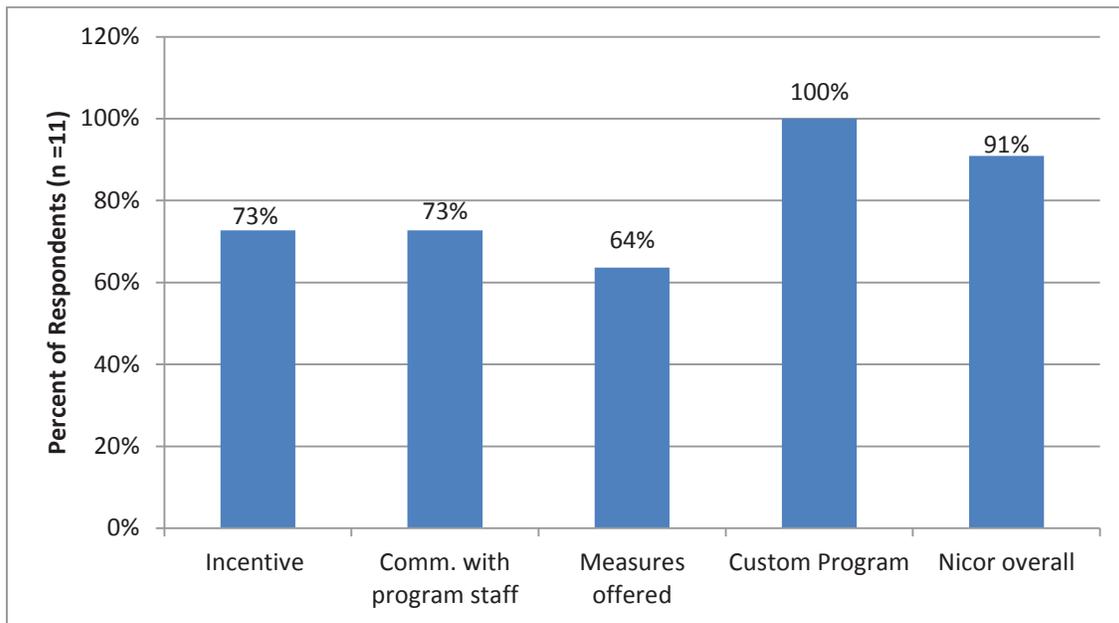
Finding

All 11 (100%) respondents to the participant survey indicated they were satisfied with their participation in the Custom Program (the majority gave ratings from 9 to 10). Most customers (73%) reported being satisfied with the incentive amount. When asked to rate their satisfaction with communications with the program staff, 73% reported being satisfied with the communications with the Custom Program staff. Customer satisfaction with the program attributes is reported in Figure 3-1.

When asked if they plan to participate in the Custom Program again in the future, the majority (73%) of participants responded in the affirmative, and the remaining (27%) indicated they

may participate again in the future. Although most (64%) of participants could offer no recommendations for improving the program, of those who did, 18% called for better communication and improvement in program information, and another 18% called for simplifying the application process. One customer mentioned the program should provide better terminology of the terms in the application papers, and said a lot of the terms are hard to understand. It should be noted that this information is currently provided on Nicor Gas' website.

Figure 3-1. Satisfaction with Program Attributes



Source: Participant survey

Recommendation

- The program should continue to work on simplifying the application process, including using more common terminology and the ability to submit program applications online.
- The IC should follow up with those customers (pending participant authorization for Navigant to release their contact information) that indicated that they are interested in future participation to explore whether those customers have particular projects in mind.

3.2.4 Are trade allies satisfied with the program? In what ways can the program improve the trade ally experience?

Finding

All five trade allies surveyed were satisfied with the program and its role in their businesses. Some participants indicated that the program has become an asset to their sales pitch and in some instances influenced customers' to undertake necessary works.

Although trade allies are generally satisfied with the program, three trade allies indicated that they would prefer to have a broader acceptance of certain types of equipment and energy saving methods incorporated into the program. Four participants indicated that the current incentive levels were adequate. However, the same participants indicated that they were dissatisfied with the equipment qualification process, and the metering documentation required to achieve program approval.

Participants also unanimously agreed that the program has given them an increased level of customer service without compromising services in other areas of their business. All but one participant indicated that they would be interested in utility led focus group sessions to help improve the program, and discuss an optimal level of incentive offerings.

Recommendation:

- The IC and Nicor Gas should consider a review of the measures that are being implemented through the Custom Program. In certain instances, it may be possible to include these measures in the Business Energy Efficiency Rebate Program.

3.2.5 Is the referral process between the Custom program and other programs, such as the Nicor Gas Business Energy Efficiency Rebate program and Nicor Gas Small Business Energy Savings program, working well? Can program coordination be improved?

Finding

From program staff interviews and program documentation, Navigant established that customer referral is happening between the Custom Program and the Small Business and Business Rebate Programs. However, Navigant could not establish how many projects were referred during the GPY1 period. There is inadequate information or a database of the referral projects and what appears to be a lack of coordination between utility programs to streamline the referral process.

Recommendation

- The Custom Program through coordination with other Business programs should create a central database system where referral projects are stored and can be accessed by the program staff and the respective program implementation contractors.

3.2.6 Is the program successfully sharing information with ComEd? Are program staff sufficiently documenting projects with electric and natural gas savings to enable both utilities to properly account for project savings?

Finding

Coordination with ComEd’s efficiency programs is recognized by both ComEd and Nicor Gas staff as an excellent opportunity for customer referrals to both gas and electric measures and an

opportunity to “leverage economies of scale”. All referral activities are presently tracked and accounted for by Nicor Gas IC in Monthly Referral Reports that show the total number of referrals coming from and going to each utility; however they are not subsequently flagged in the program tracking database.

In addition to having an established referral process, staff from both utilities (Nicor Gas and ComEd) participate in outreach events, such as seminars and meetings with trade allies in order to promote both utilities’ programs and additional opportunities for trade allies. Although the IC did indicate that marketing and outreach activities have increasingly been shared between Nicor Gas and ComEd, additional co-branding of marketing material would be beneficial.

Recommendation

- Marketing material should be sufficiently co-branded with Nicor Gas , ComEd, and IC branding to ensure that customers are made aware of all available opportunities for improving efficiency among their electric and gas measures. In addition to co-branding, trade allies should be made aware of available electric measures that that may be applicable to gas customers.
- The IC should establish a means of tracking referral projects in the program tracking database in order to properly quantify the program savings that can properly accounted for.

4. Findings and Recommendations

4.1 Key Impact Findings and Recommendations

As shown in Table 4-1, savings verification of the GPY1 Custom Program found that research findings gross energy savings were approximately 7% lower than ex-ante gross savings reported in the implementation contractor’s (IC’s) tracking system, resulting in a realization rate of 0.93 (realization rate = evaluation research findings gross / ex-ante gross from the tracking system). Table 4-1 provides the evaluation research findings net energy savings based on a calculated net-to-gross ratio (NTGR) of 0.53.

Table 4-1.GPY1 Natural Gas Savings Estimates

Category	Nicor Gas Energy Savings (Therms)
Ex Ante Gross Savings	1,622,380
Ex Ante Net Savings	1,297,904
Research Findings Gross Savings	1,510,285
Research Findings Net Savings	800,451
Verified Net-to-Gross Ratio	0.53

Navigant Analysis of Nicor Gas tracking database (10/06/2012 data extract)

The mean research findings gross realization rate for the Custom Program was 0.93 at ±2% relative precision at a 90% confidence level. A NTGR of 0.53 was estimated for the Custom Program at a relative precision of ±9% at a 90% confidence level.

The primary impact findings and recommendations are as follows:

Finding: Navigant’s program tracking system review indicates that additional information is needed to support future program evaluations and possibly allow program managers to monitor key aspects of program performance at regular intervals.

Recommendations:

- The IC should consider updating the tracking system for the PY2 evaluation to include participant business or facility type.
- The IC should consider including additional fields in the tracking system for information on baseline selection to indicate whether the implemented measure is a replace on burn-out (ROB) or early replacement/retrofit (RET) scenario.
- The tracking system should include measure information such as equipment cost, installation and incremental cost, equipment age or estimated equipment

end of useful life. This information is useful for evaluating measure and program cost effectiveness.

- The IC tracks program forecast or pipeline projects separately and updates the main tracking system when projects are approved for incentives. The program tracking system should provide pipeline projects, including timelines.

Finding: Customers or their trade allies do not submit adequate information on the operating condition and input parameters for savings estimates, and measure specifications. During the on-site M&V and subsequent follow-up review, the evaluation team spent a significant amount of time reviewing and obtaining sufficient project information from the customer or IC to enable us to sufficiently establish the condition of installed equipment to develop savings estimations. Significant adjustments were applied to the operating conditions for some projects including; NG01-001, NG01-004, NG01-005, NG01-006, and NG01-015. The projects with the lowest relative realization rates were; NG01-061, NG01-012, and NG01-002, with realization rates of 0.64, 0.42, and 0.62 respectively.

Recommendation:

- Verification of net claimed savings is greatly aided when thorough documentation of baseline and baseline conditions are provided, including:
 - a. Pre-existing equipment and operation description,
 - b. energy savings assumptions and methodologies,
 - c. estimated equipment remaining useful life from pre-approval application form, when applicable,
 - d. standard maintenance practices and history, and
 - e. Inspection results.
- While the IC is collecting this information to some extent, Navigant stresses the importance of sufficient project documentation to accurately portray the program’s selection of baseline conditions for custom projects.
- Nicor Gas should continue to encourage all customers receiving incentives through the Custom Program to participate in the CATI survey. Navigant will work with the IC in reaching out to program participants prior to initiating either participant or trade ally surveys.

Finding: A relatively lower overall weighted NTGR of 0.53 was achieved compared to initial program planning NTGR of 0.80. This is due to a lower rating by the majority of survey respondents when asked to assign a percentage to the Custom Program’s influence relative to all other factors regarding their decision to implement the measures/project.

Recommendation:

- The program should continue to assess the opportunities to reduce free ridership among the Custom program participants. Although high free

ridership among custom project participants is not unusual, increasing awareness and the application screening process can help reduce free ridership.

4.2 Key Process Findings and Recommendations

The primary process findings and recommendations summarized below and organized by research question:

Has the program been successful in recruiting additional participants?

Finding

The Custom Program in the Rider 30 GPY1 period achieved significant progress in recruiting additional participants. In all, 28 projects participated in GPY1 compared to nine projects during the Rider 29. Although, the Custom Program did not meet its GPY1 participation target of 43 projects, the program in GPY1 exceeded its planning gross savings goal by 11%, and an increase of 415% of gross savings compared to the Rider 29 program.

Recommendation

- The IC should establish a mechanism that will minimize the application verification process for prospective and past customers.

How has the program changed its marketing and outreach strategies since Rider 29? Has the program been successful in recruiting additional Trade Allies?

Finding

Navigant found that significant effort has been made to improve on the program marketing and outreach activities to both trade allies and participants since the beginning of Rider 30. Notable among them is the continuous recruitment of trade allies and organizing trade ally meetings and training. Although customers were not contacted directly during the Rider 29 cycle, information gathered from program staff and from the current Rider 30 GPY1 participant telephone survey provides a strong indication that the contractor/trade ally marketing channel is being well utilized by the program, followed by the Nicor Gas website, and also through emails.

During Rider 29, there were 1,000 registered trade allies. The IC did a commendable job in recruiting trade allies to the program, increase the total registered trade allies to 4,169. The majority of respondents (82%) used a contractor for their project. When asked to rate how important it is that their contractor is a program trade ally, on a scale from zero to ten, where zero is “not at all important” and ten is “very important”, no respondents mentioned trade allies are very important but 18% of respondents reported a rating from 7 to 8. An additional 27% gave a rating from 4 to 6, but 45% of respondents gave a rating from 0 to 3.

Recommendation

- The program should continue to improve on dissemination of marketing and outreach materials to increase program awareness through emails, bill inserts and newsletters.
- Nicor Gas should explore the added value of registering trade allies to the program and whether having trade allies increases customer participation. In the event that promoting trade ally status increases program participation, Nicor Gas should emphasize these findings to the trade allies to encourage promotion of the program.

Are customers satisfied with the program? In what ways can the program improve the customer experience?

Finding

All 11 (100%) respondents to the participant survey indicated they were satisfied with their participation in the Custom Program (the majority gave ratings from 9 to 10). Most customers (73%) reported being satisfied with the incentive amount; while 64% reported being satisfied with the incentivized measures/equipment offered by the program. When asked to rate their satisfaction with communications with the program staff, 73% reported being satisfied with the communications with the Custom Program staff. Customer satisfaction with the program attributes is reported in Figure 3-1.

Recommendation

- The program should continue to work on simplifying the application process, including using more common terminology and the ability to submit program applications online. In addition to the above, continue to give examples of completed application fields may give the applicant a better idea of the level of detail required.
- The IC should follow up with those customers (pending participant authorization for Navigant to release their contact information) that indicated that they are interested in future participation to explore whether those customers have particular projects in mind.

4.2.1 Are trade allies satisfied with the program? In what ways can the program improve the trade ally experience?

Finding

All five trade allies surveyed were satisfied with the program and its role in their businesses. Some participants indicated that the program has become an asset to their sales pitch and in some instances influenced customers' to undertake necessary works.

Although trade allies are generally satisfied with the program, three trade allies indicated that they would prefer to have a broader acceptance of certain types of equipment and energy saving methods incorporated into the program. Four participants indicated that the current incentive levels were adequate.

Participants also unanimously agreed that the program has given them an increased level of customer service without compromising services in other areas of their business. All but one participant indicated that they would be interested in utility led focus group sessions to help improve the program, and discuss an optimal level of incentive offerings.

Recommendation:

- The IC and Nicor Gas should continue to review the measures that are being implemented through the Custom Program. In certain instances, it may be possible to include these measures in the Business Energy Efficiency Rebate Program.

Is the referral process between the Custom program and other programs, such as the Nicor Gas Business Energy Efficiency Rebate program and Nicor Gas Small Business Energy Savings program, working well? Can program coordination be improved?

Finding

From program staff interviews and program documentation, Navigant established that customer referral is happening between the Custom Program and the Small Business and Business Rebate Programs. Referrals are reported to Nicor Gas on a weekly, monthly and quarterly basis. However, Navigant could not establish how many projects or the potential savings referred during the GPY1 period.

Recommendation

- The Custom Program through coordination with other Business programs should create a central database system where referral projects are stored and can be accessed by the program staff and the respective program implementation contractors.

Is the program successfully sharing information with ComEd? Are program staff sufficiently documenting projects with electric and natural gas savings to enable both utilities to properly account for project savings?

Finding

Coordination with ComEd’s efficiency programs is recognized by both ComEd and Nicor Gas staff as an excellent opportunity for customer referrals to both gas and electric measures and an opportunity to “leverage economies of scale”. All referral activities are presently tracked and accounted for by Nicor Gas’ IC in Monthly Referral Reports that show the total number of referrals coming from and going to each utility; however they are not subsequently flagged in the program tracking database.

In addition to having an established referral process, staff from both utilities (Nicor Gas and ComEd) participate in outreach events, such as seminars and meetings with trade allies in

order to promote both utilities' programs and additional opportunities for trade allies. Although the IC did indicate that marketing and outreach activities have increasingly been shared between Nicor Gas and ComEd, additional co-branding of marketing material would be beneficial.

5. Appendix

5.1 Glossary

5.2 Detailed impact results

As of May 31, 2012, the Nicor Gas Custom Program reported estimated ex-ante gross savings of 1,742,478 therms (1,400,675 therms, ex ante net), through participation of 28 projects⁹.

Table 5-1 provides details of the reported gross savings estimate for the Custom Program compared with the initial program planning estimates. The Custom Program in GPY1 exceeded its gross planning savings goal, achieving 111% of goal, and based on only 65% of its participation goal. The 28 participating projects earned \$1,015,210 total incentives.

Table 5-1. GPY1 C&I Custom Program Participation and Savings vs Program Goals

Nicor Gas Custom Program	Participation Count			Ex Ante Gross Therms Savings			
	GPY1 Projects	GPY1 Program Goals	% Goal Achieved	GPY1 Gross Therms	GPY1 Gross Therms Goals	% Therms Achieved	Incentives Paid
Total	28	43	65%	1,622,380	1,462,195	111%	1,015,210

Source: Navigant analysis

Table 5-2 provides a list of reported installed measures and ex ante gross savings. Overall, 42 measures were installed by 28 participants to achieve 1,622,380 therm ex ante gross savings. The majority of measure types implemented were burner/economizer replacements (accounts for 31% of gross savings), regenerative thermal oxidizer measures (27% of gross savings), and boiler/furnace installations (18%).

⁹ Measures marked as “paid” in the 10-06-2012 tracking data extract were assumed to have met program eligibility requirement, and were included in the PY1 population for the ex ante gross impact analysis.

Table 5-2.GPY1 Custom Program Participation and Savings by Measure

Consolidated Measure Technology Type	Measure Count	Project Count	Ex-Ante Claimed Savings	
			Ex Ante Gross Therms	% Therms
Burner/Economizer Replacement	8	5	506,205	31%
Regenerative Thermal Oxidizer	3	3	436,622	27%
Boiler/Furnace Installation	12	3	299,242	18%
Ozone Laundry System	2	2	16,025	1%
Setbacks Control on Space Heaters	1	1	68,619	4%
Destratification Fan	1	1	4,024	<1%
EMS	5	5	27,320	2%
Tank Insulation	1	1	9,350	1%
Condensate Return System	1	1	73,724	5%
Replace Water/Space Heaters	6	4	113,319	7%
Heat Exchanging Grease Traps	1	1	993	<1%
Replace Laminator	1	1	66,938	4%
TOTALS	42	28	1,622,380	100%

Source: Navigant analysis of tracking database (5-31-2012 data extract)

The research findings gross realization rates for the 18 sampled projects are presented in Table 5-3. The mean research findings sample gross realization rate was 0.93.

Table 5-3. Gross Impact Realization Rate Results for the Selected Custom Sample – by Project and Strata

Sampled Project ID	Sample-Based Ex Ante Gross Savings (Therms)	Sampling Strata	Ex Ante-Based Therms Gross Impact Weights by Strata	Sample-Based Research Findings Gross Savings (Therms)	Application - Specific Research Findings Gross Therms Realization Rate	Weighted Research Findings Gross Therms Realization Rate by Strata
NG01-005	250,262	1	0.44	231,082	0.92	1.05
NG01-026	143,064	1	0.25	143,064	1.00	
NG01-016	180,765	1	0.31	225,956	1.25	
NG01-014	129,752	2	0.25	113,241	0.87	0.90
NG01-004	126,105	2	0.24	95,724	0.76	
NG01-015	125,421	2	0.24	114,294	0.91	
NG01-031	135,000	2	0.26	143,175	1.06	
NG01-010	14,217	3	0.04	10,421	0.73	0.83
NG01-006	68,619	3	0.21	47,939	0.70	
NG01-001	83,520	3	0.25	67,920	0.81	
NG01-061	4,024	3	0.01	2,574	0.64	
NG01-022	5,061	3	0.02	5,477	1.08	
NG01-012	9,350	3	0.03	3,942	0.42	
NG01-029	73,724	3	0.22	75,289	1.02	
NG01-011	22,012	3	0.07	17,154	0.78	
NG01-052	48,912	3	0.15	43,302	0.89	
NG01-021	3,303	3	0.01	3,730	1.13	
NG01-002	993	3	0.00	619	0.62	
TOTAL	1,424,104	-	-	1,344,903	0.94	0.93

Source: Navigant analysis

The mean research finding gross realization rate for the sample was applied to the population to achieve the program level research finding gross savings discussed in section 3 of the report.

5.2.1 Detailed NTGR Calculations

Net Program Savings

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

For GPY1, the net program impacts were quantified from the estimated level of free-ridership and participant spillover. Quantifying free-ridership requires estimating what would have happened in the absence of the program. A customer self-report method, based on data gathered during participant telephone interviews, was used to estimate the free-ridership for this evaluation. The existence of participant spillover was quantitatively examined by identifying spillover candidates through questions asked in the participant telephone interviews. If response data provided evidence participant spillover and the participant was willing to have a follow-up interview by an engineer, Navigant attempted to estimate the spillover impacts.

Once free-ridership and participant spillover has been estimated the NTGR is calculated as follows:

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

Basic Rigor Free-Ridership Assessment

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

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

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

Standard Rigor Free-Ridership Assessment

Additional survey batteries examine other project decision-making influences including the vendor, age, and condition of existing equipment, corporate policy for efficiency improvements and so on.

Participant Spillover

For the GPY1 Custom Program evaluation, a battery of questions was asked to identify spillover candidates and to encourage spillover candidates to participate in a follow-up interview by an engineer to quantify spillover savings. Below are paraphrased versions of the spillover questions that were asked:

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

If the response to question 2 was given a score of 7 or higher, we judged the respondent to be a spillover candidate. Unfortunately, due to the low response rate that the Custom participant survey received, Navigant was unable to identify any participants who experienced spillover as a result of their participation in the program. In PY2, we will continue to attempt to identify participants who experienced spillover, and will ask them the following additional questions:

4. What was the first measure that you implemented?
 - a. Why did you purchase this equipment without the incentive available through the Custom Program?
5. What was the second measure that you implemented?
 - a. Why did you purchase this equipment without the incentive available through the Custom Program?
6. Thank you for sharing this information with us. We may have follow-up questions about the equipment you installed outside of the program. Would you be willing to speak briefly with a member of our team?

All respondents who answer “yes” to question 6 indicate that they would be willing to speak with a member of our team and will be contacted by an engineer. The follow-up engineering interview will attempt to confirm that spillover had occurred and the type of equipment involved, and estimate the energy savings.

NTGR Scoring

The scoring approach used to calculate free-ridership from data collected through participant phone surveys is summarized in Table 5-4.

Table 5-4. Basic Net-to-Gross Scoring Algorithm for the GPY1 Custom Program

Scoring Element	Calculation
<p>Timing and Selection score. The maximum score (on a scale of 0 to 10 where 0 equals not at all influential and 10 equals very influential) among the self-reported influence level the program had for:</p> <ul style="list-style-type: none"> A. Availability of the program incentive B. Technical assistance from utility or program staff C. Recommendation from utility or program staff D. Information from utility or program marketing materials E. Endorsement or recommendation by a utility account rep 	Maximum of A, B, C, D, and E
<p>Program Influence score. “If you were given a TOTAL of 100 points that reflect the importance in your decision to implement the <ENDUSE>, and you had to divide those 100 points between: 1) the program and 2) other factors, how many points would you give to the importance of the PROGRAM?”</p>	Points awarded to the program (divided by 10) Divide by 2 if the customer learned about the program AFTER deciding to implement the measure that was installed
<p>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 installed exactly the same equipment?” Adjustments to the “likelihood score” are made for timing: “Without the program, when do you think you would have installed this equipment?” Free-ridership diminishes as the timing of the installation without the program moves further into the future.</p>	Interpolate between No Program Likelihood Score and 10 where “At the same time” or within 6 months equals No Program score, and 48 months later equals 10 (no free-ridership)
Project-level Free-ridership (ranges from 0.00 to 1.00)	$1 - \text{Sum of scores (Program Components, Program Influence, No-Program)}/30$
GPY1 Project level Net-to-Gross Ratio (ranges from 0.00 to 1.00)	$1 - \text{Project level Free-ridership} + \text{Participant Spillover}$
Apply score to other end-uses within the same project?	If yes, assign score to other end-uses of the same project
Apply score to other projects of the same end-use?	If yes, assign score to same end-use of the additional projects

Research finding net program savings impacts were determined by reviewing 11 participant responses from the CATI survey. Shown in Table 5-5 is the profile of the net impact of the sample of respondents to the Custom Program CATI survey, in comparison with the Custom Program population.

Table 5-5. Profile of GPY1 Net Impact Sample

Population Summary		Participant Interviewed			
Number of Project (N)	Ex Ante Gross Energy Savings	n	Ex Ante Gross Energy Savings	Sampled Projects % of Population	Sampled Therms % of Population
28	1,622,380	13	1,251,981	46%	77%

Table 5-6 provides the program gross savings and the net savings for the Custom Program. The relative precision at a 90% confidence level is provided in Table 5-7. A NTGR of 0.53 was estimated for the Custom Program at a relative precision of $\pm 9\%$ at a 90% confidence level.

Table 5-6. GPY1 Program Gross and Net Energy Savings Estimates

Nicor Gas Custom Program	Ex Ante Gross Savings (Therms)	Program Research Findings Gross Savings (Therms)	Research Findings Gross Realization Rate	Research Findings Net Energy Savings (Therms)	Research Findings Net-to-Gross Ratio
Total	1,622,380	1,510,285	0.93	800,451	0.53

Source: Navigant analysis

Table 5-7. NTG Ratio and Relative Precision at 90% Confidence Level

Project Population (N=28)	NTG Interviews (n=13)	NTG Sample (n=13)	Relative Precision (\pm %)	Low	NTGR (Mean)	High
28	13	13	9%	0.48	0.53	0.58

Source: Navigant analysis of participant telephone survey responses

5.3 TRM Recommendations

None are applicable for this program.

5.4 Sampling Details

Gross Impact M&V Sample

For the GPY1 program year, a statistically significant sample based on 90/20 confidence/precision level for program-level savings was drawn for the gross savings

verification.¹⁰ The Custom Program tracking database extract dated 5/31/2012 was used to select 18 M&V sample points. Before final sample selection, the tracking extract was reviewed to check for outliers and missing values, and then matched to program reported energy savings.

Program-level custom savings data were analyzed by project size to inform the sample design. Projects were stratified at tracking record level using the ex ante gross therms savings. Records were sorted from largest to smallest custom energy savings claim, and placed into one of three strata such that each contains one-third of the program total ex ante gross energy savings. The 18 sample was drawn such that the sample represents the final population distribution by stratum: the three records in stratum 1 were selected, and the four records in stratum 2 were also selected and 11 records out of 21 were randomly selected in stratum 3. Each of the records selected represents just one Custom project. In all, 18 Custom projects (42 measures) were sampled.

Table 5-8 provides a profile of the gross impact verification sample for the Custom Program in comparison with the Custom Program population. The sample drawn is responsible for 1,424,104 therms of ex ante gross savings impact claim and representing 88% of the ex ante gross savings impact claim for the program population.

Table 5-8. Profile of GPY1 Gross Impact Sample by Strata

Population Summary				M&V Sample		
Sampling Strata	Number of Project (N)	Ex Ante Claimed Gross Savings, Therms	Therms Weights	n	Ex Ante Therms	Sampled % of Population
1	3	574,091	0.354	3	574,091	100%
2	4	516,278	0.318	4	516,278	100%
3	21	532,011	0.328	11	333,735	63%
TOTAL	28	1,622,380	1.000	18	1,424,104	88%

Source: Navigant analysis of Nicor Gas tracking database (5-31-2012 data extract)

Table 5-9 provides a profile of the 15 sites randomly selected from the impact sample for on-site M&V.

¹⁰ Each program year, the confidence and precision of the *ex post* estimates will be better than a target of 90/20, respectively, with a three-year overall precision and confidence target of 90/10. If fewer but larger projects participate than estimated in program and evaluation planning, smaller sample sizes can achieve 90/10 results in a given year.

Table 5-9. Profile of the Gross Impact M&V On-Site Sample by Strata

On-Site Sample				
Sampling Strata	Number of Sites	Measure Types	Ex Ante Gross Savings (Therms)	Sampled Therms % of Population
1	3	Burner Replacement, Regenerative Combustion Furnace, Regenerative Thermal Oxidizer (RTO)	574,091	100%
2	4	Burner/Economizer Replacement, Boilers, RTO	516,278	100%
3	8	Burner/Economizer Replacement, Space Heater Setbacks Control, EMS, Ozone Laundry System, Tank Insulation, Condensate Return System	280,527	53%
TOTAL	15		1,370,896	84%

Source: Navigant analysis of Nicor Gas tracking database (5-31-2012 data extract)

CATI Telephone Survey

A census was attempted for the CATI Telephone Surveys. A total of 28 Custom Program participants were contacted to participate in the Participant Survey. A total of 11 customers participated.

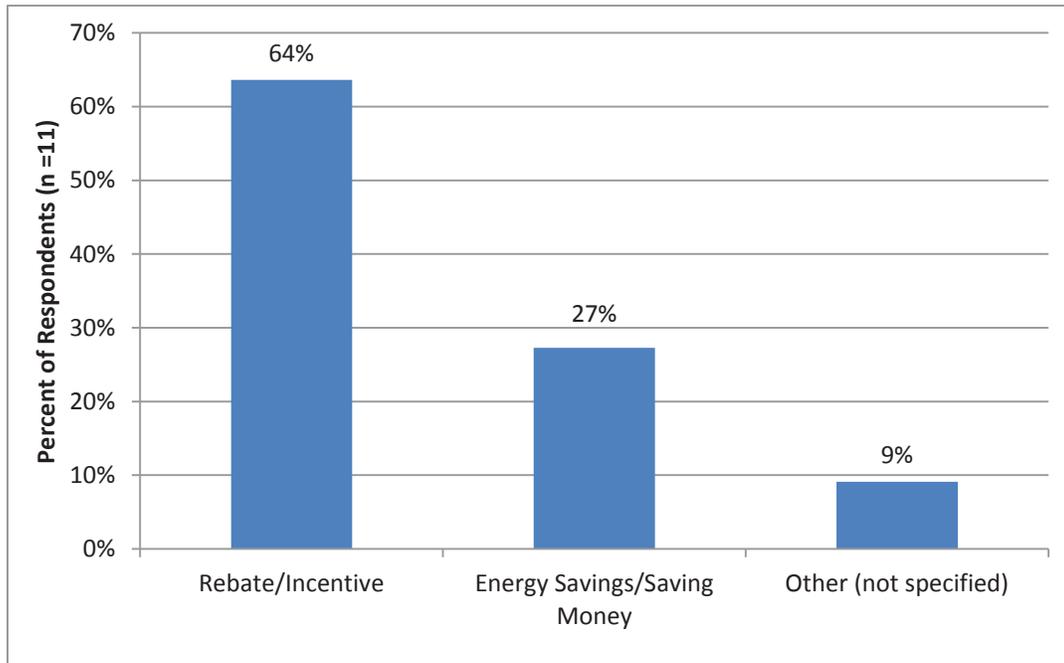
5.5 Additional Process Results

The following section describes addition process findings not presented in Section 3.2.

5.5.1 Program Benefits

Program participants were asked about what they perceive to be the main benefits of participation in the program, 64% of respondents said rebates/incentives, and 27% of respondents said energy savings/saving money. One respondent mentioned better quality/new equipment as an additional program benefit. Figure 5-1 illustrates customer responses of the main benefits to participating in the Custom Program.

Figure 5-1. Primary Benefit of Program Participation



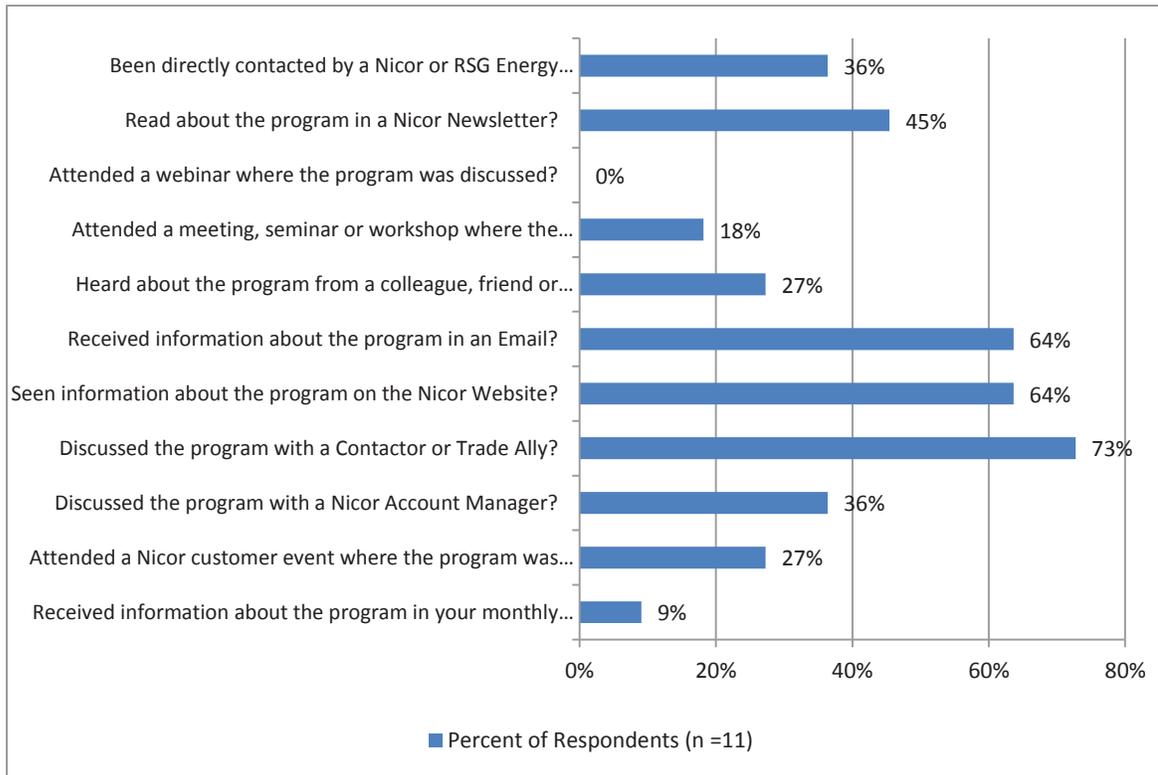
Source: Participant survey

When asked about the drawbacks of participating in the program, the majority of respondents (64%) reported there were no drawbacks, only one respondent said program paperwork was too burdensome. No customer mentioned issues with program incentives as a drawback to the program. When customers were asked whether the scope of their project was limited by the program’s incentive cap, 91% responded no; while the other one respondent said “don’t know”.

5.5.2 Program Marketing and Outreach Strategies

Comparing with the specific details of the ways that customers reported they have seen or learned about the program, the highest was contractors/trade allies (73%), the Nicor Gas website (64%), e-mails (64%), newsletters (45%), and from Nicor Gas Account Managers (36%). Other methods were through direct contact by Nicor Gas or RSG energy outreach staff (36%), or through a colleague, friend, or family member (27%). Figure 5-2 illustrates these findings in detail.

Figure 5-2. Method of Introduction to the Custom Program



Source: Participant survey

Participants were also asked how useful program marketing materials are in providing information about the program. Eight out of eleven (73%) of respondents felt the material was very useful, an additional 18% indicated the material was somewhat useful. When asked about the best ways to reach companies regarding energy efficiency opportunities, the most cited method was contact from Nicor Gas Account Manager (27% of respondents), telephone (27% of respondents), e-mail (18% of respondents), contractors/trade ally (9% of respondents). One customer also mentioned flyers/ads/mailings.

5.5.3 Administration and Delivery

As part of the GPY1 participant telephone survey, respondents were asked about their experiences with the program application process, and communication with the program or implementation staff.

Finding

More than half (55% of respondents) of the survey respondents reported that they themselves filled out the program application, and all those who responded (100%) indicated that the application clearly explained the program requirements and how to participate. When asked to rate the application process on a scale from zero to ten, where zero is “very difficult” and ten is “very easy”, 83% of respondents gave a score from 7 to 10. This high favorable response rate justifies the general participants’ position when many

answered that application paperwork is not burdensome or a drawback to program participation.

Only 36% of the survey respondents recalled placing telephone calls to the Custom Program Call Center, and 64% indicated they did not contact the Call Center. Of those who did, 100% reported very high levels of satisfaction with the Program Call Center. On a scale of zero to ten, where zero is “not at all satisfied” and ten is “very satisfied”, 50% were very satisfied with a rating of 10, and the others gave a rating of 8 and 9 on their satisfaction of contacting the program Call Center.

Recommendation

- There are currently no recommendations based on the above findings. Based on customer feedback, program administrative activity appears to be functioning.

5.5.4 Trade Ally Survey Results

This section summarizes the results from the telephone survey conducted with five Trade Ally participants of Nicor Gas’ Custom Program. The five trade allies were taken from the sample size of 15 participating members, all of whom were contacted. A total of 35 calls were made in order to reach the five completed surveys and two partially completed surveys. The surveys were conducted in November, 2012.

The trade ally survey component of the Custom Program evaluation focused on:

- Program marketing and outreach effectiveness
- Program Characteristics and Barriers to Participation
- Administration and delivery
- Program Satisfaction

The evaluation results are organized by the same process research questions that are grouped by the above themes. The primary data sources include the telephone survey with five trade allies.

Program Marketing and Outreach Effectiveness

Trade allies were asked a series of questions regarding program-specific marketing, marketing effectiveness, and suggested changes to reach a targeted audience. Participants were generally aware of other rebate programs, however did not actively market the Custom Program, or other incentive programs. Typically, these trade allies would refer their customers to websites only when the customer would enquire about rebate programs. Two trade allies claimed that half of their customers knew about certain programs, and the other half did not. The three remaining trade allies indicated that all of their customers were aware of rebate programs through Nicor Gas and other utilities. Three trade allies have been

aware of the program within the last two years while two others indicated that they typically seek out rebate programs depending on their customers' geographic location.

Of the five trade allies, two indicated that the level of marketing material was sufficient, with the remaining participants indicating that it "was too difficult to say". When probed further, two participants provided significant responses that highlighted the need for the Utility and trade allies to foster closer ties to better promote and serve the Custom Program. These trade allies determined that open forums, whether in-person or via webinars, would be beneficial in creating a dialogue that can make custom measures standardized. Both of these trade allies indicated that they would welcome and "play their part" in more joint efforts.

Program Characteristics and Barriers to Participation

Trade allies expressed varying responses to the Program's characteristics and determined how it could overcome barriers to participation. These included:

- Submitting the application online would improve and speed-up the entire process, in the hope that the process became more cost effective;
- Increasing the level of contact between utility representative and industrial manufacturing staff members;
- Increasing the Program details, including Nicor Gas' position with different types of custom measures and their savings, to be able to "hit the ground running" with participant customers;
- Reducing the amount of metering and verification required by Nicor Gas, and replacing it with standardized measures that are easier to contend with for the trade ally participant and customer.

Additionally, two trade allies discussed at length the change in their delivery style as a direct result of under-delivering on their and their customers' expectations. One particular trade ally indicated that they have stopped including type of equipment and potential savings specifics during initial meetings with new clients. On a number of occasions, they've been put in the position in which their calculations were not conservative enough, and that the equipment they promoted and incorporated into the project because of the Program, was not incented to the level originally anticipated. As a result, their time and effort had been wasted, and their customers became dissatisfied and discouraged.

Administration and Delivery

All five participants market the Program with their customers, one actively so; none of which however, actively drive the Program as its key plank, or target specific locations. Three of the five trade allies incorporate the Program into their proposals or into their sales

pitch, but all unanimously agreed that the Program was not the core reason why their customers used their services.

Of the five trade allies, four indicated that the timeframe taken in receiving pre-approval was adequate, and that less than thirty days was manageable. All trade allies indicated that the current timeframe to schedule an installation was also sufficient, albeit highly variable and dependent on participants and manufacturers.

One trade ally participant does offer loan arrangements, albeit offered to less than 5% of their total projects this year. Two survey participants indicated that they were offered training by Nicor Gas, and found it useful. When probed further, both participants agreed that another session would be beneficial to eliminate the current misunderstandings of the calculation process. Both participants agreed that a webinar, while convenient, it must be substantial involvement and interaction to have the same impact as a face-to-face forum.

Overall Trade Ally Findings

Overall, the interview results indicate that the Program has been successful in promoting custom energy efficient equipment implementation. Although it was difficult to determine whether the Program influenced their customers' adoption of energy efficient measures, the trade ally participants determined that it was an asset in their sale of energy efficient equipment. All Trade Allies agreed that adjustments could be made to improve the Program, particularly in the Program's level of marketing material and its distribution, as well as streamlining the approval process requirements. Furthermore, the metering and energy usage tracking information required by the utility was generally thought of as burdensome and rigorous, and required consultation with Trade Allies to improve this part of the Program. The majority of Trade Allies indicated their willingness to take part in webinars, or face-to-face forums to reach mutually beneficial arrangements that increases Program participation.

5.6 Detailed methodology

Gross Program Savings Impact Methodology

The objective of the impact evaluation was to verify the accuracy of the claimed GPY1 ex ante gross energy savings estimates in the Custom Program tracking database submitted to the evaluation team on May 31, 2012. The savings reported in the tracking database was evaluated using the following steps:

1. Engineering review at the measure-level for a sample of 18 project files, with the following subcomponents:
 - a. Engineering review and analysis of measure savings based on project documentation, default assumptions, and tracking data.

- b. Review application (if appropriate) of participant phone survey impact data (reported hours of use, reported baseline equipment) to projects in the 18 engineering review sample.
 - c. On-site verification audits at 15 project sites selected from the engineering review sample. Performance measurements included spot measurements and run-time hour data logging for selected measures.
 - d. Calculation of a research finding gross savings value for each project within sample, based on measure-level engineering analysis.
2. Prepare a detailed, site-specific impact evaluation report for each sampled site.
 3. Carry out a quality control review of the ex post impact estimates and the associated draft site reports and implement any necessary revisions.

Navigant's gross savings impact evaluation also incorporated the following additional information that may not have been feasible to incorporate in Final Application submittal or to collect during the pre-approval on-site inspections by the program implementer:

- a. Verification that measures are installed and operational, and whether or not the as-built condition will generate the predicted level of savings.
- b. Observed post-installation operating schedule and system loading conditions.
- c. A thorough validation of baseline selection, including appropriateness of a retrofit vs. replace on burnout claim.
- d. Development of stipulated and measured engineering parameters that contribute to the impact calculations.

Gross Program Savings On-site Verification

The objective of this element of the impact evaluation was to verify the accuracy of the GPY1 Nicor Gas ex ante gross savings estimates in the Custom Program tracking system. The savings reported in the Custom Program tracking system were evaluated using an M&V approach and a few instances of engineering desk review alone. To support this review, RSG provided project documentation in electronic format for each sampled project. Documentation included some or all scanned hardcopy application forms and supporting documentation from the applicant (invoices, measure specification sheets, and vendor proposals), pre-inspection reports and photos (when required), post inspection reports and photos (when undertaken).

Selection of IPMVP Approach

The research finding gross annual therm energy savings were assessed using an array of methods that are compliant with and defined by the International Performance Measurement and Verification Protocols (IPMVP). Flexibility was also considered in applying these protocols, with an eye towards deployment of a cost-effective M&V approach (i.e., reduction in uncertainty per evaluation dollar spent). Choices include IPMVP Option A (retrofit isolation: key parameter measurement), Option B (retrofit isolation all

parameter measurement), Option C (normalized annual consumption model or a fully specified regression model) and Option D (calibrated building energy simulation models).

Baseline Assessment

Development of baselines are a crucial step in accurately assessing custom measure research finding gross savings, and it is sometimes the case that the verified evaluation-defined baseline does not agree with the program-defined baseline. In each case, an investigation is needed to determine whether the existing equipment was at the end of its life and whether there is an efficiency increment among new equipment available in the market. If the equipment is at the end of its life and there is variation among new equipment efficiencies, then the savings should be based on the delta between the efficiency of the standard baseline equipment and program induced installation. If the equipment is at the end of its life (i.e., no evidence of program-induced early replacement) and there is little or no difference in efficiencies among new equipment choices, then the savings will essentially be zero. The evaluation acknowledges that early replacement activities would normally yield an array of annual energy savings throughout the effective useful life (EUL) of the new equipment, involving impacts in the first series of years that reflect differences in usage versus the pre-existing system, and in later years versus the likely equipment adoption in the absence of the program (i.e., two different baselines might be applied). However, this evaluation seeks to identify the predominant baseline condition, and derive a single (representative) year estimate of annual savings. The point here is to simply illustrate that baseline determination and analysis are an integral and extremely important part of custom impact evaluation.

Review Applications and Prepare Analysis Plans

For each selected application, an in-depth application review is performed to assess the engineering methods, parameters and assumptions used to generate all ex ante gross savings estimates. Application review serves to familiarize the assigned engineer with the gross impact approach applied in the program calculations. This also forms the basis for determining the additional data and monitoring needs that are required to complete each analysis and the likely sources for obtaining those analytic inputs. For most projects, on-site sources include interviews that are completed at the time of the on-site, visual inspection of the systems and equipment, spot measurements, and short-term monitoring.

Each review results in a formal analysis plan. Each plan explains the general gross impact approach used (including monitoring plans), provides an analysis of the current inputs (based on the application and other available sources at that time), and identifies sources that will be used to verify data or obtain newly identified inputs for the research finding gross impact approach. Sometimes initial plans are adjusted to reflect actual in-field conditions. Where warranted, the evaluation team refines the initial plan based on better/more information as each M&V site data collection and analysis effort develops.

Schedule and Conduct On-Site Data Collection

On-site surveys are completed for each of the customer applications sampled. All engineers who conduct audits are trained and experienced in completing inspections for related types of projects. Each carries all equipment required to conduct the planned activities. The engineer assigned to each project first calls to set up an appointment with the customer. The on-site audit consists of a combination of interviewing and taking measurements. During the on-site audit, data identified in the analysis plan is collected, including monitoring records (measured temperatures, equipment nameplate data, location of equipment, system operation sequences and operating schedules, and a description of site conditions that might contribute to baseline selection). For the three desk review projects, the data collection involved customer interviews to collect operating schedules, review invoices and verify installations.

Conduct Site-Specific Impact Calculations and Prepare Draft Site Reports

After all of the field data is collected, including any monitoring data, annual energy savings impacts are developed based on the on-site data, monitoring data, application information, and, in some cases, billing or interval data. Each program engineering analysis is based on calibrated engineering models that make use of hard copy application review and on-site gathered information surrounding the equipment installed through the program (and the operation of those systems).

Energy savings calculations are accomplished using methods that include short-term monitoring-based assessments, simulation modeling (e.g., DOE-2), bin models, application of ASHRAE methods and algorithms, analysis of pre- and post-installation billing and interval data, and other specialized algorithms and models. After completion of the engineering analysis, a site-specific draft impact evaluation report is prepared that summarizes the M&V plan, the data collected at the site, and all of the calculations and parameters used to estimate savings.

Quality Control Review and Final Site Reports

The focus of the engineering review is on the quality and clarity of the documentation and consistency and validity of the estimation methods. Each draft site report including calculations underwent extensive senior engineer review, providing feedback to each assigned engineer for revisions or other improvements. Each assigned engineer then revised the draft reports as necessary to produce the final site reports.

5.7 VDDTSR Memo-Final version

To: James Jerozal, Dan Rourke; Nicor Gas

Copy: Jennifer Hinman, David Brightwell; ICC

Randy Gunn, Julianne Meurice, Laura Agapay; Navigant

From: Nick Beaman and Charles Ampong; Navigant

Date: July 31, 2012

Re: Verification, Due Diligence and Tracking System Review of Nicor Gas Rider 30 Business Custom Incentive Program

This document provides the results from Navigant’s verification and due diligence review of the quality assurance, program tracking, and savings verification procedures of the Nicor Gas Business Custom Incentive Program (Custom Program), during the Rider 30 program’s first year. Navigant reviewed application documentation for four projects, most of which were boiler measures. The verification and due diligence recommendations are based on findings from interviews with program staff and the implementation contractor (IC), documentation review and comparing the Business Custom program’s activities to national best practices. The primary areas of inquiry of this task were to determine:

- Whether appropriate eligibility criteria have been adhered to and applications are appropriately completed and backed with supporting documentation;
- Whether the QA/QC activities are adequate and unbiased (e.g., are samples statistical, is there incorrect sampling that may skew results, etc.);
- Whether savings were calculated correctly compared with program assumptions, and project information entered in an accurate and timely manner in the tracking system; and

- Whether the data needed for program evaluation are being thoroughly captured by the program tracking system.

Overview of Findings

Verification and Due Diligence

Overall, most of the quality assurance and verification procedures in place for the Business Custom program, as outlined in the Rider 30 Program Portfolio Operating Plan, and the Business Custom program’s Participant Resource Handbook provide a detailed quality control framework that meets many aspects of national best practices.

The Business Custom program relies heavily on active trade ally participation to recruit customers. The program implementation contractor (Resource Solutions Group—RSG) utilizes field representatives (i.e. Outreach Leads and Specialists) to facilitate the recruitment and building relationships with trade allies to encourage active participation in the program. Customer participation in the program has been impressive and trending upward, as the program gains traction in the market place (from the year end 5/31/2012 tracking database, 28 applications were approved and received incentives payment, achieving 111% savings compared to program PY1 goals).

The Business Custom program’s Resource Handbook provides adequate guidelines for baseline selection with regard to age, condition, and replacement plans for the existing equipment. Some additional questions or information may need to be collected for projects pre-approval. Navigant has included recommendations about additional information for program staff to collect in order to help substantiate the program’s influence on the customer’s decision-making and the applicable baseline for a custom project.

The Business Custom program’s application form¹¹, available on the program’s website, provides clear instructions for application and measure qualification and required supporting documentation in order to qualify for an incentive through the Business Custom program. Navigant verified, through project file reviews, that some critical baseline conditions or facility information (operating hours, load curves, etc.) are not adequately submitted by customers/contractors during the pre-approval stages. Additionally, adding a requirement on applications that a customer participate (if contacted) in all evaluation activities, such as telephone surveys, may be beneficial to the program. Navigant recommends including a clause in the Terms and Conditions section of the application stating: “Participants agree to cooperate with the Nicor Gas Energy Efficiency Program or Program representatives in evaluation activities, including, but not limited to telephone surveys and on-site inspections.”

After reviewing program documentation and the sample project files, we did not find any guidelines or standardized procedures for conducting on-site inspections. Navigant observed two different on-site inspection forms are used by the program IC. We did not find project files that contained both

¹¹ http://www.nicorgasrebates.com/images/pdfs/nicor_nonresrebate_custom.pdf

pre and post inspection results. It is not clear from this finding whether the IC is adequately completing both pre and post onsite inspection for all projects as required.

Reporting and Tracking

Navigant reviewed the data fields and data input into the Business Custom program tracking database (year end 5/31/2012 extract). Navigant observed lack of a comprehensive and a centralized tracking database for the Business Custom program. Two different versions of spreadsheets exist for tracking program paid projects. Although the tracking database captures the vital information for predicting program's participation and claimed savings, Navigant found differences in the data inputs for many projects. Some of the customer names do not match, savings measure descriptions are different, customer tracking IDs are different, while one version of the tracking database tracks the timeline of each project and more easily pinpoint dates when projects passed important milestones in the process, the other version provides better description of the installed efficient equipment.

Navigant reviewed the application documentation of four paid projects, and compared findings with corresponding entries in the program tracking system. Overall, it appears the IC adequately reviews paper applications and accurately transfers information into the program tracking database. The IC did not track additional information such as pre- and post-inspection findings, inspection dates, measure useful life, make and model and the condition of inspected baseline equipment. The IC did not transfer into the tracking system the project's cost and incremental cost information recorded in the Engineering Approval Review Forms. The cost information will be useful for the Business Custom program benefit/cost analysis. For some projects, it was unclear how the program approved categories for incentive calculation was applied.

Summary of Recommendations

The Navigant EM&V team offers the following recommendations that the program staff could implement to enhance current quality assurance and verification activities:

- Verification of net claimed custom project savings is greatly aided when there is thorough documentation of baseline conditions, participant decisions and decision makers, key program and trade ally influences, energy savings assumptions and methodologies, equipment age, estimated equipment remaining useful life, standard maintenance practices, choice of baseline, and inspection results. While the IC is collecting this information to some extent, we stress the importance of sufficient project documentation to accurately portray the program's selection of baseline and influence on the custom project. Navigant recommends that program staff consider implementing standardized procedures and forms for assembling sufficient project documentation where possible.
- The IC should develop standardized guidelines for conducting pre and post inspections, and should adopt a common inspection form/checklist for all projects. The IC should also ensure all pre and post inspections are completed (including checklists), and findings are documented and reported appropriately in the tracking system.
- The IC should consider using a single tracking database that records all customer and project documentation.

- The IC should develop more standardized forms for the Custom Program customer satisfaction surveys and trade ally surveys, and should record responses in the program tracking database.
- Clear guidelines should be developed if the Business Custom program will proceed with the parallel path evaluation. The program staff and the evaluation team should agree on a reasonable cutoff savings value for applications to qualify for the parallel path evaluation. This framework should guarantee delays in the pre-approval process are curtailed, as is the goal of the parallel path evaluation.

Navigant offers the following recommendations to improve on data tracking system and reporting for the Business Custom program:

- The Business Custom program should have a centralized and comprehensive tracking system for tracking all project documentation. As the program continues to gain penetration in the marketplace, a more robust tracking system is required that should combine paid and pipeline projects, track the specifications of both baseline and retrofit/replacement equipment, provide timelines of project application, and real time routine program and financial reporting for program staff. Search a system will improve staff efficiency and enhance program evaluation efforts.
- The IC should consider including additional information in the tracking system such as the baseline and replacement/retrofit equipment specification, pre and post-installation inspection findings, the inspection completion date, photographs of measures during inspection, measure useful life, and the project cost and incremental cost information usually recorded in the Engineering Approval Review Forms.
- The tracking system should include a field that describes what incentive category each project qualified for, and clarify how the assumptions were used to justify the estimated and paid incentives.
- The IC tracks program forecast or pipeline projects separately and updates the main tracking system when projects are approved for incentives. The program tracking system should be enabled to also track pipeline projects, including timelines.

Data Collection

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

- Interview program stakeholders
- Review Program application forms
- Review program documentation (Resource Handbook, marketing materials, etc.)
- Project files engineering desk review
- Review program operating procedures
- Review program tracking system
- Compare program activities and materials to national best practices

Interview with Program Stakeholders

Navigant conducted a telephone interview with representatives from Nicor Gas, WECC, and RSG, to review the program's accomplishments and challenges to date. The telephone interview included prepared question topics such as program administration, program outreach and marketing, program delivery mechanisms, customer satisfaction, and implementation challenges. At the conclusion of each interview, Navigant provided extra time to discuss any questions or raise additional topics that were not already covered in the telephone interview.

Review Program Documentation

The program documentation reviewed by Navigant included the Rider 30 program's Operating Plan¹², Implementation Policies and Procedures¹³, Nicor Gas Compliance Filling¹⁴, Quality Assurance/Quality Control Plan¹⁵, Participant Resource Handbook¹⁶. Other documentations included reviewing program tracking database (year-end extract 5/31/2012), measure applications forms, monthly program delivery reports, and marketing and outreach materials. The program's operating plan and the implementation policies clearly describes the program logic and key performance indicators, and provides a detailed QC/QA framework for the IC to verify measure and customer eligibility, review customer applications, conduct onsite inspections, and process customer incentives. The program handbook provides to applicant, a sample of completed Business Custom Incentive Application, with detail application best practices aimed to streamline the application approval process. The marketing and outreach documents reviewed included marketing fact sheets and press releases, trade ally management and outreach plans, and outreach and orientation meeting documents. Navigant found the implemented marketing and outreach activities to be generally consistent with the program's marketing plan and goals.

Navigant reviewed the methodologies outlined in the Business Custom program's Resource Handbook for calculating baseline and retrofit measure energy usage and cost estimates, and compared the manual's methodology with the engineering desk reviews from the selected sample of projects. Navigant found where applicable that the methodologies in the sample projects were applied consistently with the approach and assumptions prescribed in the Resource Handbook.

Project Files Engineering Desk Review

Navigant's evaluation team selected four custom projects provided by the IC for the engineering desk review. The projects selected had Project Codes: NG01-031, NG01-010, NG01-015 and NG01-016. Navigant's engineering review of the project files found that the documentation submitted by applicants was generally a complete response to program requests. The project files included a project summary (Engineering Approval Review Form), itemized invoices, savings calculation assumptions and methodology, installed equipment specification sheets, utility billing information, incentive reservation application and payment notification, and pre- and post-installation inspection checklists. Navigant reviewed the savings calculation approaches included in the project files and compared entries in the project files to corresponding entries in the program tracking database for accuracy and completeness.

12 Nicor Gas Rider 30 EEP Program Portfolio Operating Plan (Version 1.1)

13 Nicor Gas Business Custom Incentive Program Policies and Procedures (August 1, 2011)

14 Nicor Gas EEP 2011-2014 Revised Plan Filed Pursuant to Order Docket No. 10-0562 (May 24, 2011)

15 Business Custom Incentive & Business EE Rebate Programs QC/QA Plan. Statement of Work deliverable – Task 2 (8/1/2011)

16 2011-2014 Business Custom Incentive Program Handbook - Tools and Resources for Navigating the Application Process

the Business Custom program requests information from applicants regarding baseline equipment age and condition or baseline selection, Navigant found that customers do not adequately provide information about the baseline equipment during the pre-approval stages. For example, for project NG01-015, not enough information about the measure operating schedules and loads were provided. The customer could have been asked to clarify the daily or weekly operating hours, boiler maintenance schedule, percentage of boiler output toward process applications instead of building heat, boiler load variation throughout the year and whether there were predictable peaks in usage or whether a one month of data was enough to provide a good estimate of load throughout the year.

For project NG01-016, questions exist about customer motives; whether the customer would have installed the heat exchanger instead of the regenerative thermal oxidizer without the Nicor Gas Business Custom program. It appears the customer had a motive to install the Regenerative Thermal Oxidizer (RTO) with a goal to control volatile organic compound (VOC) emissions. The customer could have been asked to clarify the choice of heat exchanger with 50% baseline efficiency without considering standard or code minimum efficiency requirement. It appears the choice was influenced by economics/cost effectiveness but not on technical or operational considerations. Also, we observed that two different methodologies are presented to calculate savings. Although both methods provide similar results, the implementer should choose one in order to promote consistency and transparency.

Similar questions exist for project NG01-031. The customer needed to clarify the estimated remaining useful life of the existing boilers, equipment condition at time of replacement, lack of information on the facility schedule and water usage to enable determination of boiler part load and operating hours, as an alternative to using the gas bills to determine the operating profile.

Navigant believes the opportunity for parallel path evaluation of baseline and project pre-approval is a reasonable approach to at least resolve some of the risk issues associated with pre-approval assumptions and savings estimations.

Review of Program Operating Procedures and Tracking System

Navigant examined the Business Custom program's operating procedures as outlined in the program operating plan and the program handbook. Below is the Business Custom program customer process flow presented in Figure 5-3. Navigant identified the following as key elements leading to final project approval and incentive payment.

- Pre-Approval Application
- Pre-Installation Inspection
- Final Application
- Final Inspection and Approval
- Incentive Payment

Figure 5-3. Business Custom Program Customer Process Flow



Source: Nicor Gas Rider 30 EEP Program Portfolio Operating Plan

Pre-Approval Application

A customer (or contractor on behalf of the customer) enrolls in the Nicor Gas C&I Business Custom program by submitting a Letter of Interest, describing briefly the proposed project. The customer then completes and submits a pre-approval application together with the customer’s most recent utility bills, detailed manufacturers’ specification sheets for the proposed equipment installation (including size, type, make and model, and equipment performance information), itemized quotes from a contractor or vendor, project payback information, and calculations of estimated therms savings expected to be generated by the project.

The IC’s technical staff reviews the customer’s pre-approval application to determine if the project meets program eligibility requirements, including verifying that the proposed project is not eligible for incentives through the C&I Prescriptive Rebate program. If the project qualifies for the Business Custom program, the program staff calculates preliminary incentives and returns a Pre-Approval Notice to the customer. The customer must sign and return the Pre-Approval Notice – Statement of Receipt for funds reservation. Upon receiving the signed Statement of Receipt, the project is entered into the program’s tracking system and the IC schedules a pre-installation inspection with the program applicant. The IC reserves funds for 90 days following the signature date listed on the Pre-Approval Notice. A customer must meet all of the program requirements in order to qualify for program incentives.

Pre-Installation Inspection

After receiving the signed Statement of Receipt, the IC’s technical staff conducts a pre-installation inspection at the project site. The purpose of a pre-installation inspection is to document existing conditions of the measures at the project site. The program staff may also review the customer’s

application with the customer and its contractors. The program staff may review the customer's savings calculations and methodologies and request additional information if needed. A customer may begin project installation after the customer has successfully completed the pre-installation inspection and submitted any additional documentation requested by program staff.

Final Application

Once a custom project is installed and operational, a customer submits a final project application, notifying program staff that the project is ready for final inspection. A final project application includes supporting documentation such as equipment invoices, product specification sheets, and warranty information. Customers must submit final project applications within 30 days of project completion.

Post-Installation Inspection and Final Approval Notice

After receiving a final project application, program staff returns to the project site to conduct a post-installation inspection. The purpose of post-installations activities are to ensure the key performance indicators for the program are met through performing the quality assurance and quality control procedures documented in the program's operating plan. Program staff conducts 100% pre- and post-inspection for all custom installations to verify eligibility and operation of installed equipment. Upon satisfaction of the post-installation inspection, a customer receives a Final Approval Notice for its project and must sign and return the Statement of Receipt on the approval notice before incentive payment. Navigant verified two different inspection forms are used, and did not find project files that contained both pre and post inspection results. It is not clear from this finding whether the IC is adequately completing both pre and post onsite inspections for all projects as required.

Incentive Payment

After receiving the Statement of Receipt on a final approval notice, the program issues final incentive payment based on one of the following calculations, as outlined in the program's operating plan. Incentives are tiered based on achieved therm savings and also for those projects that do not qualify for the required project payback threshold: (i) \$0.75 per therm saved for projects with < 7,500 therms/year; (ii) \$1.0 per therm saved for projects with >7,500 therms/year; (iii) maximum per project of 30% of total project cost, or \$100,000 per project (whichever is less); (iv) maximum per site of \$100,000/year (June 1, 2011- May 31, 2012). Upon sending the incentive check to the customer, the program staff marks the project as "Paid" in the program tracking system.

Tracking System Review

Navigant reviewed the data fields and data input into the Business Custom program tracking database (year end 5/31/2012 extract). Two different versions of spreadsheets of the program tracking database were provided for review by the IC^{17,18}. Both versions of the tracking database capture the vital information for accurate and consistent tracking of the program's participation, claimed savings and incentive payment. We identified differences in the data inputs for both databases. Some of the customers' names do not match in description, savings measure description are different, customer tracking IDs are different, while one version of the tracking database tracks the timeline of each project and more easily pinpoint dates when projects passed important milestones in the process, the

¹⁷ RSG_R-30-Year.End.CustomerData.Totals-and-Reconciliation-5-31-12.xlsx

¹⁸ UPDATED-Custom Paid Projects through PY1_Measures_052812.xlsx

other version provides better description of the installed efficient equipment. Both versions of the tracking database did not track the baseline and efficient measure specifications including the make and model, efficiency, type and sizes. Navigant also observed the status of pipeline projects is tracked in a separate database by the IC. The lack of comprehensive and a centralized tracking database for the Business Custom program could be a source of possible data entry errors and create difficulty for program staff and the evaluation team to query project specific information.

Navigant reviewed the application documentation of four paid projects, and compared findings with corresponding entries in the program tracking system. Navigant verified that these projects were paid and the documentation included filled and signed application forms, itemized invoices, efficient measure specifications, incentive request worksheets, and copies of check authorizations. Overall, it appears in most cases, the IC adequately reviews paper applications and accurately transfers this information into the program tracking system. However, the evaluation team did not find additional project information in the program tracking database that would be useful for evaluation, such as pre- and post-inspection findings, inspection dates, measure useful life, make and model and the condition of inspected baseline equipment. The IC did not transfer into the tracking system the project's cost and incremental cost information recorded in the Engineering Approval Review Forms. The cost data would be useful for the program cost-benefit analysis.

For some projects, it is unclear how the program approved categories for incentive calculation was applied. We observed for example in the tracking system, project numbers NG01-012 and NG01-010 with therms savings of 9,350 and 14,217 respectively, according to the rules is likely to receive incentives of \$1.0/therm savings, instead they were paid \$6,707, and \$4,650 respectively. Also, it appears project NG01-031 did not receive additional payment after completion of the second phase of the measure installation where additional 79,900 therms savings was claimed (\$55,986 incentives was paid by 2/29/2012 for savings of 56,000 therms in the first phase of the project. This incentive amount remained unchanged in the final tracking database).

Benchmarking

To conduct the best practices benchmarking assessment, the evaluation team compared the program implementer's practices (shown as a bullet list) with the *Best Practices Self-Benchmarking Tool*¹⁹ from the *National Energy Efficiency Best Practices Study* (numbered items in *italic font*) for Custom programs. The benchmarking categories used were Quality Control and Verification, and Reporting and Tracking.

Quality Control and Verification

The custom program reaches nearly all best practice standards within the Quality Control and Verification elements detailed below.

¹⁹ See the Best Practices Self-Benchmarking Tool developed for the Energy Efficiency Best Practices Project: <http://www.ebestpractices.com/benchmarking.asp>

Table 5-10. Comparison of Implementation Contractor Practices to Best Practices Tool

ID	Best Practice	Score
1	Develop inspection and verification procedures during the program design phase.	Needs some improvement.
2	Provide technical assistance to help applicants through the application process.	Meets best practice.
3	Keep the application process and forms from being overly complex and costly to navigate while at the same time not being over-simplified.	Meets best practice
4	2. Develop a cadre of trade allies who can then assist customers through the process.	Meets best practice
5	3. Implement a contractor screening/certification/training process. 4.	Meets best practice
6	Require pre- and post-inspections and commissioning for all large projects and projects with highly uncertain baseline conditions that significantly affect project savings.	Needs some improvement.
7	6. Conduct inspections in a timely manner.	Needs some improvement.
8	Conduct either in-program measurement or measurement through an impact evaluation on the very largest projects and those that contribute most to uncertainty in overall program savings.	Meets best practice
9	7. Assess customer satisfaction with the product through evaluation.	Meets best practice

1. *Develop inspection and verification procedures during the program design phase.*

- The Business Custom program Resource Handbook mentions pre-approval and post-installation inspections are required, but the handbook does not specify the inspection and verification procedures. Navigant observed two different inspection forms are used with different data request or verified information. Navigant recommends standardized inspection procedures should be established and adopt a common inspection form or checklist for all projects.

2. *Provide technical assistance to help applicants through the application process.*

- The Business Custom program provides technical resources for customers to complete custom calculations on each project to determine the energy savings potential, payback horizon, and incentive amount.
- The IC is considering organizing workshops for Business Custom program application process and/or financial models/energy efficiency financing. The IC is also considering developing website content to demonstrate the application process for applicants.
- Navigant expects the IC's decision to collaborate with the program evaluation team to conduct parallel path evaluation before project approval will provide additional assistance to participants to complete their applications.

3. *Keep the application process and forms from being overly complex and costly to navigate while at the same time not being over-simplified.*
 - The Custom program participation procedures and documentation requirements are reasonable, given the complexity inherent in custom projects.

4. *Develop a cadre of trade allies who can then assist customers through the process.*
 - The Business Custom program relies heavily on active trade ally participation to assist in project referrals and customer recruitment as well as to assist customers with participation requirements. Ally participation has been impressive to date and the program is continually expanding its marketing and outreach efforts to recruit more trade allies.

5. *Implement a contractor screening/certification/training process.*
 - The Business Custom program sponsors Trade Ally Focus Group meetings to discuss the program and market opportunities. The program provides opportunity for trade allies to become members of Nicor Gas Contractor Circle, and ensures trade allies or contractors receive regular program updates.
 - The IC organizes training sessions on a monthly basis to provide training for new and existing trade allies or contractors. The IC is considering the possibilities for creating a certification/qualification component to trainings.

6. *Require pre- and post-inspections and commissioning for all large projects and projects with highly uncertain baseline conditions that significantly affect project savings.*
 - The Custom program requires pre and post-inspections for all projects regardless of size or baseline conditions. Commissioning is not required for custom projects.
 - Navigant observed none of the projects reviewed had records of both pre and post inspection checklists. This information was crucial for the evaluation team to verify program requirements on inspections were followed.

7. *Conduct inspections in a timely manner.*
 - It appears the IC conducts -inspections in a timely manner. However, the findings documented in the inspection checklists were not transferred into the program tracking system. Navigant recommends the IC should consider transferring pre- and post-inspection findings into the program tracking system.

8. *Conduct either in-program measurement or measurement through an impact evaluation on the very largest projects and those that contribute most to uncertainty in overall program savings.*
 - The program conducts EM&V for all projects including large and small projects. Navigant conducts an independent measurement and verification impact evaluation with special consideration given to the largest projects and those that contribute most to uncertainty in overall program savings. The program is looking at opportunities to coordinate with Navigant for parallel path evaluation of baseline and project pre-approval. This approach is hoped to minimize risk on assumptions and savings estimations ahead of program impact evaluation.

9. *Assess customer satisfaction with the product through evaluation.*

- Navigant is conducting an evaluation for the program that includes process evaluation and impact evaluation. Navigant’s process evaluation efforts will assess customer satisfaction with the Business Custom program.
- Navigant recommends the IC should include a clause in the Terms and Conditions section of the application stating “participants agree to cooperate with the Nicor Gas Custom Program representatives in evaluation activities, including, but not limited to telephone surveys and on-site inspections.”

Reporting and Tracking Benchmarking

The custom program reaches nearly all best practice standards within the Reporting and Tracking Benchmarking elements detailed below.

Table 5-11. Comparison of IC Reporting and Tracking Practices to Best Practices Tool

ID	Best Practice	Score
1	Define and identify key information needed to track and report early in the program development process	Needs some improvement.
2	Use automated or otherwise regularly scheduled notification to achieve close monitoring and management of project progress.	Needs some improvement.
3	Design program tracking system to support the requirements of evaluators as well as program staff.	Needs some improvement.
4	Verify accuracy of rebates, coupons, invoices to ensure the reporting system is recording actual product installations by target market	Meets best practice
5	Set reasonable and accurate expectations for energy savings and measure performance.	Meets best practice

1. *Define and identify key information needed to track and report early in the program development process*
 - The Business Custom program data requirements were defined early in the program development process, but the projects’ documentation are scattered in two or more tracking spreadsheets reports, making it difficult to search specific customer data. The IC should consider using a single tracking database that records all customer and project documentation.
2. *Use automated or otherwise regularly scheduled notification to achieve close monitoring and management of project progress.*
 - The program administrator (WECC) reports once a month to Nicor Gas on program status. The report highlights potential and realized energy savings, summarizes program key performance indicators and application and marketing challenges. This report does not appear to be automatically generated. A real time reporting system can be considered by the program administrator.
 - The IC tracks program forecast or pipeline projects separately and updates the main tracking system when projects are approved for incentives. The program tracking system should be enabled to also track pipeline projects, including timelines.

3. *Design program tracking system to support the requirements of evaluators as well as program staff.*
 - The tracking system does not allow real-time reporting of routine functions like monthly portfolio and program reports, and financial tracking. Navigant recommends automated reporting and web-based communications tracking should be considered, as the program gains penetration in the marketplace to increase staff efficiency. Data tracking is scattered in different spreadsheets, it appears the tracking system is well designed for use by program staff and review by program evaluators. The tracking system tracks vital information on customers and contractor, and impact data. Project timelines shown in the tracking system enables the program staff and the evaluation team to more easily pinpoint dates when projects passed important milestones in the application process.
 - The evaluation team recommends that the program staff consider including additional project information in the program tracking system, such as post inspection findings, inspection dates, make and model of inspected baseline and retrofit equipment, and measure life. The tracking system should also track the project cost and incremental cost information necessary for the program for benefit-cost analysis.
4. *Verify accuracy of rebates, coupons, invoices to ensure the reporting system is recording actual product installations by target market*
 - Customers are required, as part of the program terms and conditions, to submit copies of all invoices or other reasonable documentation of the costs associated with purchasing the incentivized equipment, and to allow program staff to conduct pre- and post-installation inspections.
 - As part of the application review process, technical staff of the IC compares invoices and purchase orders to the application information to confirm that the claimed measures were actually installed at the specified time.
5. *Set reasonable and accurate expectations for energy savings and measure performance.*
 - The Business Custom program has an estimate of expected savings, although it is difficult to accurately estimate what projects will apply for the program due to the nature of business custom programs. The program is supposed to conduct pre and post-installation inspections for all projects, and reviews potential energy savings and incentive levels prior to approving the customer to participate in the program.
 - The program requires applicants to determine the appropriate baseline as the basis for savings and incentive calculations. The program is working on establishing parallel path evaluation to review measure baseline and pre-approval applications, with the intent to minimize adjustments during the program impact evaluation.

5.8 Program Theory and Logic Model Review

Program Theory

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

5.8.1 Program Goals

The goal of the Custom Program is to produce long-term natural gas energy savings in the business sector by promoting the purchase and installation of custom measures that are not included in the Business Incentive Program by customers who are planning to purchase equipment, but would not have upgraded to high-efficiency equipment in the absence of the program.

5.8.2 Motivating Conditions/Barriers

Potential barriers for the program include a lack of awareness of energy efficiency opportunities, for both contractors and customers. Neither contractors nor customers may be aware of the availability and benefits of higher efficiency products and systems.

A secondary set of barriers include financial concerns, such as the increased incremental cost of more energy efficient measures and lack of financing for said measures.

5.8.3 Target Audience

The target audience for this program is business customers with more complex facilities who are planning to purchase new equipment and replace equipment in their existing business, who would benefit from a custom approach.

5.8.4 Desired Actions/Behaviors

The program encourages the purchase and installation of ad hoc, non-prescriptive high-efficiency measures, and will attempt to transform the commercial market by seeding the market for efficient gas measures. Savings will be achieved through the installation of custom efficient measures.

5.8.5 Strategies/Rationale

The main strategy of the Business Custom Program is to engage market actors, such as trade allies, to promote and deliver the program to Nicor Gas end-use customers. An outreach program targeting the trade allies will be developed, building on the relationships that were developed in the pilot year of the program and monitoring the market response to the program outreach efforts. The training and educating of trade allies increases the availability of contractors who understand the technologies that could be incentivized by the program. The program will offer incentives for efficient equipment to alleviate the barrier of higher purchase costs for customers.

5.8.6 Messages/Communications Vehicles

The Custom Program primarily relies on trade allies to promote the program to the end-use customers, and therefore much of the marketing of the program is focused on this group. The materials that will be provided to the trade allies include educational materials intended to be shared with their customers such as program marketing materials and application forms, and life cycle cost analysis and worksheets. These materials will be provided to the trade allies through mailing and emailing campaigns, focus groups, special events, meetings, and trainings.

Additionally, the program will undertake direct marketing to customers through coordination with the Nicor Gas Business Customer Support (BCS) team by creating simple messages for the BCS to present to customers. Also, the program website will provide all of the necessary information to

promote the program, including a program handbook designed to help customers determine their eligibility and complete the application process.

Program Logic

This section presents how the Business Custom Incentives program activities logically lead to desired program outcomes. Figure 5-4 presents the Nicor Gas Custom Program logic model diagram showing the linkages between activities, outputs, and outcomes, and identifying potential external influences. The diagram presents the key features of the program. The logic diagram presented here is at a slightly higher level than the tables in the report, aggregating some of the outcomes in order to provide an easier-to-read logic model.

The remainder of this chapter presents the resources, activities, outputs, outcomes, and associated measurement indicators associated with the Business Custom Incentives Program.

5.8.7 Resources

The ability of the Business Custom Incentives program to generate the outputs and outcomes likely to result in the program reaching its goals depends in part on the level and quality/effectiveness of inputs (resources) that go into these efforts. There are also external influences that can help or hinder achieving anticipated outcomes. Key program inputs and potential external influences are shown in Table 5-12.

Table 5-12. Program Inputs and Potential External Influences

Program Inputs
<ul style="list-style-type: none"> • Nicor Gas ratepayer funds • Nicor Gas staff resources • Implementer staff resources and experience • Utility knowledge of the target market
<hr/> <p>External Influences and Other Factors</p> <hr/> <ul style="list-style-type: none"> • Economic environment • Natural gas prices • Customer and trade ally awareness of energy efficiency options <hr/>

5.8.8 Activities

The purpose of the Custom Program is to educate and assist eligible non-residential customers with making their facilities more energy-efficient. The program will reach eligible customers through activities designed to generate energy savings over the longer term (see Table 2). These activities are as follows:

- Develop informational and marketing collateral
- Develop outreach to potential program participants
- Develop outreach to program trade allies
- Educate trade allies
- Assist participants with application process, pre-, and post-inspection visits
- Provide rebates for qualifying projects

Figure 5-4. Program Inputs and Potential External Influences

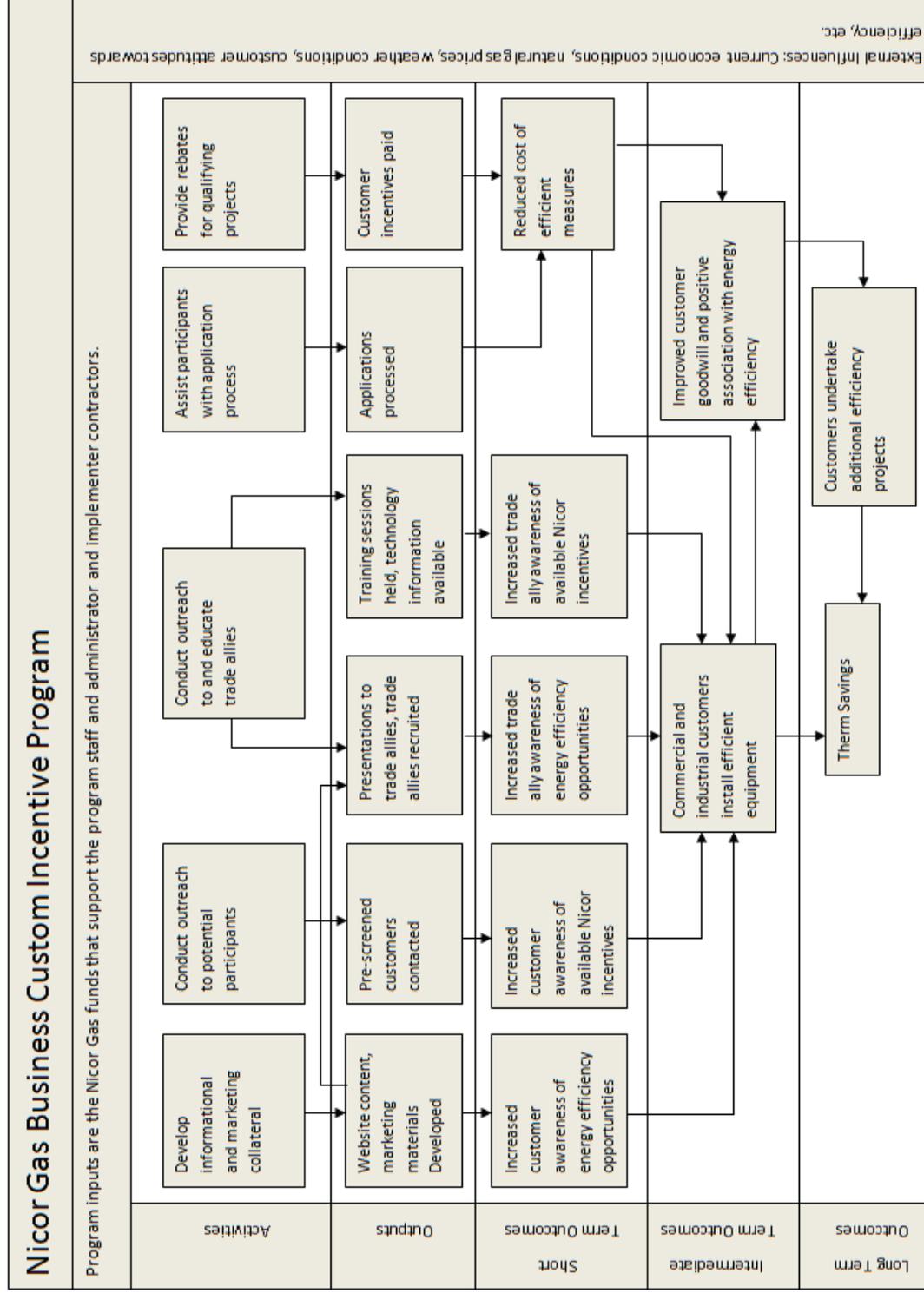


Table 5-13. Business Custom Incentives Activities

Develop informational and marketing collateral
<ul style="list-style-type: none"> • Update website with information on programs and informational materials
Develop outreach to program participants
<ul style="list-style-type: none"> • Identify eligible customers • Conduct outreach activities to pre-screened customers
Develop outreach to trade allies
<ul style="list-style-type: none"> • Develop materials to market program to potential trade allies • Participate in events such as industry trade shows and conferences
Educate trade allies
<ul style="list-style-type: none"> • Provide program training for all trade allies, including presentations • Prepare marketing materials to provide to trade allies for their customers, such as brochures.
Assist participants with application process, pre- and post-inspection visits
<ul style="list-style-type: none"> • Assist customers with the applications process • Conduct pre- and post-inspection visits where deemed appropriate
Provide rebates for qualifying projects
<ul style="list-style-type: none"> • Maintain energy savings and rebate calculators • Maintain tracking system to reserve and track incentives

5.8.9 Outputs, Outcomes, and Associated Measurement Indicators

It is important to distinguish between outputs and outcomes. For the purposes of this logic document, outputs are defined as the immediate results from specific program activities. These results are typically easily identified and can often be counted by reviewing program records. Outcomes are distinguished from outputs by their less direct (and often harder to quantify) results from specific program activities. Outcomes represent anticipated impacts associated with Nicor Gas’ program activities and will vary depending on the time period being assessed. An example would be therm savings. On a continuum, program activities will lead to immediate outputs that, if successful, will collectively work toward achievement of anticipated short, intermediate, and long-term program outcomes.

The following tables list outputs (Table 5-14) and outcomes (

Table 5-15), taken directly from the logic model, and associated measurement indicators. For each indicator, a proposed data source or collection approach is presented.

Table 5-14. Program Outputs, Associated Indicator and Potential Data Sources

Outputs	Indicators	Data Sources and Potential Collection Approaches
Customer outreach and recruitment	List of potential customers Number of customers contacted	Interviews with program staff Program records
Website content, informational pamphlets, print advertisements	Number and type of print materials developed. Content of website.	Interviews with program staff, electronic copies of print materials
Presentations to key trade allies, outreach to others	Number of presentations made. Presentation documents developed for meeting. Number of allies and auditors contacted	Interviews with program staff.
Training for trade allies, providing technical support	Number of training sessions held, technical information made available to trade allies	Interviews with program staff
Customer rebates	Number of rebates offered and amount.	Interviews with program staff Program tracking data

Table 5-15. Program Outcomes, Associated Indicators and Potential Data Sources

Outcomes	Indicators	Data Sources and Potential Collection Approaches
Short-Term		
Increased customer awareness and knowledge of efficiency programs	Percent of commercial and industrial customers aware of rebate Nicor Gas program	Customer surveys
Growing number of knowledgeable trade allies	Number of trade ally contacts made Number of participating trade allies	Interviews with program staff, trade allies
Customers are aware of the many potential efficiency projects	Number of participants	Interviews with program staff Tracking system
Reduced cost of efficient equipment	Percent of incremental cost paid by incentive	Program tracking data
Intermediate-Term		
Network of trade allies working to promote energy efficiency in commercial and industrial customers	Number of participating allies	Interviews with program staff Trade ally surveys Tracking system
Increased customer goodwill towards Nicor Gas and its programs	Customer satisfaction with incentive and experience	Customer surveys
Longer-Term		
Commercial and industrial customers install efficient equipment and receive rebates	Number of rebates issued, total therms saved	Program tracking data
Program participants undertake additional efficiency projects	Percent of customers installing efficient measures	Tracking data Customer surveys

5.9 Data Collection Instruments

5.9.1 Participant Survey

NICOR GAS BUSINESS CUSTOM INCENTIVE PROGRAM PARTICIPANT SURVEY – DRAFT July 31, 2012

Section	Topics	Questions
Screening		A0-A3c
Market Influencers	Who informed and influenced the incentive/rebate and incentive process and timing	MM1-MM3
Measure Loop	What were the steps in the incentive/installation process?	MS1-MS4
Free-ridership	Would customers have installed the equipment without the program?	N00-N27
Spillover	About what percentage of customers have installed additional energy efficient equipment without an incentive?	SP1-SP5
Satisfaction	To what extent was the program satisfactory for the participant?	S0-S12
Marketing and Outreach	How well did the program marketing and outreach influence the participant?	MK0-MK2
Benefits and Barriers	What did the participant perceive to be the benefits and barriers to the program?	B1a-B3
Feedback and Recommendations	What feedback and recommendations do the participants offer?	R1 –R2
Firmographics	Firm-specific data for characterization	F1-F7

INTRODUCTION

[READ IF CONTACT=1]

Hello, this is _____ from _____ calling on behalf of Nicor Gas. This is not a sales call. May I please speak with <PROGRAM CONTACT>?

Our records show that <COMPANY>installed<ENDUSE>, for which they received an incentive of <INCENTIVE AMOUNT>from Nicor Gas. We are calling to do a follow-up study about <COMPANY>'s participation in this incentive program, which is called the BusinessCustom Incentive Program. I was told you're the person most knowledgeable about this project. Is this correct? [IF NOT, ASK TO BE TRANSFERRED TO MOST KNOWLEDGEABLE PERSON OR RECORD NAME & NUMBER.]

This survey will take about 30 minutes. Is now a good time? [If no, schedule call-back]

[READ IF CONTACT=0]

Hello, this is _____ from _____ calling on behalf of Nicor Gas. I would like to speak with the person most knowledgeable about recent changes in heating, process, or other energy-related equipment for your firm at this location.

[IF NEEDED] Our records show that <COMPANY> installed <ENDUSE>, for which they received an incentive of <INCENTIVE AMOUNT> from Nicor Gas. We are calling to do a follow-up study about your firm's participation in this incentive program, which is called the Business Custom Incentive Program. 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 30 minutes. Is now a good time? [If no, schedule call-back]

SCREENING QUESTIONS

A0 Which of the following statements best characterizes your relation to <COMPANY>?

1. I am an employee of <COMPANY> (THIS CATEGORY SHOULD INCLUDE THE OWNER/PRESIDENT/PARTNER ETC. OF THE COMPANY.)
2. My company provides energy-related services to <COMPANY>
3. I am a contractor and was involved in the installation of energy efficient equipment for this project
97. OTHER, SPECIFY (PUT OWNER/PRESIDENT/PARTNER ETC. OF THE COMPANY IN 1)
98. DON'T KNOW
99. REFUSED

This survey asks questions about the energy efficiency upgrades for which <COMPANY> received an incentive at <ADDRESS>. Please answer the questions from the perspective of <COMPANY>. For example, when I refer to "YOUR COMPANY", I am referring to <COMPANY>. The following questions refer to the Business Custom Incentive Program, which may be referred to as "THE PROGRAM" throughout the survey. If you are not familiar with certain aspects of the project, please just say so and I will skip to the next question.

- A1. Just to confirm, between June 1, 2011 and May 31, 2012 did <COMPANY> participate in Nicor Gas' Business Custom Program at <ADDRESS>? (IF NEEDED: This is a program where your business received an incentive for installing one or more energy-efficient products.)
1. YES, PARTICIPATED AS DESCRIBED
 2. YES, PARTICIPATED BUT AT ANOTHER LOCATION
 3. NO, DID NOT PARTICIPATE IN PROGRAM
 97. (OTHER, SPECIFY)
 98. DON'T KNOW
 99. REFUSED

[SKIP A2 IF A1=1,2]

- A2. Is it possible that someone else dealt with the energy-efficient product installation?
1. YES, SOMEONE ELSE DEALT WITH IT
 2. NO
 98. DON'T KNOW

99. REFUSED

[IF A2=1, ask to be transferred to that person. If not available, schedule a call back. If available, go back to A1]

If **tran2** screen equals “no” then schedule a call back rather than terminate.
 (IF A2 = 2, 98 or 99, thank and terminate)

[IF A1=2,3,97,98,99: Thank and terminate. Record dispo as “Could not confirm participation”.]

Before we begin, I want to emphasize that this survey will only be about the energy efficient <ENDUSE> you installed through the Business Custom Incentive Program at <ADDRESS>.

A3. I'd like to confirm some information in Nicor Gas' database. Our records show that you installed the following <ENDUSE> through the Program. Is this correct?

- 1. YES
- 3. NO, DID NOT INSTALL
- 98. DON'T KNOW
- 99. REFUSED

IF A3=3,98,99: Thank and Terminate, Record Dispo as “Could Not Confirm Measures”

MEASURE MODULE

MM1 Who was the most influential in identifying and recommending that you install the <ENDUSE> project you completed through the Program?[DO NOT READ]

- 1. SELF
- 2. CONTRACTOR
- 3. ENGINEER
- 4. ARCHITECT
- 5. MANUFACTURER
- 6. DISTRIBUTOR
- 7. OWNER
- 8. NICOR GAS REPRESENTATIVE/PROGRAM STAFF
- 9. RSG STAFF
- 97. OTHER, SPECIFY
- 98. DON'T KNOW
- 99. REFUSED

MM2 And who informed you about the availability of an incentive through the Program?[DO NOT READ]

- 1. SELF
- 2. CONTRACTOR
- 3. ENGINEER
- 4. ARCHITECT
- 5. MANUFACTURER
- 6. DISTRIBUTOR

- 7. NICOR GAS ACCOUNT MANAGER
- 8. OWNER/DEVELOPER
- 9. PROJECT MANAGER
- 10. NICOR GAS REPRESENTATIVE/PROGRAM STAFF
- 11. RSG STAFF
- 97. OTHER, SPECIFY
- 98. DON'T KNOW
- 99. REFUSED

MM3 When did you install this <END USE> [IF NECESSARY, PROBE FOR BEST GUESS]

- a. Month [Precodes for Jan through Dec.]
- b. Year [Precodes for 2011 and 2012]

The following questions are about the <ENDUSE> installed through the Program.

REMOVED EQUIPMENT

MS1 Did the < END USE> you installed through the Program replace old or outdated equipment at this facility, or was it an addition of new equipment?

- 1. ADDITION OF NEW EQUIPMENT - DID NOT REPLACE ANYTHING
- 2. REPLACEMENT OF OLD OR OUTDATED EQUIPMENT
- 3. PARTIAL EQUIPMENT REPLACEMENT ON EXISTING EQUIPMENT
- 4. NO EQUIPMENT ADDED OR REPLACED – THIS WAS A TUNE-UP OR CONTROLS ADJUSTMENT
- 97. OTHER[SPECIFY]
- 98. DON'T KNOW
- 99. REFUSED

[SKIP TO N00, IF MS1=1,4, 98,99]

MS2. Approximately how old was the existing <END USE>? Range [1-100]

RECORD ESTIMATED AGE

- 98. DON'T KNOW
- 99. REFUSED

[ASK IF MS2=998]

MS2a. Was it? {READ Categories}

- 1. Less than 5 years old
- 2. At least 5 but no more than 10 years old
- 3. At least 10 but no more than 15 years old
- 4. At least 15 but no more than 20 years old
- 5. At least 20 but no more than 25 years old
- 6. More than 20 years old
- 98. DON'T KNOW
- 99. REFUSED

Early Replacement Questions

ER1. Would you say that the <END USE> you replaced was...[\[READ LIST\]](#)

1. Working with no need of repair
2. Working with need of *minor* repairs
3. Working with need of *major* repairs
98. DON'T KNOW
99. REFUSED

[ASK IF ER1= 2 or 3, ELSE SKIP TO ER4\]](#)

ER2. Could the <END USE> have been repaired to restore it to working condition?

1. YES
2. NO
98. DON'T KNOW
99. REFUSED

ER4. Using a likelihood scale from 0 to 10, where 0 is "Not at all likely" and 10 is "Extremely likely", if the custom program was not available, what is the likelihood that you would have replaced the <ENDUSE> in the next 12 months ?

- RECORD 0 to 10
98. DON'T KNOW
 99. REFUSED

[\[IF ER4<=5\]](#)

ER5. When do you think you would have replaced the <END USE>? [\[READ\]](#)

1. At least one year but less than two years
2. At least two years but less than three years
3. At least three years but less than four years
4. At least four years
98. DON'T KNOW
99. REFUSED

ER6. Using a similar scale, where 0 is "Not at all likely" and 10 is "Extremely likely", what is the likelihood you would have replaced the <END USE> with energy efficient <END USE> if the Custom program was not available?

- RECORD 0 to 10
98. DON'T KNOW
 99. REFUSED

ER7a. How often was maintenance required?

1. Weekly
2. Monthly
3. Quarterly
4. Annually

- 5. Bi-Annually
- 6. Less often than once every two years
- 7. Never
- 8. Other (Specify)
- 96. NEVER
- 98. DON'T KNOW
- 99. REFUSED

IF ER7A=NEVER then SKIP TO ER8

ER7aa. What type of maintenance?

- RECORD VERBATIM
- 98. DON'T KNOW
 - 99. REFUSED

ER7b. How often was major non-scheduled maintenance required?

- 1. Weekly
- 2. Monthly
- 3. Quarterly
- 4. Annually
- 5. Bi-Annually
- 6. Less often than once every two years
- 7. Never
- 8. Other (Specify)
- 98. DON'T KNOW
- 99. REFUSED

ER7bb. What type of major non-scheduled maintenance was required?

- RECORD VERBATIM
- 98. DON'T KNOW
 - 99. REFUSED

ER8. Can you provide recent/historical maintenance records?

- 1. YES
- 2. NO
- 98. DON'T KNOW
- 99. REFUSED

ER9a. How often did the old <END USE> fail (downtime for the past year)?

- 1. Weekly
- 2. Monthly
- 3. Quarterly

4. Annually
5. Bi-Annually
6. Less often than once every two years
7. Never
8. Other (Specify)
98. DON'T KNOW
99. REFUSED

ER9b. How was this (downtime) compared to previous years?

RECORD VERBATIM

98. DON'T KNOW
99. REFUSED

ER10. Using a scale from 0 to 10, where 0 is "Not satisfactory at all" and 10 is "Extremely satisfactory", how satisfactory was the performance of the old <END USE>?

RECORD 0 to 10

98. DON'T KNOW
99. REFUSED

ER11. How long would the old <END USE> have met the technical and performance needs of the facility?

1. Less than one year
2. At least one year but less than two years
3. At least two years but less than three years
4. At least three years but less than four
5. Four or more years

ER13. How many years do you think the old <END USE> would have lasted (without major repairs which may have led to replacement)?

1. Less than 1 year
2. At least one year but less than two years
3. At least two years but less than three years
4. At least three years but less than four
5. 4 or more years

98. DON'T KNOW

99. REFUSED

ER14. Do you have similar <END USE> of the same age or older still operating in this or any of your other facilities?

1. YES
2. NO

98. DON'T KNOW

99. REFUSED

[ASK IF ER14=Yes, ELSE SKIP ER17]

ER15. What is the average age of the similar <ENDUSE> that is still operating? [RECORD IN YEARS]_____ Range [1-100]

NUMERIC OPEN END

998. DON'T KNOW

999. REFUSED

ER16. Do you have line items set aside in a capital budget to replace any of the <END USE> that is still operating?

1. YES

2. NO

98. DON'T KNOW

99. REFUSED

ER16A. [ASK IF ER16=YES] When is the replacement planned? _____ [IF NECESSARY, PROBE FOR BEST GUESS]

a. Month [Precodes for Jan through Dec.]

b. Year [Precodes for 2012 and 2017]

97. After 2017

98. DON'T KNOW

99. REFUSED

ER17. Have you recently replaced any similar <END USE> of the same age or older that was operating in this or any of your other facilities, within the last twelve months?

1. YES

2. NO

98. DON'T KNOW

99. REFUSED

[ASK IF ER17=Yes, ELSE SKIP TO N00]

ER18. What is the age of the similar (operating) <END USE> that was removed recently? (LIST MULTIPLE AGES IF THERE ARE MULTIPLE BOILERS. SHOULD BE SAME AGE OR OLDER.) _____ Range [1-100]

998. DON'T KNOW

999. REFUSED

NET-TO-GROSS MODULE

I'd now like to ask a few questions about the <ENDUSE> you installed through the program.

N00 In deciding to do a project of this type, there are usually a number of reasons why it may be undertaken. In your own words, can you tell me the reasons that you decided to install this project?

[PROBE: Were there any other reasons?][RECORD MULTIPLE, UP TO 3 - DO NOT READ]

1. TO REPLACE OLD OR OUTDATED EQUIPMENT

2. AS PART OF A PLANNED REMODELING, BUILD-OUT, OR EXPANSION

3. TO GAIN MORE CONTROL OVER HOW THE EQUIPMENT WAS USED

4. THE MAINTENANCE DOWNTIME AND ASSOCIATED EXPENSES FOR THE OLD EQUIPMENT WERE TOO HIGH

5. HAD PROCESS PROBLEMS AND WERE SEEKING A SOLUTION

- 6. TO IMPROVE EQUIPMENT PERFORMANCE
- 7. TO IMPROVE THE PRODUCT QUALITY
- 8. TO COMPLY WITH CODES SET BY REGULATORY AGENCIES
- 9. TO COMPLY WITH COMPANY POLICIES REGARDING REGULAR/NORMAL MAINTENANCE/REPLACEMENT POLICY
- 10. TO GET A REBATE FROM THE PROGRAM
- 11. TO PROTECT THE ENVIRONMENT
- 12. TO REDUCE ENERGY COSTS
- 13. TO REDUCE ENERGY USE/POWER OUTAGES
- 14. TO UPDATE TO THE LATEST TECHNOLOGY
- 97. OTHER [RECORD VERBATIM]
- 98. DON'T KNOW
- 99. REFUSED

N1 Does your company have an annual capital budget?

- 1. YES
- 2. NO [SKIP TO N1B]
- 98. DON'T KNOW[SKIP TO N1B]
- 99. REFUSED[SKIP TO N1B]

N1a Was this project already part of that capital budget before you were aware of the Program?

- 1. YES
- 2. NO
- 98. DON'T KNOW
- 99. REFUSED

[ASK IF N1or N1a =2, 88, 99]

N1b Did you learn of the Program before or after you began to plan the installation of the <END USE>?

- 1. BEFORE [SKIP TO N3]
- 2. AFTER
- 98. DON'T KNOW
- 99. REFUSED

[ASK N2IF N1a = 1 or N1b=2, 98, 99]

N2 Did you learn about Nicor Gas' Program **before** or **after** you **decided** to install the <END USE> associated with this project?

- 1. BEFORE
- 2. AFTER
- 98. DON'T KNOW
- 99. REFUSED

N3 Next, I'm going to ask you to rate the importance of the program as well as other factors that might have influenced your decision to install this <END USE>. Think of the degree of importance as being shown on a scale with equally spaced units from 0 to 10, where 0 means not at all important and 10 means extremely important. Now using this scale please rate the importance of each of the following in your decision to install the <END USE> at this time.

[FOR N3a-n]

[RECORD 0 to 10]

- 96. NOT APPLICABLE
- 98. DON'T KNOW
- 99. REFUSED

[IF NEEDED] How important in your DECISION to install the <END USE> was...)

N3a. The age or condition of the old <END USE>

N3b. Availability of the Program incentive

[ASK IF N3b=8, 9, 10, ELSE SKIP TO N3c]

N3bb. What were the reasons that you gave it this rating?

97.[OPEN END, RECORD VERBATIM]

98. (DON'T KNOW)

99. (REFUSED)

N3c. Information provided through the technical assistance you received from Nicor Gas

[ASK IF N3c=8, 9, 10, ELSE SKIP TO N3d]

N3cc. What were the reasons that you gave it this rating?

97.[OPEN END, RECORD VERBATIM]

98. (DON'T KNOW)

99. (REFUSED)

N3d. Recommendation from an equipment vendor or contractor that helped you with the choice of the <END USE>

N3e. Previous experience with this type of <END USE>

N3f. Recommendation from a Nicor Gas or RSG program staff person

[ASK N3ff IF N3f=8, 9, 10, ELSE SKIP TO N3h]

N3ff. What were the reasons that you gave it this rating?

97.[OPEN END, RECORD VERBATIM]

98. (DON'T KNOW)

99. (REFUSED)

N3h. Information from the Business Custom Incentive Program or Nicor Gas marketing materials

[ASK IF N3h=8, 9, 10, ELSE SKIP TO N3i]

N3hh. What were the reasons that you gave it this rating?

97.[OPEN END, RECORD VERBATIM]

98. (DON'T KNOW)

99. (REFUSED)

N3i. A recommendation from a design or consulting engineer

N3j. Standard practice in your business/industry

N3k. Endorsement or recommendation by a Nicor account manager

[ASK IF N3k=8, 9, 10, ELSE SKIP TO N3l]

N3kk. What were the reasons that you gave it this rating?

97.[OPEN END, RECORD VERBATIM]

98. (DON'T KNOW)

99. (REFUSED)

N3l. Corporate policy or guidelines

N3m. Payback on the investment

N3n. Were there any other factors we haven't discussed that were influential in your decision to install this <END USE>?

97. OTHER [RECORD VERBATIM]

96. (NOTHING ELSE INFLUENTIAL)

98. (DON'T KNOW)

99. (REFUSED)

[ASK N3nn IF N3n=97]

N3nn. Using the same 0 to 10 scale, how would you rate the influence of this factor?

[RECORD 0 to 10]

98. DON'T KNOW

99. REFUSED

Thinking about this differently, I would like you to compare the importance of the Business Custom Incentive Program with the importance of other factors in installing the <ENDUSE> project.

[READ IF (N3A, N3D, N3E, N3I, N3J, N3L, N3M, OR N3nn)=8,9,10;
ELSE SKIP TO N3p]

You just told me that the following factors, other than the program, were important:

[READ IN ONLY ITEMS WHERE THEY GAVE A RATING OF 8 or higher]

N3A. Age or condition of old <END USE>,

N3D. Equipment Vendor recommendation

N3E. Previous experience with this <END USE>

N3I. Recommendation from a design or consulting engineer

N3J. Standard practice in your business/industry

N3L. Corporate policy or guidelines

N3M. Payback on investment

N3N. Other factor [piped]

N3p If you were to assign a percentage of your decision to install the <ENDUSE> project to 1) the Program and 2) all other factors, what percentage would you give to the importance of the PROGRAM?

[RECORD 0 to 100]

998. DON'T KNOW

999. REFUSED

[CALCULATE VARIABLE "OTHERPCNT" AS: 100 MINUS N3p RESPONSE; IF N3p=998, 999, SET OTHERPTS=BLANK]

- N3o And what percent would you give to other factors?
 [RECORD 0 to 100]
 998. DON'T KNOW
 999. REFUSED[The response should be <OTHERPTS> because the sum of both numbers should equal 100. If response is not <OTHERPTS> ask INC1]

- INC1 The last question asked you to assign a percentage between the program and other factors. You just noted that you would give <N3p RESPONSE> percent to the program. Does that mean you would give <OTHERPCNT> percent to other factors?
 1. YES
 2. NO
 98. DON'T KNOW
 99. REFUSED

[IF INC1=2, go back to N3p]

CONSISTENCY CHECK ON PROGRAM IMPORTANCE SCORE

[ASK IF (N3p>69 AND ALL OF (N3b, N3c, N3f, N3h, AND N3k)=0,1,2,3), ELSE SKIP TO N4aa]

- N4 You just gave <N3p RESPONSE> percent to the importance of the program; I would interpret that to mean that the program was quite important to your decision to install this <END USE>. Earlier, when I asked about the importance of individual elements of the program I recorded some answers that would imply that they were not that important to you. Just to make sure I have recorded this properly, I have a couple questions to ask you.

ASK IF N3B < 5

- N4a When asked about THE AVAILABILITY OF THE PROGRAM INCENTIVE, you gave a rating of ...<N3B RESPONSE> ... out of ten, indicating that the program incentive was not that important to you. Can you tell me the reasons that it was not that important?
 97. [Record VERBATIM]
 98. (DON'T KNOW)
 99. (REFUSED)

[ASK IF N3C < 5]

- N4b When I asked you about THE INFORMATION PROVIDED THROUGH THE TECHNICAL ASSISTANCE, you gave a rating of ...<N3C RESPONSE>... out of ten, indicating that the information provided was not that important to you. Can you tell me the reasons that provided was not that important?
 97.[Record VERBATIM]
 98. (DON'T KNOW)
 99. (REFUSED)

[ASK IF N3F < 5]

N4c When I asked you about THE RECOMMENDATION FROM A Nicor Gas PROGRAM STAFF PERSON, you gave a rating of ...<N3F RESPONSE>... out of ten, indicating that the information provided was not that important to you. Can you tell me the reasons that provided was not that important?

97.[Record VERBATIM]

98. (DON'T KNOW)

99. (REFUSED)

[ASK IF N3H < 5]

N4d When asked about THE INFORMATION from the Program or Nicor Gas MARKETING MATERIALS, you gave a rating of ...<N3H RESPONSE>... out of ten, indicating that this information from the program or utility marketing materials was not that important to you. Can you tell me the reasons that this information was not that important?

97.[Record VERBATIM]

98. (DON'T KNOW)

99. (REFUSED)

[ASK IF N3K < 5]

N4e When asked about THE ENDORSEMENT or RECOMMENDATION by YOUR UTILITY ACCOUNT MANAGER, you gave a rating of <N3K RESPONSE>... out of ten, indicating that this Account manager endorsement was not that important to you. Can you tell me the reasons that this endorsement was not that important?

97.[Record VERBATIM]

98. (DON'T KNOW)

99. (REFUSED)

[ASK IF N3p<31 AND ANY ONE OF (N3b, N3c, N3f, N3h, OR N3k=8,9,10) ELSE SKIP TO N5]

N4aa You just gave <N3p RESPONSE> points to the importance of the program. I would interpret that to mean that the program was not very important to your decision to install this <END USE>. Earlier, when I asked about the importance of individual elements of the program I recorded some answers that would imply that they were very important to you. Just to make sure I understand, would you explain the reasons that the program was not very important in your decision to install this <END USE>?

97.[Record VERBATIM]

98. (DON'T KNOW)

99. (REFUSED)

Now I would like you to think about the action you would have taken with regard to the installation of this <END USE> if the utility program had not been available.

N5 Using a likelihood scale from 0 to 10, where 0 is "Not at all likely" and 10 is "Extremely likely", if the utility program had not been available, what is the likelihood that you would have installed exactly the same <END USE>?

[RECORD 0 to 10]

98. (DON'T KNOW)

99. (REFUSED)

CONSISTENCY CHECKS

[ASK N5a-d IF N3b=8,9,10 AND N5=7,8,9,10]

N5a When you answered ...<N3B RESPONSE>... for the question about the availability of the incentive, I would interpret that to mean that the incentive was quite important to your decision to install. Then, when you answered <N5 RESPONSE> for how likely you would be to install the same <END USE> without the incentive, it sounds like the incentive was not very important in your installation decision.

I want to check to see if I am misunderstanding your answers or if the questions may have been unclear. Will you explain the role the incentive played in your decision to install this efficient <END USE>?

97.[RECORD VERBATIM]

98. (DON'T KNOW)

99. (REFUSED)

N5b Would you like for me to change your score on the importance of the incentive that you gave a rating of <N3B RESPONSE> or change your rating on the likelihood you would install the same <END USE> without the incentive which you gave a rating of <N5 RESPONSE> and/or we can change both if you wish?

1. CHANGE IMPORTANCE OF INCENTIVE RATING

2. CHANGE LIKELIHOOD TO INSTALL THE SAME EQUIPMENT RATING

3. CHANGE BOTH

4. NO, DON'T CHANGE

98. DON'T KNOW

99. REFUSED

[ASK IF N5b=1,3]

N5c How important was availability of the **program** incentive? (IF NEEDED: in your DECISION to install the equipment)

[Scale of 0 to 10, where 0 means not at all important and 10 means extremely important]

98. DON'T KNOW

99. REFUSED

[ASK IF N5b=2,3]

N5d If the utility program had not been available, what is the likelihood that you would have installed exactly the same <END USE>?

[Scale of 0 to 10, where 0 means "Not at all likely" and 10 means "Extremely likely"]

98. DON'T KNOW

99. REFUSED

[ASK IF N3>7]

N6 In an earlier question, you rated the importance of **standard practice** in your industry very highly in your decision making. Could you please rate the importance of the **program**, relative to this standard industry practice, in influencing your decision to install this <END USE>. Would you say the program was much more important, somewhat more important, equally important, somewhat less important, or much less important than the standard practice or policy?

1. MUCH MORE IMPORTANT
2. SOMEWHAT MORE IMPORTANT
3. EQUALLY IMPORTANT
4. SOMEWHAT LESS IMPORTANT
5. MUCH LESS IMPORTANT
98. DON'T KNOW
99. REFUSED

[ASK IF N5>0, ELSE SKIP TO N8]

N7 You indicated earlier that there was a <N5 RESPONSE> in 10 likelihood that you would have installed the same <END USE> if the program had not been available. Without the program, when do you think you would have installed this <END USE>? Would you say...

1. AT THE SAME TIME
2. EARLIER
3. LATER
4. NEVER
98. DON'T KNOW
99. REFUSED

[ASK N7a IF N7=3]

N7a. How much later would you have installed this <END USE>? Would you say...

1. Within 6 months
2. more than 6 months to less than 1 year later
3. more than 1 year to less than 2 years later
4. more than 2 years to less than 3 years later
5. more than 3 years to less than - 4 years later
6. 4 or more years later
98. DON'T KNOW
99. REFUSED

[ASK N7b IF N7a=6]

N7b. What were the reasons that you think it would have been 4 or more years later?

- [Record VERBATIM]
98. (DON'T KNOW)
 99. (REFUSED)

PAYBACK BATTERY

[ASK N8-N10a IF N3m=6,7,8,9,10]

I'd like to find out more about the payback criteria <COMPANY> uses for its investments.

N8 What financial calculations does <COMPANY> make before proceeding with installation of a <END USE> like this one?

97.[Record VERBATIM]

98. (DON'T KNOW)

99. (REFUSED)

N9 What is the payback cut-off point <COMPANY> uses (in months) before deciding to proceed with an investment? Would you say...

1. 0 to 6 months

2. 7 months to 1 year

3. more than 1 year up to 2 years

4. more than 2 years up to 3 years

5. more than 3 years up to 5 years

6. Over 5 years

98. DON'T KNOW

99. REFUSED

N10 Does your company generally implement projects that meet the required financial cut-off point?

1. YES

2. NO

98. DON'T KNOW

99. REFUSED

[ASK N10aa IF N10=2]

N10aa What are the reasons that your company generally doesn't implement projects that meet the required financial cut-off point?

97.[Record VERBATIM]

98. (DON'T KNOW)

99. (REFUSED)

N10a Did the rebate play a big role in moving your project within the acceptable payback cutoff point?

1. YES

2. NO

98. DON'T KNOW

99. REFUSED

CORPORATE POLICY BATTERY

[ASK N11 IF N3L=6,7,8,9,10]

N11 Does your organization have a corporate environmental policy to reduce environmental emissions or energy use? Some examples would be to "buy green" or use sustainable approaches to business investments.

1. YES

2. NO

98. DON'T KNOW

99. REFUSED

[ASK N12-N17 IF N11=1]

- N12 What specific corporate policy influenced your decision to adopt or install the <ENDUSE>through the Nicor program?
 97. [RECORD VERBATIM]
 98. DON'T KNOW[SKIP TO N15]
 99. REFUSED[SKIP TO N15]
- N13 Had that policy caused you to adopt energy efficient <ENDUSE>at this facility before participating in the Nicor program?
 1. YES
 2. NO
 98. DON'T KNOW
 99. REFUSED
- N14 Had that policy caused you to adopt energy efficient <ENDUSE>at other facilities before participating in the Nicor Program?
 1. YES
 2. NO
 98. DON'T KNOW
 99. REFUSED

[ASK N15 IF N13=1 OR N14=1]

- N15 Did you receive an incentive for a previous installation of <ENDUSE>?
 1. YES
 2. NO
 98. DON'T KNOW
 99. REFUSED

[ASK N16 IF N15=1]

- N16 To the best of your ability, please describe....
 97.[Record VERBATIM]
 98. (DON'T KNOW)
 99. (REFUSED)
 A. the amount of incentive received
 B. the approximate timing of the installation
 C. the name of the program that provided the incentive

[ASK N17 IF N13=1 OR N14=1]

- N17 If I understand you correctly, you said that <COMPANY>'s corporate policy has caused you to install energy efficient <ENDUSE> previously at this and/or other facilities. I want to make sure I fully understand how this corporate policy influenced your decision versus the Nicor program. Can you please clarify that?
 97.[Record VERBATIM]
 98. (DON'T KNOW)
 99. (REFUSED)

STANDARD PRACTICE BATTERY

[ASK N18-N22 IF N3j=6,7,8,9,10]

N18 Approximately, how long has use of energy efficient <ENDUSE> been standard practice in your industry?

M [Record Number of Months] [Range: 0-12]

98. DON'T KNOW

99. REFUSED

Y [Record Number of Years] [Range: 0-97]

98. DON'T KNOW

99. REFUSED

N19 Does <COMPANY> ever deviate from the standard practice?

1. YES

2. NO

98. DON'T KNOW

99. REFUSED

[ASK IF N19=1]

N19a Please describe the conditions under which <COMPANY> deviates from this standard practice.

97.[Record VERBATIM]

98. (DON'T KNOW)

99. (REFUSED)

N20 How did this standard practice influence your decision to install the <ENDUSE> through the [Business Custom Incentive Program](#)?

97.[Record VERBATIM]

98. (DON'T KNOW)

99. (REFUSED)

N20a Could you please rate the importance of the Program, versus this standard industry practice in influencing your decision to install the <ENDUSE>. Would you say the Program was...

1. Much more important

2. Somewhat more important

3. Equally important

4. Somewhat less important

5. Much less important

98. DON'T KNOW

99. REFUSED

N21 What industry group or trade organization do you look towards to establish standard practice for your industry?

97.[Record VERBATIM]

98. (DON'T KNOW)

99. (REFUSED)

N22 How do you and other firms in your industry receive information on updates in standard practice?

- 97.[Record VERBATIM]
- 98. (DON'T KNOW)
- 99. (REFUSED)

DESIGN ASSISTANCE

- N23 Who provided the most assistance in the design or specification of the <ENDUSE> you installed through the Program? [\[IF NECESSARY, PROBE FROM THE LIST BELOW.\]](#)
- 1. DESIGNER
 - 2. CONSULTANT
 - 3. EQUIPMENT DISTRIBUTOR
 - 4. INSTALLER
 - 5. NICOR GAS ACCOUNT MANAGER
 - 6. BUSINESS CUSTOM INCENTIVE PROGRAM STAFF
 - 7. RSG STAFF
 - 97. OTHER, SPECIFY
 - 98. DON'T KNOW
 - 99. REFUSED

[\[SKIP N24 IF N23=98, 99\]](#)

- N24 Please describe the type of assistance that they provided.
- 97.[Record VERBATIM]
 - 98. (DON'T KNOW)
 - 99. (REFUSED)

SPILLOVER MODULE

Thank you for discussing the new <ENDUSE> that you installed through the Program. Next, I would like to discuss any energy efficient equipment you might have installed without a rebate or incentive from the program.

- SP1 Since your participation in the Nicor Gas program, did you install any **additional** energy efficiency equipment at this facility or at your other facilities within Nicor Gas service territory that did NOT receive incentives through any utility or government program?
- 1. YES
 - 2. NO
 - 98. DON'T KNOW
 - 99. REFUSED

[\[ASK SP2-SP6i IF SP1=1, ELSE SKIP TO S0\]](#)

- SP2 What was the new equipment that you installed?
- 97.[Record VERBATIM]
 - 98. (DON'T KNOW)
 - 99. (REFUSED)

[SKIP TO S0 IF SP2=98, 99]

SP3 Was there a second set of energy efficient equipment installed?

1. YES
2. NO
98. DON'T KNOW
99. REFUSED

SP3a. [ASK IF SP3=1]What was the second set of energy efficient equipment installed?

- 97.[Record VERBATIM]
98. (DON'T KNOW)
99. (REFUSED)

SP5 I have a few questions about the <ANSWER FROM SP2> equipment that you installed. [If needed, read back measure: <SP2 RESPONSE>]

- 97.[Record VERBATIM]
98. (DON'T KNOW)
99. (REFUSED)

- a. Would the installation have qualified for an incentive?
- b. What were the reasons that you did not install this <ANSWER FROM SP2> through a Nicor Gas Business Program?
- c. Please describe the SIZE, TYPE, and OTHER ATTRIBUTES of this <ANSWER FROM SP2>.
- d. Please describe the EFFICIENCY of this <ANSWER FROM SP2>.
- e. How many units of this <ANSWER FROM SP2> did you install?

SP5f. Was this <ANSWER FROM SP2> specifically recommended by a program related audit, report or program technical specialist?

1. YES
2. NO
98. DON'T KNOW
99. REFUSED

SP5g. How significant was your experience with the Business Custom Incentive Program in your decision to install this <ANSWER FROM SP2> , using a scale of 0 to 10, where 0 is not at all significant and 10 is extremely significant?

- [SCALE 0-10]
98. DON'T KNOW
 99. REFUSED

[SKIP SP5h IF SP5g = 98, 99]

SP5h. What were the reasons that you gave it this rating?

- 97.[Record VERBATIM]
98. (DON'T KNOW)
99. (REFUSED)

SP5i. If you had not participated in the Business Custom Incentive Program, how likely is it that your organization would still have installed this <ANSWER FROM SP2>, using a 0 to 10, scale where 0 means you definitely **would not** have installed this <ANSWER FROM SP2> and 10 means you definitely WOULD have installed this <ANSWER FROM SP2>?

[SCALE 0-10]

- 98. DON'T KNOW
- 99. REFUSED

CONSISTENCY CHECK ON PROGRAM IMPORTANCE RATING VS. NO PROGRAM RATING

[ASK CC1a IF SP5g=0,1,2,3 AND SP5i =0,1,2,3]

CC1a When you answered ...<SP5g RESPONSE>... for the question about the influence of the Business Custom Incentive Program on your decision to install this <ANSWER FROM SP2> I would interpret that to mean the Program was not very important to your decision. However, when you answered the previous question, it sounds like it was not very likely that you would have installed this <ANSWER FROM SP2> had you not participated in the Program. Can you please explain the role the program made in your decision to install this <ANSWER FROM SP2>

- 97.[Record VERBATIM]
- 98. (DON'T KNOW)
- 99. (REFUSED)

[ASK CC1b IF SP5g=8,9,10 AND SP5i =8,9,10]

CC1b When you answered ...<SP5g RESPONSE>... for the question about the influence of the Business Custom Incentive Program on your decision to install this <ANSWER FROM SP2>, I would interpret that to mean the Program was quite important to your decision. However, when you answered the previous question, it sounds like it was very likely that you would have installed this <ANSWER FROM SP2> had you not participated in the Program. Can you please explain the role the program made in your decision to install this <ANSWER FROM SP2>?

- 97.[Record VERBATIM]
- 98. (DON'T KNOW)
- 99. (REFUSED)

[ASKSP6-SP6i IF SP3A=000]

SP6 I have a few questions about the **second** set of energy efficient equipment that you installed. (If needed, read back measure: <SP3A RESPONSE>)

- 97.[Record VERBATIM]
- 98. (DON'T KNOW)
- 99. (REFUSED)

- a. What were the reasons that you did not receive an incentive for this <SP3A RESPONSE>?
- b. What were the reasons that you did not install this <SP3A RESPONSE> through a Nicor Gas Business Program?
- c. Please describe the SIZE, TYPE, and OTHER ATTRIBUTES of this <SP3A RESPONSE>.
- d. Please describe the EFFICIENCY of this <SP3A RESPONSE>.
- e. How many units of this <SP3A RESPONSE> did you install?

SP6f. Was this <SP3A RESPONSE> specifically recommended by a program related audit, report or program technical specialist?

- 1. YES
- 2. NO
- 98. DON'T KNOW
- 99. REFUSED

SP6g. How significant was your experience in the Business Custom Incentive Program in your decision to install this <SP3A RESPONSE>, using a scale of 0 to 10, where 0 is not at all significant and 10 is extremely significant?

[SCALE 0 - 10]

98. DON'T KNOW

99. REFUSED

[SKIP SP6h IF SP6g = 98, 99]

SP6h. What were the reasons that you gave it this rating?

97.[Record VERBATIM]

98. (DON'T KNOW)

99. (REFUSED)

SP6i. If you had not participated in the Business Custom Incentive Program, how likely is it that your organization would still have installed this <SP3A RESPONSE>, using a 0 to 10, scale where 0 means you definitely **would not** have installed this <SP3A RESPONSE> and 10 means you definitely **would** have installed this <SP3A RESPONSE>?

[SCALE 0-10]

98. DON'T KNOW

99. REFUSED

CONSISTENCY CHECK ON PROGRAM IMPORTANCE RATING VS. NO PROGRAM RATING

[ASK CC2a IF SP6g=0,1,2,3 AND SP6i =0,1,2,3]

CC2a When you answered ...<SP6g RESPONSE> ... for the question about the influence of the Business Custom Incentive Program on your decision to install this <SP3A RESPONSE>, I would interpret that to mean the Program was not very important to your decision. However, when you answered the previous question, it sounds like it was not very likely that you would have installed this <SP3A RESPONSE> had you not participated in the Program. Can you please explain the role the program made in your decision to install this <SP3A RESPONSE>?

97.[Record VERBATIM]

98. (DON'T KNOW)

99. (REFUSED)

[ASK CC2b IF SP6g=8,9,10 AND SP6i =8,9,10]

CC2b When you answered ...<SP6g RESPONSE>... for the question about the influence of the Business Custom Incentive Program on your decision to install this <SP3A RESPONSE>, I would interpret that to mean the Program was quite important to your decision. However, when you answered the previous question, it sounds like it was very likely that you would have installed this <SP3A RESPONSE> had you not participated in the Program. Can you please explain the role the program made in your decision to install this <SP3A RESPONSE>?

97.[Record VERBATIM]

98. (DON'T KNOW)

99. (REFUSED)

PROCESS MODULE

I'd now like to ask you a few general questions about your participation in the Business Custom Incentive Program.

Program Processes and Satisfaction

S0 How did you first hear about the Program? **[DO NOT READ]**

1. NICOR GAS ACCOUNT MANAGER
2. NICOR WEBSITE
4. CONTRACTOR/TRADE ALLY
5. FRIEND/COLLEAGUE/WORD OF MOUTH
97. OTHER, SPECIFY
98. DON'T KNOW
99. REFUSED

S1a Did YOU fill out the application forms for the project? (Either the initial or the final program application)

1. YES
2. NO
98. DON'T KNOW
99. REFUSED

[ASK S1b IF S1a=1 ELSE SKIP TO S1e]

S1b Did the application forms clearly explain the program requirements and how to participate?

1. YES
2. NO
97. OTHER (SPECIFY)
98. DON'T KNOW
99. REFUSED

S1c How would you rate the application process? Please use a scale of 0 to 10 where 0 is "very difficult" and 10 is "very easy".

[SCALE 0-10]

98. (DON'T KNOW)
99. (REFUSED)

[ASK S1d IF S1c<4]

S1d What were the reasons that you gave that rating? **[DO NOT READ]**

1. DIFFICULT TO UNDERSTAND
2. LONG PROCESS
97. (OTHER, SPECIFY)
98. (DON'T KNOW)
99. (REFUSED)

[ASK S1e IF S1a=2]

S1e Who filled out the application forms for the project?[READ ONLY IF NECESSARY]

1. SOMEONE ELSE AT THE FACILITY
2. SOMEONE ELSE AT THE COMPANY
3. TRADE ALLY
4. CONTRACTOR
5. SUPPLIER/DISTRIBUTOR/VENDOR
6. ENGINEER
7. CONSULTANT
97. (OTHER, SPECIFY)
98. (DON'T KNOW)
99. (REFUSED)

[IF S1e = 4, SKIP TO S4b]

S4a Did you use a contractor for your <ENDUSE> project?

1. YES
2. NO
98. (DON'T KNOW)
99. (REFUSED)

[ASK S4b IF S4a=1 or if S1e =4]

S4b Was the contractor you used a Nicor Gas Trade Ally? [IF NEEDED] Was the contractor REGISTERED with the Business Custom Incentive Program?)

1. YES
2. NO
98. (DON'T KNOW)
99. (REFUSED)

[ASK S5 IF S4a=1 ELSE SKIP TO S7]

S5 How would you rate the contractor's ability to meet your needs in terms of installing your project? Please use a scale from 0 to 10, where 0 is "not at all able to meet needs" and 10 is "completely able to meet needs"?

[SCALE 0-10]

98. (DON'T KNOW)
99. (REFUSED)

S6a Would you recommend the contractor you worked with to other people or companies?

1. YES
2. NO
98. (DON'T KNOW)
99. (REFUSED)

[ASK S6b IF S6a=2]

- S6b What are the reasons that you would not recommend the contractor with whom you worked?
 [RECORD VERBATIM]
 98. (DON'T KNOW)
 99. (REFUSED)

- S7 When installing an energy efficiency project, how important is it to you that the contractor is a Nicor Gas Trade Ally? Please use a scale from 0 to 10, where 0 is "not at all important" and 10 is "very important"?
 [SCALE 0-10]
 98. (DON'T KNOW)
 99. (REFUSED)

- S8 During the course of your participation in the program, did you place any calls to the Program Call Center?
 1. YES
 2. NO
 98. (DON'T KNOW)
 99. (REFUSED)

[ASK S9 IF S8=1]

- S9 On a scale of 0 to 10, where 0 is "very dissatisfied" and 10 is "very satisfied;" how would you rate your satisfaction with the Call Center's ability to answer your questions?
 [SCALE 0-10]
 98. (DON'T KNOW)
 99. (REFUSED)

[ASK S10 IF S9<4]

- S10 What were the reasons that you gave it that rating?[DO NOT READ]
 1. PROVIDED INCONSISTENT INFORMATION
 2. DIDN'T UNDERSTAND THE QUESTION
 3. HARD TO REACH THE RIGHT PERSON/PERSON WITH THE ANSWER
 97. (OTHER, SPECIFY)
 98. (DON'T KNOW)
 99. (REFUSED)

- S11 On a scale of 0 to 10, where 0 is very dissatisfied and 10 is very satisfied, how would you rate your satisfaction with...
 [SCALE 0-10]
 96. NOT APPLICABLE
 98. DON'T KNOW
 99. REFUSED
 a. the incentive amount
 b. the communication you had with the Business Custom Incentive Program staff
 c. the communication you had with RSG Staff
 d. the Business Custom Incentive Program overall
 e. Nicor Gas overall

[ASK S12a IF S11a<4]

S12a You indicated some dissatisfaction with the incentive amount, what are the reasons that you gave this rating? **[DO NOT READ, ACCEPT MULTIPLE]**

1. BETTER REBATES IN OTHER STATES
2. TOO SMALL
3. EQUIPMENT DIDN'T QUALIFY
97. (OTHER, SPECIFY)
98. (DON'T KNOW)
99. (REFUSED)

[ASK S12b IF S11b<4]

S12b You indicated some dissatisfaction with the communication you had with the Program staff, what are the reasons that you gave this rating? **[DO NOT READ, ACCEPT MULTIPLE]**

1. PROVIDED INCONSISTENT INFORMATION
2. DIDN'T UNDERSTAND THE QUESTION
3. HARD TO REACH THE RIGHT PERSON/PERSON WITH THE ANSWER
97. (OTHER, SPECIFY)
98. (DON'T KNOW)
99. (REFUSED)

[ASK S12b IF S11c<4]

S12c You indicated some dissatisfaction with the equipment offered by the Program, what are the reasons that you gave this rating?

- 97.[RECORD VERBATIM]
98. (DON'T KNOW)
99. (REFUSED)

[ASK S12d IF S11d<4]

S12d You indicated some dissatisfaction with the Program overall, what are the reasons that you gave this rating? **[DO NOT READ, ACCEPT MULTIPLE]**

1. NOT AS EASY AS OTHER STATES
2. NO CLEAR GUIDANCE
97. (OTHER, SPECIFY)
98. (DON'T KNOW)
99. (REFUSED)

[ASK S12e IF S11e<4]

S12e You indicated some dissatisfaction with Nicor Gas overall, what are the reasons that you gave this rating? **[DO NOT READ, ACCEPT MULTIPLE]**

1. RATES ARE TOO HIGH
2. TOOK TOO LONG TO GET REBATE
3. POOR CUSTOMER SERVICE
4. POOR POWER SUPPLY/SERVICE
97. (OTHER, SPECIFY)

- 98. (DON'T KNOW)
- 99. (REFUSED)

Marketing and Outreach

MK0 I'm now going to ask you about several specific ways in which you might have seen or heard information about the Business Custom Incentive Program, Have you ever...

- 1. YES
- 2. NO
- 98. (DON'T KNOW)
- 99. (REFUSED)

- a. Received information about the program in your monthly utility bill?
- b. Attended a Nicor Gas customer event where the program was discussed?
- c. Discussed the program with a NicorGas Account Manager?
- d. Discussed the program with a Contactor or Trade Ally?
- e. Seen information about the program on the NicorGas Website?
- f. Received information about the program in an Email?
- g. Heard about the program from a colleague, friend or family member?
- h. Attended a meeting, seminar or workshop where the program was presented?
- i. Attended a webinar where the program was discussed?
- j. Read about the program in a Nicor Gas Newsletter?
- k. Been directly contacted by a Nicor outreach staff?

MK1b How useful were the program's marketing materials in providing information about the program? Would you say they were...

- 1. Very useful
- 2. Somewhat useful
- 3. Not very useful
- 4. Not at all useful
- 98. (DON'T KNOW)
- 99. (REFUSED)

[ASK MK1c IF MK1b=3,4]

MK1c What would have made the materials more useful to you? **[DO NOT READ, ACCEPT MULTIPLE]**

- 1. MORE DETAILED INFORMATION
- 2. WHERE TO GET ADDITIONAL INFORMATION
- 97. (OTHER, SPECIFY)
- 98. (DON'T KNOW)
- 99. (REFUSED)

MK2 In general, what is the best way of reaching companies like yours to provide information about energy efficiency opportunities like the Business Custom Incentive Program? **[DO NOT READ, ACCEPT MULTIPLE]**

1. BILL INSERTS
2. FLYERS/ADS/MAILINGS
3. E-MAIL
4. TELEPHONE
5. NICOR GAS ACCOUNT MANAGER
8. TRADE ALLIES/CONTRACTORS
97. (OTHER, SPECIFY)
98. (DON'T KNOW)
99. (REFUSED)

Benefits and Barriers

B1a What do you see as the main benefits to participating in the Program? **[DO NOT READ, ACCEPT MULTIPLE]**

1. ENERGY SAVINGS/SAVING MONEY
2. GOOD FOR THE ENVIRONMENT
3. LOWER MAINTENANCE COSTS
4. BETTER QUALITY/NEW EQUIPMENT
5. REBATE/INCENTIVE
6. ABLE TO MAKE IMPROVEMENTS SOONER
97. (OTHER, SPECIFY)
98. (DON'T KNOW)
99. (REFUSED)

B1b What do you see as the drawbacks to participating in the program? **[DO NOT READ, ACCEPT MULTIPLE]**

1. PAPERWORK TOO BURDENSOME
2. INCENTIVES NOT HIGH ENOUGH/NOT WORTH THE EFFORT
3. PROGRAM IS TOO COMPLICATED
4. COST OF EQUIPMENT
5. NO DRAWBACKS
97. (OTHER, SPECIFY)
98. (DON'T KNOW)
99. (REFUSED)

B3 Was the scope of your project limited by the program's incentive cap?

1. YES
2. NO
97. (OTHER, SPECIFY)
98. (DON'T KNOW)
99. (REFUSED)

Feedback and Recommendations

- R1 Do you plan to participate in the program again in the future?
1. YES
 2. NO
 3. MAYBE
 98. (DON'T KNOW)
 99. (REFUSED)
- R2 How could the Program be improved? **[DO NOT READ, ACCEPT MULTIPLE]**
1. HIGHER INCENTIVES
 2. MORE MEASURES
 3. GREATER PUBLICITY
 4. BETTER COMMUNICATION/IMPROVE PROGRAM INFORMATION
 5. SIMPLIFY APPLICATION PROCESS
 6. QUICKER PROCESSING TIMES
 97. (OTHER, SPECIFY)
 96. (NO RECOMMENDATIONS)
 98. (DON'T KNOW)
 99. (REFUSED)

Firmographics

I only have a few general questions left.

- F2 Which of the following best describes the ownership of this facility?
1. <COMPANY>owns and occupies this facility
 2. <COMPANY>owns this facility but it is rented to someone else
 3. <COMPANY>rents this facility
 98. (DON'T KNOW)
 99. (REFUSED)
- F6 And which of the following best describes the facility? This facility is...
1. <COMPANY>'s only location
 2. One of several locations owned by <COMPANY>
 3. The headquarters location of <COMPANY>with several locations
 97. (OTHER, SPECIFY)
 98. (DON'T KNOW)
 99. (REFUSED)
- F4a How old is this facility?
[NUMERIC OPEN END, 0 TO 150]
998. (DON'T KNOW)
 999. (REFUSED)
- F5a How many employees, full plus part-time, are employed at this facility?
[NUMERIC OPEN END] Range [1 - 8500]
9998. (DON'T KNOW)
 9999. (REFUSED)

[SKIP F7 IF F2=2]

- F7 In comparison to other companies in your industry, would you describe <COMPANY>as...
1. A small company
 2. A medium-sized company
 3. A large company
 97. OTHER (SPECIFY) _____
 98. (DON'T KNOW)
 99. (REFUSED)

[THANK YOU AND CLOSING]

5.9.2 Trade Ally Survey

Nicor Gas Business Custom Incentive Program Trade Ally Contractor In-Depth Interview Guide

Respondent name:	
Respondent phone number:	
Respondent title:	
Email Address:	
Respondent Company	
Date:	
Status:	

Section	Topics	Questions
Contact Qualifiers	These questions determine if the appropriate person is being interviewed.	Q1-Q8
Background	What type of business does the trade ally conduct and what types of experience does this trade representative have?	Q10-Q12
Marketing and Participation	How did trade ally become aware of this program and other utility programs? Do you refer customers to other utility programs? Is the level of utility marketing sufficient? Has word of mouth marketing had an impact?	Q13-Q17

Section	Topics	Questions
Program Barriers	How could the program be changed to overcome the barriers encountered by customers and trade allies?	Q18-Q19
Administration and Delivery	How do you market the program? How do you provide customers with service for both electric and gas energy efficient equipment? Does program delivery occur in a timely manner? Do you need more training?	Q20-Q26
Program Satisfaction	How satisfied are trade allies with the program? How satisfied are customers with the program? Do the inspections increase or decrease customer satisfaction?	Q27-Q30
Economic Indicators	How do the current economic conditions impact the program? Have your business revenues grown? Have you hired more employees? Do you plan on continuing your participation?	Q31-Q35
Free Ridership and Spillover For Selected Custom Projects	Customer-specific FR and SP questions for only Custom Customers who identified the contractor as the strongest influence for participation in the program	Q36-58
Free Ridership and Spillover	Would customers have installed the equipment without the program (free ridership)? About what percentage of customers have installed additional energy efficient equipment without an incentive (spillover)?	Q59--Q69

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

5.9.3 Introduction

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

Hi, may I please speak with [NAME]?

5.9.4 Background

1. Hello, this is _____ from Navigant Consulting calling on behalf of Nicor Gas. THIS IS NOT A SALES CALL. I am calling about your firm's recent involvement in ...<%CUSTOMER>'s...installation of

...<%MEASURE>... through the Business Custom Incentive Program... in
 ...<%INSTALL_DATE>... Our records indicate that ...<%CONTACT>... would be the person most knowledgeable about this. Is he/she available?

- 1 Yes AA5
- 2 No AA2
- 88 Refused Thank and Terminate
- 99 Don't know Thank and Terminate

2. AA2 Who would be the person most knowledgeable about your firm's involvement with ...<%CUSTOMER>'s... recently completed energy efficiency project. This project involved the installation of ...<%MEASURE> ... in ...<%INSTALL_DATE>.

- 1 Record name AA3
- 88 Refused Thank and Terminate
- 99 Don't know Thank and Terminate

3. AA3 May I speak with him/her?

- 1 Yes AA4
- 2 No (not available right now) SCHEDULE APPOINTMENT

4. AA4 Hello, this is ____ from Navigant Consulting calling on behalf of Nicor Gas...THIS IS NOT A SALES CALL. I was told that you are the person most knowledgeable about your firm's involvement with...<%CUSTOMER>'s... installation of ...<%MEASURE>..in ...<%INSTALL_DATE> through the <%PROGRAM>. __Is this correct?

- 1 Yes A2
- 2 No, there is someone else (RECORD NAME AND ASK TO BE TRANSFERRED) AA5
- 3 No and I don't know who to refer you to Thank and Terminate
- 88 Refused Thank and Terminate
- 99 Don't know Thank and Terminate

5. AA5 Am I speaking with ..<%BETTER_CONTACT> ...the representative of your company that worked with ...<%CUSTOMER>... during the planning and installation of their recently completed energy efficiency project? This project involved the installation of...<%MEASURE> ... in ...<%INSTALL_DATE>?

- 1 Yes A2
- 2 Yes, but we need to make an appointment. Reschedule appt.
- 3 No but I will give you to the correct person. AA4
- 88 Refused Thank and Terminate
- 99 Don't know Thank and Terminate

Before we start, I would like to inform you that for quality control purposes, this call may be monitored by my supervisor. For the sake of expediency, we will be recording this interview.

6. A1 <%CUSTOMER>... has indicated that your firm was involved in the implementation of their installation of ...<%MEASURE> at their facility on approximately ...<%INSTALL_DATE>. __Is this correct?...

- 1 Yes A2
- 2 No Thank and Terminate
- 88 Refused Thank and Terminate

- 99 Don't know Thank and Terminate

- 7. A2 As <%CUSTOMER>'s vendor, did you recommend the installation of this measure?
 - 1 Yes Skip to question 9.
 - 2 No A3
 - 88 Refused A3
 - 99 Don't know A3

- 8. A3 Can you please explain what was your firm's involvement with ...<%CUSTOMER>'s ... implementation of this equipment? [IF NEEDED: were they just an order taker, were they just equipment suppliers, or were they instrumental in what equipment was selected?.....if they were instrumental, then you need to go back and correct the answer to the previous question.]
 - 77 RECORD VERBATIM Thank and Terminate
 - 88 Refused Thank and Terminate
 - 99 Don't know Thank and Terminate

- 9. Can you briefly describe the company you work for and the type of business it conducts? How many are employed at your company? Who are your primary business customers?

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

- 11. How would you describe your familiarity with your company's relationship with the [UTILITY] Business Custom Incentive Program?

5.9.5 Marketing and Participation

12. How and when did you (the contractor) become aware of the program? What other ways can the utilities and program implementers use to boost program awareness with contractors?
13. Are you aware of other [ComEd, Nicor Gas, Peoples Gas, or Shore Gas Programs]? Have you referred any customers to other [ComEd, Nicor Gas, Peoples Gas, or North Shore Gas Programs] business programs? Do you have any materials that you can leave with customers describing the full range of [ComEd, Nicor Gas, Peoples Gas, and North Shore Gas] Programs? [\[ASK SEPARATELY ABOUT EACH\]](#)
14. What kind of support, if any, does [UTILITY] provide to you for marketing the Custom Incentive Program to your customers? Do you use utility-produced marketing materials?
15. Do you add any [UTILITY] logo or branding to your company invoices provided to the customer in an attempt to raise awareness of the program?
16. Do you think the level of marketing and promotion of the Custom Incentive Program has been appropriate so far? Do you think promotional efforts are successful? Do you think they reach the right audience? If the utilities or implementers are missing areas of opportunity, what are those areas?
17. Have you noticed any spontaneous word-of-mouth marketing among [UTILITY] customers? For example, do customers know of other participating businesses before you contact them?

5.9.6 Program Characteristics and Barriers

18. What areas could be improved to create a more effective program for customers and program partners? What could be modified to make the program work better (e.g., incentive levels, eligible equipment, etc.)? What would you recommend? Why do you think this change is needed?
19. Have you looked at the website to find program information? Did you find the information that you needed?

5.9.7 Administration and Delivery

20. Do you actively market the program to your customers? How do you decide which [UTILITY] customers to contact about the program? Are these customers current customers of yours? Do you market to targeted geographic areas? What prevented you from more active participation in the program?
21. After the customer agrees to install the recommended low-cost equipment, how long does it usually take to receive pre-approval from the program?
22. After an application has been pre-approved, how long does it usually take to schedule the measure installation?
23. Are you able to provide qualified customers with a loan arrangement? Who financed these loans? About what percent of your Custom Incentive Program sales are financed?
24. Do you know whom to contact for help with this program? Who would you call?
25. What training did you receive in how to deliver this equipment to business and industrial customers? Would more training be useful? What types of training would be helpful?

5.9.8 Satisfaction with the Custom Incentive Program

26. Are you satisfied with the program? Why or why not?
27. Would you be interested in participating in a program focus group to provide current and future incentive offerings?
28. Has the program provided your organization with an opportunity to provide an increased level of customer service to your new and current customers?
29. Are customers satisfied with the program? Why or why not?
30. Are the incentives levels effective at encouraging customers to install equipment they would not have considered without the program? The implementers conduct pre- and post-inspections of the installations. Are these inspections conducted quickly? Do they present a barrier to participation or are they a burden on customers? Do the pre-inspections unnecessarily delay installations? Have any post-inspections unnecessarily delayed incentive payments?

5.9.9 Economic Indicators

31. Do you think the current economic conditions are affecting the program? If so, how?
32. Do you find the Custom Incentive Program is a competitive advantage for your firm?
33. Has your business revenues grown in the past year (Y/N)? If yes would you attribute any of that growth to the Custom Incentive Program? About what % (+/- 10%)
34. Have you hired more employees because of work generated by the Custom Incentive Program? How many? In the next year will you hire more employees to handle increased work generated by the program? About how many?
35. Do you plan to continue participating in the program through 2013?

5.9.10 Free-ridership For Flagged Custom Projects – Matches ComEd Questions (If N3d in Participant Survey is great or 8 or higher) Otherwise Skip to Question 59

[READ] For the sake of expediency, during the balance of the interview, we will be referring to the <%PROGRAM> as the PROGRAM and we will be referring to the installation of ... <%MEASURE> as the MEASURE. I will repeat this from time to time during the interview as your organization may have installed more than one measure through more than one program.

I am going to ask you to rate the importance of the PROGRAM in influencing your decision to recommend this MEASURE to ...<%CUSTOMER>.. Think of the degree of importance as being shown on a scale with equally spaced units from 0 to 10, where 0 means not at all important and 10 means very important, so that an importance rating of 8 shows twice as much influence as a rating of 4.

36. V2 Using this 0 to 10 scale where 0 is NOT AT ALL IMPORTANT and 10 is EXTREMELY IMPORTANT, how important was the PROGRAM, including incentives as well as program services and information, in influencing your decision to recommend that ...<%CUSTOMER>... install the energy efficiency MEASURE at this time?
- | | | |
|----|------------------------------|----|
| # | Record 0 to 10 score (_____) | V3 |
| 88 | Refused | V3 |
| 99 | Don't know | V3 |
37. V3 And using a 0 to 10 likelihood scale where 0 is NOT AT ALL LIKELY and 10 is EXTREMELY LIKELY, if the PROGRAM, including incentives as well as program services and information, had not been available, what is the likelihood that you would have recommended this specific MEASURE to ...<%CUSTOMER>?
- | | | |
|----|------------------------------|----|
| # | Record 0 to 10 score (_____) | V4 |
| 88 | Refused | V4 |
| 99 | Don't know | V4 |
38. V4 Approximately, in what percent of sales situations did you recommend this MEASURE before you learned about the PROGRAM?
- | | | |
|----|-------------------|----|
| % | Record PERCENTAGE | V5 |
| 88 | Don't know | V5 |
| 99 | Refused | V5 |
39. V5 And approximately in what percent of sales situations do you recommend this MEASURE now that you have worked with the PROGRAM?
- | | | |
|----|-------------------|-----|
| % | Record PERCENTAGE | V6a |
| 88 | Don't know | V6a |
| 99 | Refused | V6a |
40. V6a In what other ways has the PROGRAM influenced your recommendation that a customer install this MEASURE?
- | | | |
|----|-----------------------|------|
| 1 | Record FIRST mention | V6aa |
| 2 | Record SECOND mention | V6aa |
| 3 | Record THIRD mention | V6aa |
| 4 | No other way | V7a |
| 88 | Refused | v7a |

99 Don't know V7a

IF V6a not '.' THEN ASK, ELSE V6ab

41. V6aa Using a 0 to 10 scale, how important was <%FIRST_MENTION> in your recommendation that a customer install this MEASURE?

Record 0 to 10 score (_____) V6b

88 Don't know V6b

99 Refused V6b

IF V6a not '.' THEN ASK, ELSE V6ac

42. V6ab Using a 0 to 10 scale, how important was <% SECOND_MENTION> in your recommendation that a customer install this MEASURE?

Record 0 to 10 score (_____) V6b

88 Don't know V6b

99 Refused V6b

IF V6a not '.', THEN ASK, ELSE V7a

43. V6ac Using a 0 to 10 scale, how important was <% THIRD_MENTION> in your recommendation that a customer install this MEASURE?

Record 0 to 10 score (_____) V6b

88 Don't know V6b

99 Refused V6b

IF <TRAINING SEMINAR>=1 THEN ASK, ELSE V7b

44. V7a Using the same scale as before, how important was <TRAINING SEMINAR> provided by <%IMPLEMENTER> in your recommendation that a customer install this MEASURE?

Record 0 to 10 score (_____) V7b

88 Don't know V7b

99 Refused V7b

45. V7b And how important was the information provided by the <%UTILITY> website in your recommendation that a customer install this MEASURE?

Record 0 to 10 score (_____) V7c

88 Don't know V7c

99 Refused V7c

46. V7c And how important was your firm's past participation in a rebate or audit program sponsored by <%UTILITY> in your recommendation that a customer install this MEASURE?

Record 0 to 10 score (_____) V8

88 Don't know V8

99 Refused V8

47. V8 Approximately, what percentage of your sales over the last 12 months of this...<%MEASURE > installed in <%UTILITY> 's service territory are energy efficient models...that qualify for incentives from the program?

% Record PERCENTAGE V9

88 Don't know V9
 99 Refused V9

48. V9 In what percent of sales situations do you encourage your customers in <%UTILITY>'s service territory to purchase program qualifying ...<%MEASURE >...?

% Record PERCENTAGE V9a
 88 Don't know V10
 99 Refused V10

IF V9 < 100% THEN ASK. ELSE V10.

49. V9a In what situations do you NOT encourage your customers to purchase energy efficient models that qualify for a rebate? And why is that?

77 RECORD VERBATIM V10
 88 Refused V10
 99 Don't know V10

50. V10 Of those installations of ...<%MEASURE >... in <%UTILITY>'s service territory that qualify for incentives, approximately what percentage do not receive the incentive?

% Record PERCENTAGE V11
 88 Don't know V12
 99 Refused V12

IF V10 >> 0;

51. V11 Why do you think they do not receive the incentive?

77 RECORD VERBATIM V12
 88 Refused V12
 99 Don't know V12

52. How many of your business customers purchase program equipment and do not apply for the incentive offered by the utility? [Which measure types and rough scope.]

- What do you think is the reason for this? (e.g., too time-consuming, too much paperwork, incentive too small to bother)

53. How many of your business customers choose to implement other energy efficiency measures (actions like pipe wrap or other energy efficiency equipment not incented by the program) as a result of awareness of or participating in the program? What types of things do they usually do? (Try to develop a number for each type.)

54. V14 Have you changed your stocking practices for <%MEASURE> as a result of the <%UTILITY>'s Program? [IF NEEDED: BY STOCKING PRACTICES, I MEAN THE TYPES OF EQUIPMENT YOU SUPPLY AND SELL IN <%UTILITY>'s SERVICE TERRITORY.]

1 Yes V15
 2 No V15
 88 Refused V15
 99 Don't know V15

IF V12=1

55. V16 Do you know of any other vendors that worked with ...<%CUSTOMER>... during their implementation and/or installation of ...<%MEASURE>, for example engineers or designers?

- 1 Yes V16a
- 2 No V17
- 88 Refused V17
- 99 Don't know V17

56. V16a Do you have their business name?

- 77 RECORD Business name and contact's name and phone number(s) V17
- 88 Refused V17
- 99 Don't know V17

57. V17 And finally, for verification purposes only, may I please have your first name?

- 77 RECORD VERBATIM END

END Those are all the questions I have for you today. Thank you very much for your time.

Free-ridership and Spillover For ALL OTHER CONTRACTORS

58. Were you installing the type of equipment that would have qualified for an incentive prior to participating in this program? [IF YES] What kind? About what percent of your sales do you think were of this type of efficient equipment before the program? [IF UNSURE] Was it more than 50% or less than 50%? More or less than 75% or 25%? Etc.
59. About what percent of your total sales do you think qualified for the program in after you became a Custom Incentive Program Trade Ally? Was it more than 50% or less than 50%? More or less than 75% or 25%? Etc. Did all of these installations receive a rebate?
60. About what percent of your total sales do you think would have been for the same type of qualifying equipment if the Custom Incentive Program was not offered?
61. Of the [number of projects in program] participants, how many of these were your customers before they participated in the program?
62. Of the participants who were your customers before the Custom Incentive Program, how many of them had EVER installed energy efficient equipment that you are aware of? What type of equipment was it? When was that project installed?
63. Did the customer receive a rebate from a utility program for installing that equipment?
64. Why do you think the customer did not receive a rebate for this equipment?
65. Have any of the Custom Incentive Program participants asked your organization to install additional energy efficient equipment after their program participation? What did you install? Why did they want more equipment? Did the equipment qualify for a utility incentive?
66. If the Custom Incentive Program had not been available, how would your sale of program-qualifying equipment be different?

5.9.11 Spillover

67. How many of your small business customers purchase program equipment and do not apply for the incentive offered by the utility? [Which measure types and rough scope.]
 - What do you think is the reason for this ? (e.g., too time-consuming, too much paperwork, incentive too small to bother)
68. How many of your business customers choose to implement other energy efficiency measures (actions like pipe wrap or other energy efficiency equipment not incented by the program) as a result of awareness of or participating in the program? What types of things do they usually do? (Try to develop a number for each type.)

Thank you and closing.

5.10 *Business Custom*

5.11 *Retro-Commissioning*