

**To:** Erin Daughton, Rick Tonielli, ComEd; Randy Opdyke, Bruce Liu, Anthony Lopez, Scott Dimetrosky, Katie Parkinson, Nicor Gas; Christina Pagnusat, Omy Garcia, Heidi Gorrill, Katie Baehring, Richard Boehnke, Erin Stitz, PGL/NSG

**CC:** Jennifer Morris, ICC Staff; Randy Gunn, Jeff Erickson, Rob Neumann

**From:** Sharon Mullen, Roger Hill, Kevin Grabner

**Date:** August 25, 2018 (Interim Update September 14, 2018)

**Re:** Net-to-Gross Research Results from EPY9/GPY6 for the Coordinated Utility Retro-Commissioning Program

## Introduction

This memo presents our free ridership and spillover research results for the EPY9/GPY6 Coordinated Utility Retro-Commissioning Program (Retro-Commissioning) among ComEd, Nicor Gas, Peoples Gas (PGL) and North Shore Gas (NSG) using the Illinois TRM version 6.0 methodologies.<sup>1</sup> The net-to-gross (NTG) research was conducted by surveying EPY9/GPY6 participants in November 2017 and February 2018 and interviewing participating service providers in March and April 2018. The focus of the research was to capture a representative sample of traditional RCx, RCxpress and Tune-Up participants and a representative sample of participating service providers. The participant and service provider free ridership and spillover results combined provide new findings to inform the CY2019 NTG discussions in September 2018.

Table 1 below provides a summary of the participant free ridership and spillover research findings for the two different algorithm options included in the NTG TRM. Overall, 19 participant surveys were completed, including two Traditional RCx, five RCxpress and 12 Tune-Up participants. Navigant completed 11 service provider interviews.

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

**Table 1. Participant Free Ridership and Spillover Results**

NTG Option	Program Path	Participant Free Ridership, (Weighted)	Participant Spillover	Sample (n)	Relative Precision @90% CI
Option 1	Traditional RCx*	0.24	0	2	25.9%
	RCXpress	0.09	0	5	4.8%
	Tune-Up	0.14	0	12	6.2%
	<b>Population Roll-up</b>	<b>0.13</b>	<b>0</b>	<b>19</b>	<b>1.6%</b>
Option 2	Traditional RCx*	0.31	0	2	20.7%
	RCXpress	0.10	0	5	4.4%
	Tune-Up	0.15	0	12	6.3%
	<b>Population Roll-up</b>	<b>0.14</b>	<b>0</b>	<b>19</b>	<b>2.0%</b>

\* Free ridership results are not statistically significant due to the small number of responses.

Source: Navigant analysis of data from a telephone survey conducted by Navigant with EPY9/GPY6 Retro-Commissioning Program participants. MBCx was not evaluated for this program year.

## Free Ridership and Spillover Research Data Collection

Navigant conducted the free ridership and spillover research following a self-report approach with program participants and with participating service providers. The participant research involved a telephone survey with an attempted census of 78 unique EPY9/GPY6 participants. We achieved a response rate of 28 percent by count across the three paths, while experiencing 17 percent unreturned voice mail messages, 13 percent refusal to participate in the survey, and 12 percent inaccurate contact information. The service provider research involved telephone interviews with 11 program service providers from an attempted census of 25 partner companies. Although the service provider response rate was 44 percent by count, the respondents were responsible for 71 percent of the savings generated through the program. The counts for the completed participant survey, service provider interviews, and sample design are outlined in Table 2.

**Table 2. Free Ridership and Spillover Research Survey and Interview Disposition**

Respondents	Unique Contacts	Target Completes	Actual Completes	Free Ridership Sample (n)	Percent Savings Represented
Participant Decision Makers	78	Census	19	19	12%
Electric					12%
Gas					4.5%
Service Providers	25	Census	11	11	71%

Source: Coordinated Retro-Commissioning EPY9/GPY6 Participant Survey responses.

Following a low response rate to our participant survey in EPY8/GPY5, we took steps to improve the response this year. These steps include having the implementer email participants to take the survey before fielding the survey for both Waves and having a call center available to accept return-calls to take the survey during extended business hours. Participants from the Wave 1 sample who had fewer than two voice mail messages were contacted again with Wave 2. All participants were contacted up to five times or until they participated in the survey, refused to participate, or we discovered incorrect contact

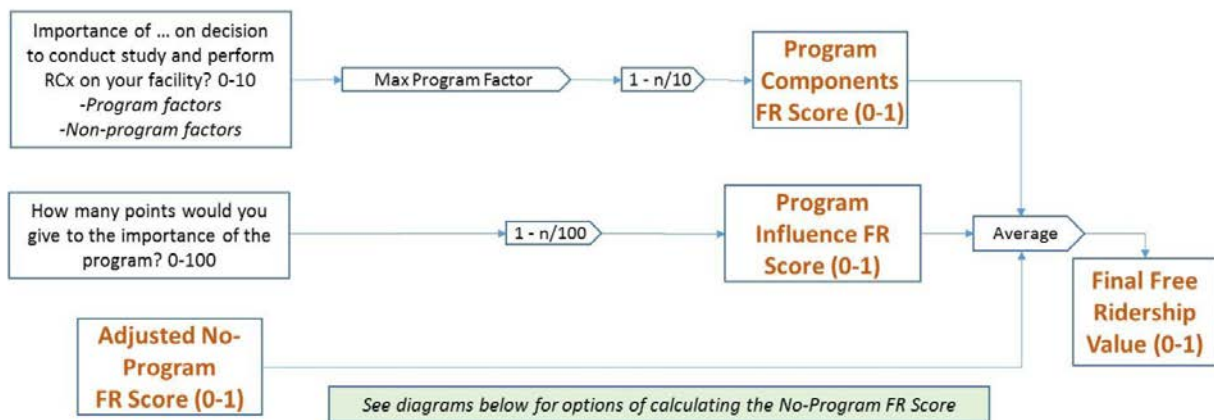
information. We will take additional steps in the future, including advanced email scheduling of appointments to conduct the survey.

## Free Ridership Estimates

The following diagrams describe the TRM participant free ridership algorithms for commercial and industrial study-based programs. Figure 1 shows an overview of the framework which allows for two options for computing score 3. These two variants are shown graphically in Figure 2 and Figure 3 below.

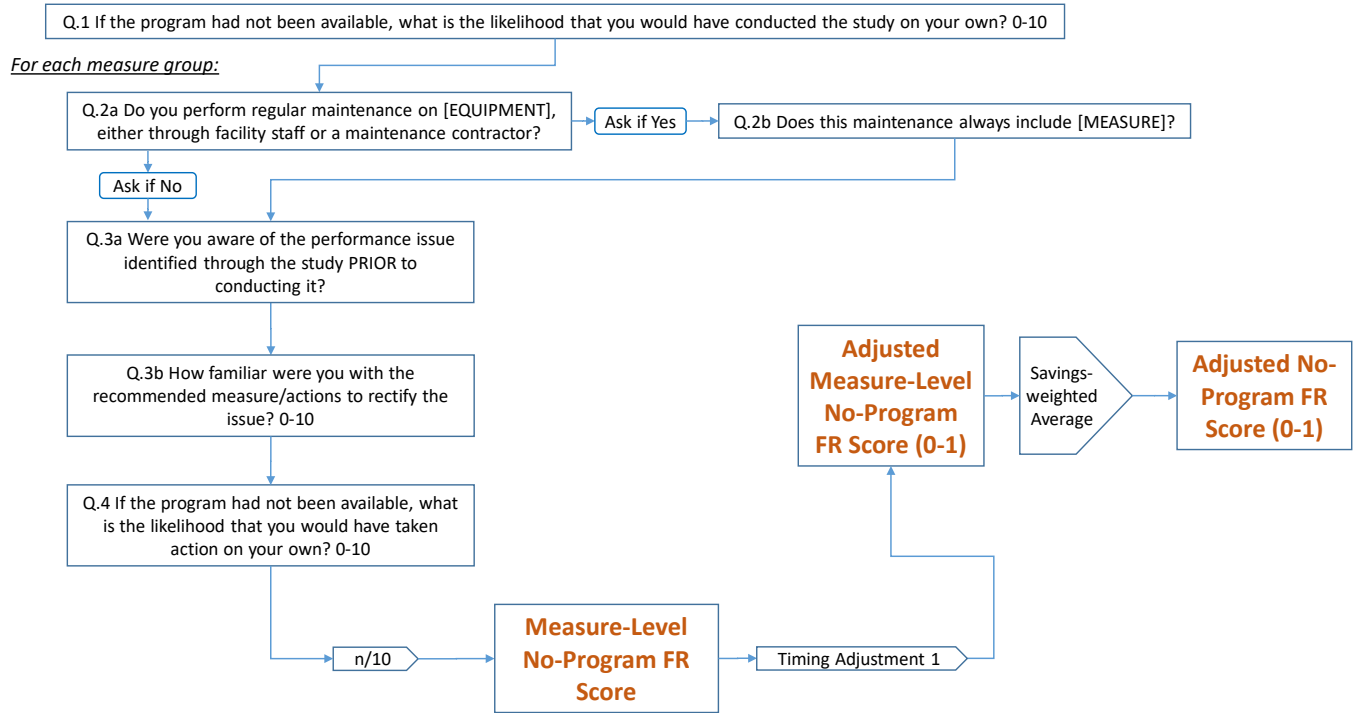
**Figure 1 Study-Based Free Ridership Overview**

$$\frac{(\text{Program Components FR Score} + \text{Program Influence FR Score} + (\text{No-Program FR Score} * \text{Timing Adjustment 1}))}{3}$$

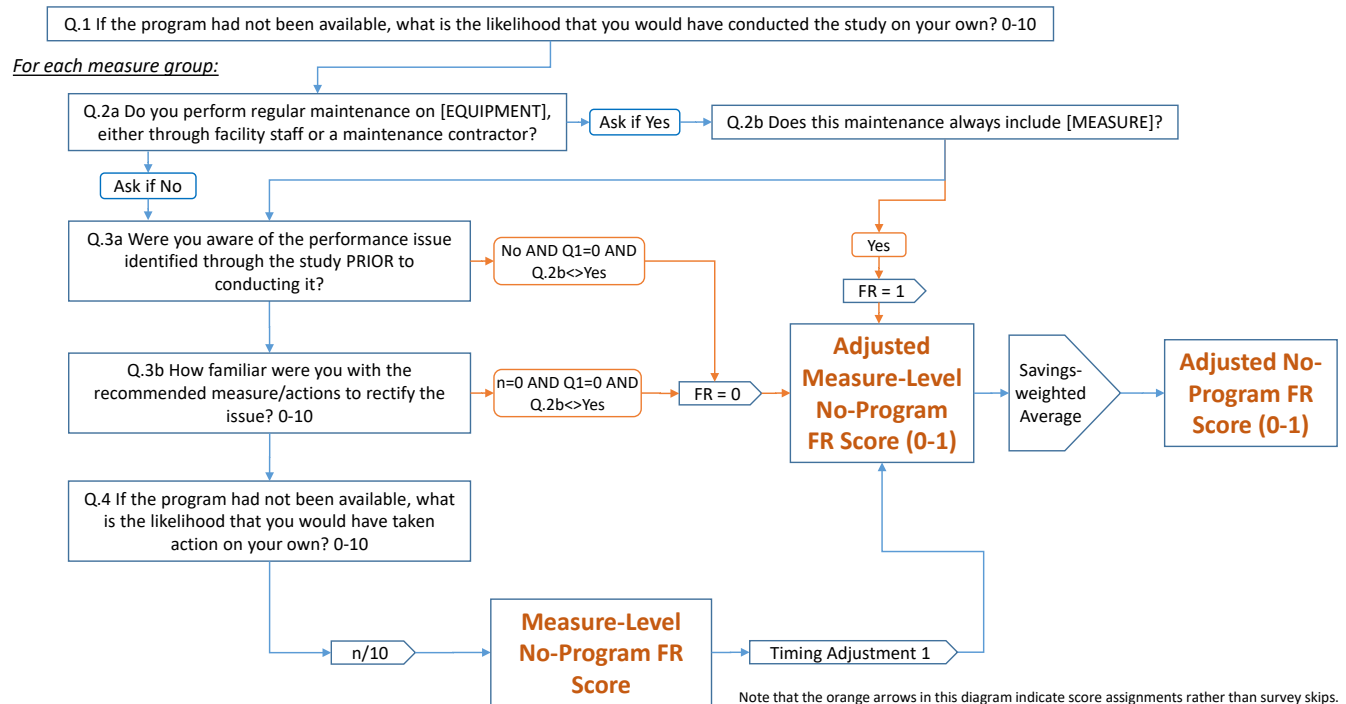


Source: Illinois TRM Version 6, Volume 4. Cross-Cutting Measures and Attachments, final February 8, 2017, effective January 1st, 2018.

**Figure 2. Study-Based Free Ridership – No-Program FR Score Option #1**



**Figure 3. Study-Based Free Ridership – No Program FR Score Option #2**



For the participant research, Navigant applied the algorithms indicated by the TRM version 6.0 to the data we collected from the EPY9/GPY6 Retro-Commissioning Program participants. To achieve the Program Influence score, we expanded the program factor/non-program factor rating questions with follow up questions to determine if this Retro-Commissioning Program was influential when considering, for example, previous experience with retro-commissioning, peer recommendations or trade organizations. We then prompted respondents with their three highest rated program factors when assigning points to the importance of the program and non-program factors when assigning points to the importance of non-program factors.

The TRM protocol requires the free ridership analysis to include an adjusted no-program free ridership score. This adjustment is determined by querying the decision maker about 1) the likelihood of conducting the study on their own had the program not been available and 2) how they addressed various implemented measures or actions prior to participating in the program. Results of our free ridership calculations using the two options are shown in Table 1.

Table 3 below shows the average for each component free ridership score by program path. The free ridership algorithm is applied to individual respondents, and then those respondent free ridership values are savings weighted for the final free ridership.

**Table 3. Free Ridership Component**

Program Path	Program Component FR Score	Program Influence FR Score	Adjusted No-Program Score (Weighted):
Traditional RCx (n=2)	10%	40%	9%
RCXpress (n=5)	0%	20%	1%
Tune-Up (n=12)	8%	35%	1%

Navigant recommends the results from Option #1 because that option yields a more balanced representation of free ridership in that it considers the full body of evidence regarding no-program behavior in computing the No-Program FR Score. In contrast, Option #2 goes straight to a FR value of 0 (NTGR of 1.0) solely based on the decisionmaker self-reported responses that their routine maintenance excludes the incented equipment. This option does not consider other no-program evidence when computing the No-Program FR score. This essentially ignores the effect of the other no-program actions for such answer combinations, which in our view is inappropriate. This option also violates the general principal in the TRM that the NTG value should not be dependent on a single question.

For the service provider research, Navigant interviewed service providers on participant free ridership, asking the following questions:

According to program records, you completed Retro-Commissioning studies between June 2016 and December 2017. If the program did not exist this year, how many studies do you think you would have completed in the same period?

Again, thinking about the program studies that you completed between June 2016 and December 2017, if the program did not exist this year, how many studies *of comparable breadth and depth* do you think you would have completed in the same period?

According to program records, between June 2016 and December 2017 your program participants went on to achieve [RSPSAVINGS] from implementing recommended energy efficiency improvements. What percent of these savings do you think those customers would have achieved if the program did not exist this year?

Navigant found that the free ridership as reported by service providers was 0.025, while the free ridership as reported by participants was 0.13.

**Combining Participant and Service Provider Results.** Navigant calculated a weighted average of the participant and service provider free ridership utilizing the proposed triangulation approach<sup>2</sup> shown in Table 4 to arrive at one recommended free ridership score. Navigant rated the survey data on three aspects: accuracy, validity, and representativeness, using a scale of 0 to 10 where 10 means “extremely so” and 0 means “not at all”.

<sup>2</sup> The triangulation approach is presented in TRM version 6.0 for residential rebate programs and is proposed for all sectors as an update to TRM version 7.0.

**Table 4. Triangulation Weighting Approach**

NTG Triangulation Data and Analysis	Participants	Service Providers
How likely is this approach to provide an accurate estimate of free ridership?	6	8
How valid is the data collected/analysis?	5	5
How representative is the sample for Electric?	1.2	7.1
How representative is the sample for Gas?	0.1	7.1
Electric		
Average Score	4.1	6.7
Sum of Averages	10.8	10.8
<b>Weight</b>	<b>0.38</b>	<b>0.62</b>
Gas		
Average Score	3.7	6.7
Sum of Averages	10.4	10.4
<b>Weight</b>	<b>0.36</b>	<b>0.64</b>

Source: Coordinated Retro-Commissioning EPY9/GPY6 Participant and Service Provider survey responses.

Navigant arrived at the value for accuracy based on our understanding of the difference between participant and service provider understanding of the marketplace and likelihood of customers engaging in the study and recommended improvements without the program: we rate the trade ally data as more accurate than the participant data. Validity of the data is consistent for both populations. The representativeness was based on the savings the respondents contributed to the program, calculated at 100 \* XX% of savings delivered by the respondents (i.e., electric participants at [100 \* 12%], service providers at [100 \* 71%]. The weights were determined by [(average score) / (sum of averages)]. These weights were subsequently applied to the researched NTG value for the participants and service providers, then added together:

$$\text{Free Ridership} = ((\text{Participant FR}) * (\text{Participant Weight})) + ((\text{Service Provider FR}) * (\text{Service Provider Weight}))$$

$$\text{Free Ridership} = 13.0\% * 0.36 + 2.5\% * 0.64 = 6\%$$

Navigant recommends using the weighted free ridership estimate of 6% achieved through this triangulation of 13 percent reported by the participants and 2.5 percent reported by service providers. The triangulation weighting reflects the service providers' greater understanding of the market and higher representation of the energy savings achieved through the program.

## Participant Spillover

Navigant asked the participants if they had implemented or installed additional energy savings measures to reduce consumption at their facility since participating in the Retro-Commissioning Program. Navigant included questions to identify spillover candidates and measures, paraphrased below:

- Since completing your project, have you adopted any additional energy efficient operational improvements? What did you implement?

- How important was your experience in the Retro-Commissioning Program in your decision to make these additional changes? Please use a 0-10 scale, where 0 means 'not at all important', and 10 means 'extremely important'?

Participants did not report having implemented or installed additional operations or measures to save energy at their facilities since participating in the program. As a result, Navigant estimated participant spillover at zero.

## Trade Ally Spillover

From interviews with the 11 service providers, Navigant identified none who responded with any percentage of their sales that were potential spillover. To determine whether the sales were spillover, Navigant analyzed responses from questions including:

- Have you conducted any studies with ComEd-territory customers without program rebates?
- How influential do you think the program was on these additional studies conducted without program rebates?
- Thinking about the savings that those non-rebated studies achieved, how would you describe those savings in terms of the savings that your studies achieved through the program?

Navigant determined that none of the 11 service providers reported any potential spillover.

## NTG Results

The NTG research results for the two fuel types represented in the Coordinated Retro-Commissioning Program are summarized in Table 5.

**Table 5. Summary of Free Ridership, Spillover and NTGR Research Results for the Coordinated Utility Retro-Commissioning Program**

Fuel Type	Free Ridership	Participant Spillover	Trade Ally Spillover	Non-participant Spillover	NTGR
Electric	0.06	0.00	0.00	0.00	0.94
Gas	0.06	0.00	0.00	0.00	0.94

NTGR = 1 - FR + PSO + TSO + NPSO

FR = Participant Free Ridership; PSO = Participant Spillover; TSO = Trade Ally Spillover; NPSO = Non-Participant Spillover

Source: Navigant analysis of data from telephone surveys conducted by Navigant with EPY9/GPY6 Retro-Commissioning Program participants and service providers. MBCx was not evaluated for this program year.

## NTG Comparison with Previous Research

For comparison, the NTG results we reported previously<sup>3</sup> using EPY6 and GPY1 program participants and participating service providers are presented below.

<sup>3</sup> Evaluation Report: Northern Illinois Joint Utility Retro-Commissioning Program Report, January 14, 2013.



**Table 6. Participant NTG Estimates (EPY6 and GPY1 Participants)**

	Participant		Service Provider		Overall	
	Electricity	Gas	Electricity	Gas	Electricity	Gas
Net-of-Free-riders	0.91	0.82	0.90	0.998	0.91	0.91
Spillover	<0.01	<0.01	0.04	0.11	0.04	0.11
<b>Overall NTG</b>	<b>0.91</b>	<b>0.82</b>	<b>0.94</b>	<b>1.10</b>	<b>0.95</b>	<b>1.025</b>

*Source: Navigant analysis of EPY6 and GPY1 Participant and Service Provider responses.*

The overall electricity NTG value was updated to 0.95 by combining participant and service provider survey research results from EPY6<sup>4</sup>: electric free ridership (nine percent) and spillover (four percent).

<sup>4</sup>Joint Utility Retro-Commissioning Program EPY6/GPY3 Evaluation Report, March 24, 2015.

## Appendix 1: ComEd Retro-Commissioning Program NTG History

	Retro-Commissioning
EPY1	<p><b>NTG 0.8</b>  <b>Free-Ridership 0%</b>  <b>Spillover 0%</b>  <b>Method:</b> Program <i>ex ante</i> assumption.                      Customer self-report. Two completed surveys from a population of four participants bracketed the assumed NTG. Basic method.</p>
EPY2	<p><b>NTG 0.916</b>  <b>Free-Ridership 8.4%</b>  <b>Spillover 0%</b>  <b>Method:</b> Customer self-report. Five surveys completed from an attempted census of a population of thirteen. Basic method.</p>
EPY3	<p><b>NTG 0.71</b>  <b>Free-Ridership 28.7%</b>  <b>Spillover 0%</b>  <b>Method:</b> Customer self-report. Eight surveys completed from an attempted census of a population of 34 participants. Basic method.</p>
EPY4	<p><b>Deemed NTG of 0.916 from EPY2</b>  <b>Research NTG 1.04</b>  <b>Free-Ridership 0.097</b>  <b>Spillover 0.136</b>  <b>Method:</b> Program <i>ex ante</i> assumption and stipulated for EPY4. NTG based on EPY2 research. EPY3 research rejected due to small ratio of completed surveys.</p>
EPY5	<p>SAG Consensus:</p> <ul style="list-style-type: none"> <li>• 0.71</li> </ul>
EPY6	<p>SAG Consensus:</p> <ul style="list-style-type: none"> <li>• 1.04</li> </ul>
EPY7	<p><b>NTG: 1.04</b>                      There was no new NTG research in EPY5. The most recent NTG research is from PY4.  <b>Free-Ridership: 0.10.</b> The PY4 Free-Ridership ratio is an equally weighted average of savings-weighted participant and service provider Free-Ridership scores.</p> <p><b>Participant spillover: 0.14.</b> Source: Participant and trade ally surveys.                      (Includes spillover from trade allies that account for 94% of program participation)</p> <p><b>Nonparticipant spillover: Negligible.</b> There is no evidence of non-participant spillover. Service providers are dropped from the program if they are not generating projects. If they are not generating projects in the program, they are probably not generating them outside the program.</p>
EPY8	<p><b>Recommendation (based upon PY6 research):</b>  <b>NTG: 0.95 (electric)</b>  <b>Free Ridership: 0.09 (electric)</b>  <b>Spillover: 0.04 (electric)</b></p> <p>Spillover and Free-Ridership were calculated from self-report interviews with participants and service providers (n=18). The final EPY6 Free-Ridership ratio is an equally weighted average of savings-weighted participant and RSP Free-Ridership. Interviewed service providers account for 92% of electric savings.</p>

Net-to-Gross Research Results from EPY9/GPY6 for the Coordinated Utility Retro-Commissioning Program

August 25, 2018 (Interim Update September 14, 2018)

Page 11 of 12

	<b>Retro-Commissioning</b>
	NTG research was not conducted for the gas companies.
EPY9	<b>NTG: 0.95 (electric)</b> <b>Free Ridership: 0.09 (electric)</b> <b>Spillover: 0.04 (electric)</b>  <b>NTG Source:</b> Free-Ridership and Spillover: PY6 NTG Research
EPY10	<b>NTG: 0.95 (electric)</b> <b>Free Ridership: 0.09 (electric)</b> <b>Spillover: 0.04 (electric)</b>  <b>NTG Source:</b> Free-Ridership and Spillover: PY6 NTG Research Due to limited sample size of PY8 NTG research, EPY8 results will be included in EPY9 research and analysis.

Source: [http://ilsagfiles.org/SAG\\_files/NTG/2017\\_NTG\\_Meetings/Final/ComEd\\_NTG\\_History\\_and\\_PY10\\_Recommendations\\_2017-03-01.pdf](http://ilsagfiles.org/SAG_files/NTG/2017_NTG_Meetings/Final/ComEd_NTG_History_and_PY10_Recommendations_2017-03-01.pdf)

## Appendix 2: People Gas (PGL) and North Shore Gas (NSG) Retro-Commissioning Program NTG History

	Retro-Commissioning
GPY1	<p><b>NTG</b> 1.02  <b>Free ridership</b> 0.09  <b>Participant Spillover</b> 0.11  <b>Method and Source:</b> Evaluation research consisting of GPY1 participating customer and Retro-Commissioning Service Provider self-reports. Interviews conducted with 9 of 15 participants from Peoples Gas and North Shore Gas and eight of nine Service Providers. Participant and Service Provider spillover researched.</p> <p><b>Peoples Gas: Verified Gross Realization Rate:</b> 1.06  <b>North Shore Gas: Verified Gross Realization Rate:</b> 1.20</p>
GPY2	<p><b>Peoples Gas: Deemed NTG</b> 1.02; <b>Free ridership</b> 0.09; <b>Participant Spillover:</b> 0.11  <b>North Shore Gas: Deemed NTG</b> 1.02; <b>Free ridership</b> 0.09; <b>Participant Spillover:</b> 0.11  <b>Method and Source:</b> Deemed by SAG consensus from GPY1 evaluation research.</p> <p><b>Peoples Gas: Verified Gross Realization Rate:</b> 1.04  <b>North Shore Gas: Verified Gross Realization Rate:</b> no savings installed</p>
GPY3	<p><b>Peoples Gas: Deemed NTG</b> 1.02; <b>Free ridership</b> 0.09; <b>Participant Spillover:</b> 0.11  <b>North Shore Gas: Deemed NTG</b> 1.02; <b>Free ridership</b> 0.09; <b>Participant Spillover:</b> 0.11  <b>Method and Source:</b> Deemed by SAG consensus from GPY1 evaluation research.</p> <p><b>Peoples Gas: Verified Gross Realization Rate:</b> 1.00  <b>North Shore Gas: Verified Gross Realization Rate:</b> 1.00</p>
GPY4	<p><b>NTG</b> 1.02; <b>Free ridership</b> 0.09; <b>Participant Spillover:</b> 0.11  <b>Method and Source:</b> Deemed by SAG consensus. Values based on GPY1 evaluation research.</p>
GPY5	<p><b>NTG</b> 1.02; <b>Free ridership</b> 0.09; <b>Participant Spillover:</b> 0.11  <b>Method and Source:</b> No new research. Values based on GPY1 evaluation research.</p>
GPY6	<p><b>NTG</b> 1.02; <b>Free ridership</b> 0.09; <b>Participant Spillover:</b> 0.11  <b>Method and Source:</b> No new research. Values based on GPY1 evaluation research.</p>
GPY7	<p><b>NTG:</b> 1.02  <b>Method:</b> No new research. Retained GPY6 final value.</p>

Source: [http://ilsagfiles.org/SAG\\_files/NTG/2017\\_NTG\\_Meetings/Final/PGL\\_and\\_NSQ\\_NTG\\_Summary\\_GPY1-7\\_2017-03-01\\_Final.pdf](http://ilsagfiles.org/SAG_files/NTG/2017_NTG_Meetings/Final/PGL_and_NSQ_NTG_Summary_GPY1-7_2017-03-01_Final.pdf)

## Appendix 3: Nicor Gas Retro-Commissioning Program NTG History

	Retro-Commissioning
GPY1	<p><b>NTG</b> 1.02  <b>Free ridership</b> 9%  <b>Spillover</b> 11%  <b>Method:</b> Customer and service provider self-report.                      NTG based on GPY1 research – 11 participants with gas savings and eight of nine service providers surveyed. Enhanced method. Participant and Service Provider spillover researched.</p>
GPY2	<p><b>NTG</b> 1.02  <b>Free ridership</b> 9%  <b>Spillover</b> 11%  <b>Method:</b> SAG deemed NTG ratio based on GPY1 evaluation research.</p>
GPY3	<p><b>NTG</b> 1.02  <b>Free ridership</b> 9%  <b>Spillover</b> 11%  <b>Method:</b> SAG deemed NTG ratio based on GPY1 evaluation research.</p>
GPY4	<p><b>NTG</b> 1.02  <b>Free ridership</b> 9%  <b>Spillover</b> 11%  <b>Method:</b> NTG values for GPY4 were deemed using values from GPY3, and reported in Table 14 of the Nicor Gas filed Energy Efficiency Plan for GPY4-GPY6.</p>
GPY5	<p><b>NTG</b> 1.02  <b>Free ridership</b> 9%  <b>Spillover</b> 11%  <b>Method:</b> No new research. Values based on GPY1 evaluation research.</p>
GPY6	<p><b>NTG</b> 1.02  <b>Free ridership</b> 9%  <b>Spillover</b> 11%  <b>Method:</b> No new research. Values based on GPY1 evaluation research.</p>
GPY7	<p><b>NTG:</b> 1.02  <b>Method:</b> No new research. Retained GPY6 final value.</p>

Source: [http://ilsagfiles.org/SAG\\_files/NTG/2017\\_NTG\\_Meetings/Final/Nicor\\_Gas\\_NTG\\_Summary\\_GPY1-7\\_2017-03-01\\_Final.pdf](http://ilsagfiles.org/SAG_files/NTG/2017_NTG_Meetings/Final/Nicor_Gas_NTG_Summary_GPY1-7_2017-03-01_Final.pdf)

## Appendix 4: Survey Instruments

### ComEd C&I Retro-Commissioning Program RCx Participant Survey August 8, 2017

	Topics	Questions
<b>Background</b>	Subject background	B1-B3
	Project background	B4-B5B
<b>Marketing and Outreach</b>	Program awareness, best methods to reach customer, most persuasive content	MK1-MK7
<b>Free Ridership Program Factors</b>	Program factors, including the free study, incentive, assistance, program-affiliated recommendations	FR1-FR1G, FR2
	Potential Program factors, including previous experience, organizational policy.	FR1H-FR1M
	Counterfactual	INC1-FR3
<b>Spillover &amp; Channeling</b>	Incentive-eligible measures installed without applying for incentives	SO1-SO2B
	Participation in additional programs; additional facilities participating in RCx	CH1-CH2B
<b>Program Design</b>	Building Operator Training	PD4-PD5A
	Program elements, energy benefits, non-energy benefits	PS1-PS2
<b>Program Satisfaction</b>	Recommendations and Feedback	PS3-PS4
	Ownership, FTE, business size	F1-F2
<b>Firmographics</b>	Incentive-eligible measures installed without applying for incentives	SO1-SO2B

Note: The survey questions and measure loops will allow data collection to estimate free ridership and spillover for the gas utility program partners (Nicor Gas, Peoples Gas, and North Shore Gas).

### Sample Fields

ODCID	OPTIMIZATION_MEASURE1
PHONE	OPTIMIZATION_MEASURE2
CALLCENTER	MEASURE_LIST
CONTACTNAME	STUDY_VALUE
PATH	PATH
FACILITY	
ADDRESS	
DATE	
CXAGENT	
MEASNUM	
NSAME	
ESO	
SPR	
ESP	
SCHEDUELING_MEASURE	

### Introduction

Hello, this is \_\_\_\_\_ from <CALLCENTER> calling on behalf of ComEd regarding your company's participation in the Retro-Commissioning Building <PATH> Program. May I please speak with <CONTACTNAME>?

Our records show that <FACILITY> participated in the ComEd Energy Efficiency Retro-Commissioning Program. I am calling to conduct a follow-up study about your firm's participation. I was told you're the person most knowledgeable and most involved with the retro-commissioning process. Is this correct? [IF NOT, ASK TO BE TRANSFERRED TO DECISION MAKER OR SOMEONE FAMILIAR WITH THE BASIS FOR THE DECISION TO PARTICIPATE. RECORD NAME & NUMBER.]

[IF NEITHER DECISION MAKER OR SOMEONE FAMILIAR WITH THE BASIS FOR THE DECISION TO PARTICIPATE, TERMINATE AND CALL REFERRAL]

This survey will take about 25 minutes. To thank you for your time, we would like to send you a \$50 VISA gift card for completing this survey. Is now a good time? [If no, schedule call-back]

(IF NEEDED: Is it possible that someone else dealt with the retro-commissioning project?)

## Retro-Commissioning Background

### Qualifiers

I would like to ask you a few questions about your company's decision to perform retro-commissioning at your facility.

- Q1 First, according to our records, you participated in the <PATH> Program run by ComEd.  
[IF NEEDED: (All but MBCx) The Program promotes energy efficiency improvements in commercial facilities. The program offers fully-funded technical assessments to identify and implement applicable, low-cost savings measures. (For MBCx) The program promotes energy efficiency improvements in commercial facilities. It offers \$0.07 per kWh of verified savings.]  
Do you recall participating in this Program?
1. Yes
  2. No
  98. (Don't know)
  99. (Refused)

[ASK IF Q1=1]

- Q2. Next, I'd like to confirm the following information regarding your participation in the Program. I understand that you retro-commissioned <FACILITY> at <ADDRESS>. The retro-commissioning study was completed by <CXAGENT> and you implemented about <MEASNUM> improvement/improvements.  
Does that sound right?
1. Yes
  2. No
  00. Mostly correct (RECORD INCONSISTENCY)
  98. (Don't know)
  99. (Refused)

[ASK IF Q1=2,98,99 OR Q2=02,98,99]

INT70. (Thank respondent and ask if there is another person who might be familiar with the company's retro-commissioning experience. GATHER INFO THEN TERMINATE)

Name  
Position  
Phone  
Email

## Background

### Interview Subject Background

- B1. What is your role at <FACILITY> with respect to the Retro-commissioning Program?
1. Owner
  2. Building or Facilities Manager
  3. Building for Facility Engineer
  0. Other [Detail]
  98. (Don't know)
  99. (Refused)

### Project Background

- B3. Please tell me why you decided to retro-commission this facility? [INTERVIEWER NOTE: Probe for additional reasons beyond that first offered.]
00. (RECORD VERBATIM) \_\_\_\_\_
98. (Don't know)
99. (Refused)
- B4. What, if anything, were the main factors that kept you from performing retro-commissioning before this project? [PROGRAMMING NOTE: Multiple Response. Record first 4 responses. 98=Don't know, 99=Refused] [DO NOT READ.]
1. (Was not aware of retro-commissioning services)
  2. (Did not understand the procedures and benefits of retro-commissioning)
  3. (The cost of having a retro-commissioning study and report prepared was too high)
  4. (Had inadequate in-house expertise to perform retro-commissioning )
  5. (Had insufficient in-house staffing to carry out recommendations made in retro-commissioning report)
  - 6.
  7. (Not aware of qualified providers)
  8. (Management was opposed to retro-commissioning)
  9. (New facility and did not need recommissioning until now)
00. (Other, specify)
98. (Don't know)
99. (Refused)



## Marketing and Outreach

- MK1. How did you first hear about the <PATH>? [PROGRAMMING NOTE: Multiple Response. Record first 4 responses. 98=Don't know, 99=Refused] [DO NOT READ.]
1. Calling campaign by utility/implementer
  2. Retro-commissioning service provider (RSP)
  3. Trade Ally (TA) for another Energy Efficiency program
  4. Nexant - the program implementer
  5. ComEd Account manager
  6. ComEd Website
  7. Friend, colleague, or word of mouth
  8. Contractor
  9. ComEd's marketing material – case studies, fact sheets, marketing video
  10. Nicor's marketing material – case studies, fact sheets, marketing video
  11. People's Gas/North Shore Gas' marketing material – case studies, fact sheets, marketing video
  12. Industry event or presentation
  13. ComEd Energy Efficiency Program outreach staff
  14. Email
  15. E-Newsletters
  00. (Other, specify)
  98. (Don't know)
  99. (Refused)
- MK2. What source of information was most persuasive in convincing your company to participate in retro-commissioning?  
[PROGRAMMING NOTE. Multiple Response. Record up to 3 responses. DO NOT READ.]
1. Presentation or workshop
  2. Program overview sheet
  3. Case Study
  4. Utility website(s)
  5. Direct Mail
  6. Fact sheets
  7. Program Forms
  00. Other, please specify
  98. (Don't know)
  99. (Refused)
- MK3. I'm going to list some information sources and I'd like you to tell me how useful you would find each option when you consider participating in a retro-commissioning program. Please rate the usefulness to you on a scale of 0 to 10, where 0 means 'Not at all useful' and 10 means 'Extremely useful'? [SCALE 0-10; 98=don't know, 99=Refused]
- A. Case studies from businesses in your industry
  - B. Case studies from businesses that are approximately the same size as your business
  - C. Fact sheets detailing the program or retro-commissioning, in general
- MK3AA. What other information would you find useful to in order to make a decision about participating in the program?
00. (OPEN END)
  96. No other materials
  98. (Don't know)

99. (Refused)

## NTG Module

### Free Ridership Program Factors

FR1. Now, I'm going to ask you to rate the importance of several factors that might have influenced your decision to conduct the retro-commissioning study and implement energy-saving improvements at your facility. Using a scale from 0 to 10, where 0 means 'not at all important' and 10 means 'extremely important', how important in your decision to conduct the study and commit the funding for retro-commissioning was... [FOR FR1A-N, RECORD 0 to 10; 96=Not Applicable; 98=Don't Know; 99=Refused.][If needed: How important in your DECISION to conduct the study and commit the funding to perform the ComEd sponsored retro-commissioning was...]

#### **Program Factors** [ROTATE FR1A-G]

FR1A. [Ask if Path <> MBCx] The free retro-commissioning study worth <STUDY\_VALUE>

FR1Aa. [Ask if Path = MBCx] The retro-commissioning program incentives worth <STUDY\_VALUE>

FR1B. The recommendation from <CXAGENT>

FR1C. The information from the Retro-Commissioning Program

FR1D. The recommendation from your ComEd Account Manager

FR1E. The technical assistance from <CXAGENT> to support recommendations

FR1F. ComEd marketing materials or presentation

FR1G. Information about the program from your gas utility

#### **Potential Program Factors** [ROTATE FR1H-L, End with FR1N]

FR1H. A recommendation from your company's management

FR1J. Previous experience with retro-commissioning

FR1Ja. [Ask if FR1J >7, Otherwise, Skip] Did you receive a free retro-commissioning study from ComEd on your previous project?

1. Yes, we received a free study from ComEd

2. No free study from ComEd

98. Don't Know

99. Refused

FR1K. A recommendation from your peers – either internal or external

FR1Ka. [Ask if FR1K >7, Otherwise, Skip] Did your peer specifically mention the retro-commissioning program from ComEd?

1. Yes

2. No

98. Don't Know

99. Refused

[NOTE: FR1Ka=2 is a Non-Program Factor]

FR1Kb. [Ask if FR1K >7 and FR1Ka=1, Otherwise, Skip] Do you know if your peer received a free study or an incentive for retro-commissioning from ComEd?

1. Yes, a free study or incentive from ComEd

2. No incentive from ComEd

98. Don't Know

99. Refused

[NOTE: FR1Kb=1, exclude, FR1Kb=2 is a Program Factor]

FR1L. Trade organization publication or presentation

FR1La. [Ask if FR1L >7, Otherwise, Skip] Did the article or presentation specifically mention ComEd or your gas company?

1. It specifically mentioned ComEd

2. It specifically mentioned my gas company
3. It was about retro-commissioning and did not specifically mention ComEd
98. Don't Know
99. Refused

[NOTE: FR1La = 1 is a Program Factor]

FR1M. Were there any other factors that we haven't discussed that were influential in your decision to perform the retro-commissioning?

00. Yes (please describe:)
96. No
98. (Don't know)
99. (Refused)

FR1Ma [Ask if FR1M = 00, Otherwise, Skip] How would you rate the influence of that factor, using the same 0-10 scale? [RECORD 0 to 10; 98=Don't Know; 99=Refused.]

FR1N. [Ask if FR1B, FR1C, FR1D, or FR1F is >7, Otherwise, Skip] What specific benefits of retro-commissioning did you learn from ComEd or your Service Provider that were important in your decision to conduct the study? [Open Ended, 98-Don't Know, 99-Refused]

FR2. If you were given a TOTAL of 100 points that reflect the importance in your decision to participate in this retro-commissioning project, and you had to divide those 100 points between 1) the program and 2) any other factors,

A. How many points would you give to the program? Program factors include [READ IN FIRST THREE HIGHEST FROM FR1A-G IF > 7].

Count of Program factor points \_\_\_\_\_ [Record 0-100, 998=Don't know, 999=Refused]

B. And how many of those same 100 points would you give to the importance of other factors, such as [READ IN FR1H, FR1j if FR1Ja = 2, FR1K if FR1Ka = 2, FR1L if FR1La = 2, ]? [PROGRAMMING

Count of Non-Program factor points \_\_\_\_\_ [Record 0-100, 998=Don't know, 999=Refused]

NOTE: Responses should sum to 100.]

[SKIP IF OTHERPTS==FR2B OR FR2A=998,999 OR FR2B=998,999]

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 <QFR2A> points to factors like [READ IN FIRST THREE HIGHEST FROM FR1A-G IF > 7]. Does that mean you would give <OTHERPTS> points to other factors such as [READ IN FR1J if FR1Ja=2, FR1K if FR1Ka=2, ]?

1. Yes
2. No [SKIP TO FR3]
98. (Don't know)
99. (Refused)

If (FR2A is >70 AND all FR1A-F are <3) OR (FR2B is <30 AND any FR1H-L is >7), then ask:

FR3. Could you tell me more about the importance of these factors in your decision to participate in the <PATH>?

## Free Ridership Non-Program Factors

FR4. If the program had not been available, what is the likelihood that you would have conducted the study on your own? Please rate the likelihood on the 0-10 scale. [If necessary, "where 0 means extremely unlikely and 10 means extremely likely"] [SCALE 0-10, 98=Don't Know, 99=Refused]

## NTG Measure Loops

### <MEASURELOOP>

[PROGRAMMING NOTE: Sample data will include top two measure groups. Enter those two loops, disregarding the third, for each survey]

---BEGIN Scheduling and Optimization [Scheduling]---

Now I'm going to ask you a few questions about changes made through the program to your system schedules based on the time of day or year. An example would be adjusting air handler start times or implementing night set-backs. As you answer these questions, please think about the <SCHEDULING\_MEASURE>.

FRML1\_1. Prior to the retro-commissioning study, did you regularly modify the HVAC equipment scheduling, either with facility staff or a maintenance contractor?

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

[Ask If FRML1\_1=1, Else Skip]

FRML2\_1. Do your equipment scheduling changes always follow recommendations from the retro-commissioning program?

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

FRML3\_1. Were you aware of the need to change equipment schedules using the building automation system prior to the retro-commissioning study?

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

FRML4\_1. How familiar were you with scheduling changes recommended through the retro-commissioning study? Please rate your familiarity on a scale of 0-10, where 0 means 'not at all familiar' and 10 means 'extremely familiar'.

[SCALE 0-10, 98=Don't Know, 99=Refused]

FRML5\_1. How likely would you have been to implement the same recommended schedule without the Retro-commissioning Program? Please use a 0-10 scale, where 0 means 'not at all likely' and 10 means 'extremely likely'.

[SCALE 0-10, 98=Don't Know, 99=Refused]

FRML6\_1. If the Retro-commissioning program had not existed, and you had not received the information and assistance from the program, do you think it's likely that you would have done all, some, or none of the recommended scheduling changes without the program?

- 1. All
- 2. Some
- 3. None
- 98. (Don't know)
- 99. (Refused)

[Ask If FRML6\_1=1, 2 or 98, Else Skip]

FRML7\_1. And, if the retro-commissioning program did not exist, when would your own scheduling project have taken place? Would it have been at the same time, within 1 year, 1-2 years later, 2-3 years later, 3-4 years later? Again, this is if the retro-commissioning program did not exist.

1. At the same time
2. Within 1 year
3. 1-2 years later
4. 2-3 years later
5. 3-4 years later
98. (Don't know)
99. (Refused)

---END Scheduling ---

<MEASURELOOP>

---BEGIN Optimization Measure 1 [OPTIMIZATION\_MEASURE1]---

Now I'm going to ask you a few questions about systems optimized to respond to building loads or outdoor weather conditions. These measures might include setpoint changes in response to outdoor temperatures or economizer control. As you answer these questions, please think about the

<OPTIMIZATION\_MEASURE1>

FRML1\_2. Prior to the retro-commissioning study, did you regularly check the equipment to find the optimal settings?

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

[Ask If FRML1\_2 =1, Else Skip to FR3\_2]

FRML2\_2. When you make changes to optimize settings on your own, do you always make these changes with the Building Automation System so those changes endure or persist?

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

FRML3\_2. Were you at all aware of the need to optimize settings prior to the retro-commissioning study?

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

FRML4\_2. How familiar were you with the task of optimizing the equipment settings as recommended through the retro-commissioning study? Please rate your familiarity on a scale of 0-10, where 0 means 'not at all familiar' and 10 means 'extremely familiar'. [SCALE 0-10, 98=Don't Know, 99=Refused]

FRML5\_2. How likely would you have been to reset the equipment to save energy without the Retro-commissioning Program? Please use a 0-10 scale, where 0 means 'not at all likely' and 10 means 'extremely likely'. [SCALE 0-10, 98=Don't Know, 99=Refused]

Net-to-Gross Research Results from EPY9/GPY6 for the Coordinated Utility Retro-Commissioning Program

August 25, 2018 (Interim Update September 14, 2018)

Page 22 of 23

FRML6\_2. If the Retro-commissioning program had not existed, and you had not received the information and assistance from the program, do you think it's likely that you would have done all, some, or none of the same equipment optimization without the program?

1. All
2. Some
3. None
98. (Don't know)
99. (Refused)

[Ask If FRML6\_2=1, 2 or 98, Else Skip]

FRML7\_2. Would your own equipment setpoint optimization – without the Retro-commissioning Program -- have taken place at the same time, within 1 year, 1-2 years later, 2-3 years later, 3-4 years later? Again, this is without the retro-commissioning program.

1. At the same time
2. Within 1 year
3. 1-2 years later
4. 2-3 years later
5. 3-4 years later

---END <Optimization\_Measure1> ---

<MEASURELOOP>

---BEGIN Optimization Measure 2 [<OPTIMIZATION\_MEASURE2>]---

Now I'm going to ask you a few questions about systems optimized to respond to building loads or outdoor weather conditions. As you answer these questions, please think about the <OPTIMIZATION\_MEASURE2>

FRML1\_3. Prior to the retro-commissioning study, did you regularly check the equipment to find the optimal settings?

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

[Ask If FRML1\_3 =1, Else Skip]

FRML2\_3. When you make changes to optimize settings on your own, do you always make these changes with the Building Automation System so those changes endure or persist?

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

FRML3\_3. Were you at all aware of the need to optimize settings prior to the retro-commissioning study?

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

FRML4\_3. How familiar were you with the task of optimizing the equipment settings as recommended through the retro-commissioning study? Please rate your familiarity on a scale of 0-10, where 0 means 'not at all familiar' and 10 means 'extremely familiar'. [SCALE 0-10, 98=Don't Know, 99=Refused]

FRML5\_3. How likely would you have been to optimize the equipment to save energy without the Retro-commissioning Program? Please use a 0-10 scale, where 0 means 'not at all likely' and 10 means 'extremely likely'. [SCALE 0-10, 98=Don't Know, 99=Refused]

FRML6\_3. If the Retro-commissioning program had not existed, and you had not received the information and assistance from the program, do you think it's likely that you would have done all, some, or none of the same equipment optimization without the program?

1. All
2. Some
3. None
98. (Don't know)
99. (Refused)

[Ask If FR6\_3=1, 2 or 98, Else Skip]

FRML7\_3. Would your own equipment setpoint optimization – without the Retro-commissioning Program -- have taken place at the same time, within 1 year, 1-2 years later, 2-3 years later, 3-4 years later? Again, this is without the retro-commissioning program.

1. At the same time
2. Within 1 year
3. 1-2 years later
4. 2-3 years later
5. 3-4 years later

•

## Spillover & Channeling

- SO1. Our records show that you installed:
  - <Optimization 1>
  - <Optimization 2>
  - <Scheduling>
  - <Other 1>
  - <Other 2>
- through your <PATH> project. Since completing your project, have you adopted any additional energy efficient **operational improvements**? This does not include any equipment you've installed. We're only asking about improvements made not through a ComEd program.
  1. Yes
  2. No
  98. (Don't know)
  99. (Refused)

• [If SO1=1, Ask SO1A, Else Skip to SO1C]

• SO1A. How important was your experience in the retro-commissioning program in your decision to make these additional changes? Please use a 0-10 scale, where 0 means 'not at all important', and 10 means 'extremely important'

• [SCALE 0-10, 96=Not Applicable, 98=Don't Know, 99=Refused]

• SO1B. Can you explain how your experience with <PATH> influenced your decision to adopt the additional improvements? [OPEN ENDED, 98=Don't know, 99=Refused]

•

Net-to-Gross Research Results from EPY9/GPY6 for the Coordinated Utility Retro-Commissioning Program

August 25, 2018 (Interim Update September 14, 2018)

Page 24 of 25

- SO1C Have you installed any other energy efficient improvements that we haven't talked about? (if needed: "I am asking about actual equipment you might have installed")

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

- [If SO1C=1, Ask SO1D, Else Skip]

- SO1D What did you install? [OPEN ENDED, 98=Don't know, 99=Refused]

- SO1E. How important was your experience in the retro-commissioning program in your decision to make these additional changes? Please use a 0-10 scale, where 0 means 'not at all important', and 10 means 'extremely important'

- [SCALE 0-10, 96=Not Applicable, 98=Don't Know, 99=Refused]

- SO1F. Can you explain how your experience with <PATH> influenced your decision to adopt the additional improvements? [OPEN ENDED, 98=Don't know, 99=Refused]

- **Channeling**

- CH1. Have you installed any improvements that were part of another ComEd or gas utility program since completing your retro-commissioning project?

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

- [If CH1=1, Ask CH1A, Else Skip to CH2]

- CH1A. If so, what did you install? [PROGRAMMING NOTE: Multiple Response. Record all responses. 98=Don't know, 99=Refused] [Do not read.]

- 1. Lighting
- 2. Cooling
- 3. Motors
- 4. Refrigeration
- 5. Compressed Air
- 6. Fans
- 7. Controls
- 8. Heating
- 00. Other, please specify
- 98. Don't Know
- 99. Refused

- CH2. Has your participation in the Retro-commissioning Program motivated you to consider participating in other ComEd or gas utility energy efficiency programs?

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

- [ASK IF CH2=1, Else Skip to CH2B]

- CH2A. Which programs you are considering? [DO NOT READ. MULTIPLE RESPONSE, ACCEPT ALL ANSWERS]



1. Standard
2. Custom
00. Other, please specify
98. (Don't know)
99. (Refused)

[ASK IF CH2=2 OR 8, Else Skip to PD1]

- CH2B Could you tell me what barriers, if any, are preventing you from considering other programs?

[PROGRAMMING NOTE. Multiple Response. Record first 4 responses. 98=Don't know, 99=Refused] [DO NOT READ]

1. Timing within the budget year
2. Timing will disrupt our operations
3. Not convinced of the benefits
4. Not aware of qualified providers
5. Management is opposed
6. Cost/lack of financial resources
7. Lack of staff/personnel resources
00. Other, please specify
98. (Don't know)
99. (Refused)

## Process Module

### Program Design

PD1. What do you see as the main strengths of the Retro-Commissioning Program?

[PROGRAMMING NOTE. Multiple Response. Record first 4 responses. 98=Don't know, 99=Refused] [DO NOT READ.]

1. Helps reduce the company's energy bills
2. Saves energy
3. Free study
4. Improves the performance of equipment
5. Prolongs equipment life / service-ability
6. Trains facility staff on efficient building operations
7. Helps building staff learn about building
8. Turnkey operation
00. Other, please specify
98. (Don't know)
99. (Refused)

PD2. What do you think are the main barriers to participating in the program? [PROGRAMMING NOTE. Multiple Response. Record first 4 responses. 98=Don't know, 99=Refused] [Do not read.]

1. Paperwork too burdensome
2. Application too onerous
3. Incentives or free study not worth the effort or required financial commitment
4. Program is too complicated
5. Retro-commissioning is too complicated
6. Staff did not understand the importance of RCX.
7. Staff's time commitment is too great
8. Timing is inconvenient to the business cycle
9. No barriers or concerns
00. (Other, please specify)

98. (Don't know)

99. (Refused)

PD3. What could the program do to encourage more enduring changes in your maintenance and operations?  
[OPEN END. 98=Don't know, 99=Refused]

PD4. [Ask if <PATH> = Tune-Up, Grocery, RCxpress] Would you be interested in any type of building operator training to improve your ability to maintain the energy efficiency improvements from retro-commissioning?

1. Yes

2. No

98. (Don't know)

99. (Refused)

[Ask if PD4=1 or 98, Else Skip to PD5]

PD4A. Can you describe what the ideal training would look like? (Probe for length, topics covered)

[OPEN END. 98=Don't know, 99=Refused]

PD5. [Ask if <PATH> = Tune-Up, Grocery, RCxpress] Are you interested in any materials or resources that can be available after the project to help you maintain the energy efficiency improvements from retro-commissioning?

1. Yes

2. No

98. (Don't know)

99. (Refused)

[Ask if PD5=1 or 98, Else Skip to PS1]

PD5A. What should be included in this material? (Probe for topics covered, amount of detail)

[OPEN END. 98=Don't know, 99=Refused]

## Program Satisfaction

PS1. Now I'd like to ask you to rate your satisfaction with various elements of the program on a scale of 0 to 10, where 0 is 'not at all satisfied' and 10 is 'extremely satisfied'. How would you rate your satisfaction with...?

[SCALE 0-10; 96=not applicable, 98= Don't know, 99=Refused] [Rotate order] [INTERVIEWER NOTE: Ask "Why did you rate it that way" for comments on any response <6]

- A. The information provided in the retro-commissioning study
- B. The program administrator - Nexant
- C. The ComEd Energy Efficiency Program (ComEd) staff
- D. Your gas utility Energy Efficiency Program staff [Nicor or Peoples' Gas/North Shore Gas]
- E. Your Service Provider, <CXAGENT>
- F. The Retro-Commissioning program overall
- G. Anticipated energy benefits
- H. Realized energy benefits
- I. Anticipated non-energy benefits, such as increased comfort or lowered maintenance costs
- J. Realized non-energy benefits
- K. ComEd overall

PS2. Now I'd like to focus more deeply on your satisfaction with the program as you experienced it at your facility. Again, I welcome any comments, but need you to rate your satisfaction on a scale of 0 to 10, [IF NEEDED: where 0 is 'not at all satisfied' and 10 is 'extremely satisfied']. How would you rate your satisfaction with...?

[SCALE 0-10; 96=not applicable, 98=Don't know, 99=Refused] [Rotate order] [INTERVIEWER NOTE: Ask "Why did you rate it that way" for comments on any response <6]

- A. The accuracy of the study, with respect to how your facility was described
- B. The accuracy of price estimates listed in the study to have the work done
- C. Any assistance in finding a contractor to perform the work recommended through the study
- D. Your ability to act on recommendations from the study
- E. The implementation steps completed by the service provider
- F. The study thoroughness or depth of the energy savings investigation
- G. The amount of low-cost savings identified
- H. The application process
- I. The number of required meetings
- J. The amount of your staff's time required
- K. [Ask if MBCx, Otherwise Skip] The security of your data while sharing access to the building automation system
- L. The number of evaluation and measurement checks during and following your project
- M. Your ability, with current staff, to maintain the savings through the Study

PS3. I only have a few questions left. Based on your overall experience, what would you tell a friend or peer about the Retro-Commissioning program?

[OPEN END Record verbatim. 98=Don't know, 99=Refused]

PS3A Would you recommend the Retro-Commissioning program to your peers inside or outside of your organization?

- 1. Yes
- 2. No
- 3. Maybe
- 98. (Don't know)
- 99. (Refused)

PS4. How do you think this program could be improved? [PROGRAMMING NOTE. Multiple Response. Record first 4 responses. 98=Don't know, 99=Refused] [DO NOT READ.]

- 1. Greater publicity
- 2. Longer engagement with RSP to implement more measures
- 3. Key Account Executives provide more information
- 00. Other, please specify
- 96. No recommendations
- 98. (Don't know)
- 99. (Refused)

## Firmographics

F1. Does your company own, rent or manage this facility?

- 1. Own
- 2. Rent
- 3. Manage
- 00. Other, please specify
- 98. (Don't know)
- 99. (Refused)

- F2. Does your company own the HVAC equipment?
1. Own
  2. Lease as part of the facility contract
  00. Other, please specify
  98. (Don't know)
  99. (Refused)

## Closing

- C1. Those are all of the questions I have. Is there anything you would like to add, anything that I forgot to ask about?

- [CREATE FOLLOWUP=1 IF SO1A >4 and/or SO1E>4, ELSE 0]

- C2. May we contact you if we have any additional questions or to clarify any of your answers?
1. Yes
  2. No

- C3. [Ask if C2 = 1, Else Skip] What is the best way to reach you? [Read back responses to confirm spelling or phone number]
1. Phone
  2. Email
  00. Other

### [ASK IF FOLLOWUP = 0]

- C4. Would you like us to email a \$50 VISA electronic gift card, or mail you a traditional gift card? [NOTE: we can make a donation in the respondent's name to the charity of their choice if they do not want the incentive.]
1. Email
  2. Mail
  3. Donate to a charity

### [Ask if C4=1]

- C4A. What address should we email the gift card to?
1. [Email]

### [Ask if C4=2, 3]

- C4B. What address should we mail the gift card to?
1. Street
  2. City
  3. State
  4. Zip code

- [If SO1A >4 and/or SO1E>4, Ask]

- SO1G. I would like to have another person follow up with a few brief questions about these additional improvements. When would be the best time for him to call you?
  1. [date]
  2. [time]
- 98. Don't Know

- 99. Refused

[ASK IF FOLLOWUP = 1]

C5 We will phone you on <SO1G: 1> at <SO1G: 2> with those few follow-up questions. The person who calls you back will ask you where you would like us to send your \$50 VISA gift card. [Follow-up will ask C4-C4B]

Thank you very much for your time today. The information you shared is very valuable!

## RSP Survey Instrument

ComEd C&I Retro-Commissioning Program –RSP Interview Guide  
Retro-commissioning  
August 25, 2017  
**DRAFT**  
Service Provider Guide PY9

Interviewee: \_\_\_\_\_ Date: \_\_\_\_\_

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

Interviewer: \_\_\_\_\_

*[Note to Reviewer] The Interview Guide is a tool to guide process evaluation interviews of service providers. 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 interviews will be audio taped.*

*The respondents may have different exposure to different aspects of the program. Customization of questions will be required.*

*When “retro-commissioning” is written out, it refers to all four offerings. Each offering, when referenced specifically, is abbreviated (RCx, RCxpress, Tune-Up, MBCx).*

### Introduction

Hi, may I please speak with [name from list]?

My name is \_\_\_ and I'm calling from Navigant Consulting, an independent research firm, on behalf of ComEd. We're talking to **contractors who are currently service providers** for the ComEd Energy Efficiency Retro-Commissioning Program. **We may have spoken with you or someone from your firm in past years as a part of the process evaluation** completed at that time.

We are interested in any feedback you may have regarding your firm's involvement in this program and any feedback you have received about the program from your customers. ComEd plans to use this information to continue to improve the energy efficiency programs and services it offers to business customers.

Would you be willing to speak with me for about 30 minutes? Your responses will be kept strictly confidential.

### Interview Subject Background

- S1. Would you please tell me your title at <COMPANY>?
- S2. How many years have you worked there?
- S3. What are your roles at <COMPANY> with respect to the Retro-commissioning Program?
- S4. Is your firm currently registered as a service provider or trade ally for other Commercial & Industrial program offerings from ComEd?
  1. Yes [Probe for which programs, why they find this beneficial]

2. No [Probe for why not, what might entice them to expanding the programs they work with]
98. Don't Know
99. Refused

### Program Processes

1. Our records show that <COMPANY> completed [<COUNT RCx> RCx, <COUNT RCxpress> RCxpress, <COUNT Tune-Up> Tune-Up] [[<COUNT MBCx> MBCx] project(s) during the current extended program year (PY9). Does that sound right?  
[Ask if performed RCxpress]  
X1. How have customers responded to changes in RCxpress? [Probe for change to 5 phase, potentially pulling some RCx customers into RCxpress]  
  
X2. Did the changes to RCxpress impact your business? If so, how?  
  
X3. If MBCx was available to your customers, would you recommend it to them? [Probe for the benefits to customers, impact on the RSP's business, if they would offer the service, if MBCx would impact their ability to return to a customer to perform RCx services in the future.]  
[Ask if performed Tune-Up]  
T1. Are customers challenged at all in offering the financial and staffing resources required to engage in the Tune-Up projects? [Probe for challenges, ways to address them]  
T2. What training would be appropriate to increase the satisfaction and persistence of savings at smaller facilities? [Probe: training for the staff responsible for energy management, in house or contract.]  
T3. What materials might increase persistence at facilities that do not have staff dedicated to energy management. [Probe: what materials could be offered to help contracted engineering vendors maintain the desired settings]  
[Ask if performed MBCx]  
M1. How do you expect your customers in midsized facilities would respond to the opportunity to engage in MBCx?  
M2. How have customers responded to the possibility of extending their MBCx for another year or more? [Probe for impact on customer's savings, engagement, potential to involve in other projects. Impact on RSP(?) of extended involvement.]  
M3. Have you noticed any relationship between the size of the customer's facility staff and the benefit they see from MBCx?
2. How could customers be encouraged to engage in more of no-cost/low-cost measures projects recommended through the study but not implemented?
3. How can customers be encouraged to participate in other ComEd programs, such as Standard or Custom? [Probe: mechanics of this encouragement, impact on the RSP, RSP awareness of the available measures]
4. What would encourage RSPs like you to recommend more measures incented through other ComEd programs? [Probe: awareness measures and incentives, program eligibility and procedures, incenting the RSP, referral bonuses, challenges working with different ICs or program structures]
5. Do you see a benefit to keeping projects open for future development? [Probe: Why, why not. If yes, how would the RSP like to see the extension work, is this a mid-point between closing the project and MBCx, kept open for future development if initial recommended improvements aren't adopted, what impact might it have on their margins?]

[Ask 6-8 of all <>MBCx]

6. When would be optimal to return to RCx after the initial RCx? *[Probe for measure-specific or category-specific information]*
  7. Do you see a benefit to MBCx for your RCx customers? *[Probe: Why, why not. If yes, how would they recommend that the transition work, is their firm considering offering MBCx?]*
  8. Would your customers be interested in on-going data access to monitor persistence of savings? *[Probe for advantage of building operating data or utility data on persistence and ability to impact savings.]*
- [Ask All]**
9. In general, how satisfied have you been with the program participation process? *[PROBE FOR: participant enrollment, identification of measures, implementation, verification, project close-out]*
    - 9A. Are there aspects of the program that you think work particularly well? Please explain.
    - 9B. Are there aspects of the program that could be improved? Please explain.
  10. Did you have any difficulty meeting the required deliverables for each project milestone *(PROBE FOR: timeline, required information, budget constraints)*? If so, please explain.
  11. Of the **<PROJECT COUNT>** customers with whom you completed utility-sponsored retro-commissioning projects from June 2016 to December 2017, approximately how many did you have a prior working relationship with? *[Probe: How many of these new clients do they expect to continue working with, and doing what.]*
  12. Have you made any changes to your business as a result of your participation in the retro-commissioning program? *[PROBE: hired more staff, opened up new offices, changed marketing, changed approach to retro-commissioning investigations.]*

#### **NTG Section**

#### **Program Influence on Service Provider**

- PISP1. Have you participated in any program webinars, meetings, or training sessions, or received any educational materials from the program?
  - 1 YES
  - 2 NO
  - 98 Don't Know
- PISP2. Have you ever brought a utility or Nexant program staff member to customer sites with you?
  - 1 YES
  - 2 NO
  - 98 Don't Know
- [IF PISP2=1, ASK PISP2a and b, ELSE SKIP TO PISP3]



- PISP2a. About how many times have you brought a utility or Nexant program staff member with you?
  - [NUMERIC OPEN ENDED]
  - 98 Don't know
  
- PISP2b. How helpful are those joint visits with program staff in promoting a study or energy efficiency improvements?
  - [0-10 scale, endpoints 0 "Not at all helpful" and 10 "Extremely helpful"]
  - 98 Don't Know
  
- PISP3. Have you received any marketing materials from the program for you to pass along to your customers?
  - 1 YES
  - 2 NO
  - 98 Don't Know
  
- [IF PISP3=1, ASK PISP3a, ELSE SKIP TO PISP4]
- PISP3a. How much influence have those marketing materials had on your ability to promote studies to your customers?
  - [0-10 scale, endpoints 0 "Not at all influential" and 10 "Extremely influential"]
  - 98 Don't Know
  
- 
  
- PISP4. If the program did not exist this year, how would your business be different, if at all?
  - [OPEN ENDED]
  - 98 Don't Know
  
- PISP5. If the program did not exist this year, what would be different about the services you provide to customers?
  - [OPEN ENDED]
  - 98 Don't Know

### No Program

NP1. According to program records, you completed [NUMSTUDIES] retro-commissioning studies between June 2016 and December 2017. If the program did not exist this year, how many studies do you think you would have completed in the same period?

[numeric answer]

98. Don't Know

NP2. Again, thinking about the [NUMSTUDIES] program studies that you completed between June 2016 and December 2017, if the program did not exist this year, how many studies of *comparable breadth and depth* do you think you would have completed in the same period?

[numeric answer]

98. Don't Know

### Direct Free Ridership

FR1. According to program records, between June 2016 and December 2017 your [NUMPARTICIPANTS] program participants went on to achieve [RSPSAVINGS] from implementing recommended energy efficiency improvements. What percent of these savings do you think those customers would have achieved if the program did not exist this year?

[numeric answer]

98. Don't Know

## Consistency Checks

IF ONE OF THE FOLLOWING CASES IS TRUE

NP1 >= .7* NUMSTUDIES	AND	FR1 < .5
NP1 <= .3* NUMSTUDIES	AND	FR1 > .5
NP2 >= .7* NUMSTUDIES	AND	FR1 < .5
NP2 <= .3* NUMSTUDIES	AND	FR1 > .5

THEN ASK CC1. ELSE SKIP.

CC1. Could you tell me more about the impact the program has had on the total savings your customers have achieved from your studies between June 2016 and December 2017.

- [OPEN ENDED]  
 98. Don't Know

## Spillover

LSO1. Our records indicate that you conducted [STUDYTYPE1QTY] [STUDYTYPE1] and [STUDYTYPE1QTY] [STUDYTYPE1] since June 1, 2016. Since then, have you conducted any studies with ComEd customers *without* program rebates?

1. Yes
  2. No [SKIP TO XYZ]
98. Don't Know [SKIP TO XYZ]

LSOA1. [ASK IF LSO1 = 1, ELSE, SKIP TO XYZ]

How influential do you think the program was on these additional studies conducted without program rebates?

- [0-10 scale, endpoints 0 "Not at all influential" and 10 "Extremely influential"]
- 98 Don't Know

LSOA2. [ASK IF LSO1 = 1, ELSE, SKIP TO XYZ]

If the program did not exist this year, how likely is it that your organization would still have conducted these non-rebated studies for ComEd customers?

- [0-10 scale, endpoints 0 "definitely WOULD NOT have conducted these studies" and 10 "definitely WOULD have conducted these studies"]
- 98 Don't Know

LSO2a. [ASK a and b IF AVERAGE (LSOA1, LSOA2) > 5.0, ELSE, SKIP TO LSO3]

Thinking about the savings that those non-rebated studies achieved, how would you describe those savings in terms of the [RSPSAVINGS] kWh that your studies achieved through the program. [IF NEEDED PROMPT FOR EITHER A PERCENTAGE OR MULTIPLIER OF RSPSAVINGS]

- [OPEN ENDED]
- 98 Don't Know

LSO2b. Please briefly describe where most of the savings from those non-rebated studies came from.

- [OPEN ENDED]
- 98 Don't Know

LSO3. [ASK IF LSO1 = 1, (AND ANY VALUE FOR LSOA1 and LSOA2), ELSE, SKIP TO ULSO1]

- Why did these studies not receive program rebates?

ULSO1. Since June 1, 2016, have you sold any other energy efficiency improvements to ComEd customers *without* ComEd rebates?

1. Yes
  2. No [SKIP TO 14]
98. Don't Know [SKIP TO 14]

ULSOA1. [ASK IF ULSO1 = 1, ELSE, SKIP TO 14]

How influential do you think the program was on these energy efficiency sales without ComEd rebates?

- [0-10 scale, endpoints 0 "Not at all influential" and 10 "Extremely influential"]
- 98 Don't Know

ULSOA2. [ASK IF ULSO1 = 1, ELSE, SKIP TO 14]

If the program did not exist this year, how likely is it that your organization would still have sold these non-rebated energy efficiency improvements for ComEd customers?

- [0-10 scale, endpoints 0 "definitely WOULD NOT have made these sales" and 10 "definitely WOULD have made these sales"]
- 98 Don't Know

ULSO2a. [ASK a and b IF AVERAGE (ULSOA1, ULSOA2) > 5.0, ELSE, SKIP TO ULSO3]

Thinking about the savings that those non-rebated sales achieved, how would you describe those savings in terms of the [RSPSAVINGS] kWh that your studies achieved through the program. [IF NEEDED PROMPT FOR EITHER A PERCENTAGE OR MULTIPLIER OF RSPSAVINGS]

[OPEN ENDED]

98 Don't Know

ULSO2b. Please briefly describe where most of the savings from those non-rebated sales of energy efficiency improvements came from.

[OPEN ENDED]

98 Don't Know

ULSO3. [ASK IF ULSO1 = 1, (AND ANY VALUE FOR ULSOA1 and ULSOA2), ELSE, SKIP TO 14]

Why did these sales of energy efficiency improvements not receive program rebates?

[OPEN ENDED]

98 Don't Know

### **Program Feedback & Recommendations**

13. Would your answer have been different for the different offerings (RCx, RCxpress, Tune-Up)? [\[Probe for how any of the offerings may differ from others.\]](#)

14. Have you received any other feedback from customers on the program? If so, can you please share an anecdote or two? [\[Probe: participation process and/or results of their project\]](#)

15. Are there adequate communication mechanisms in place to channel capital investment opportunities found during retro-commissioning programs to other ComEd programs? What might entice you to forward these opportunities to ComEd?

16. Do you have thoughts on how to help retro-commissioning customers improve persistence and their understanding of energy efficiency operations?

17. In general, how satisfied are you with the retro-commissioning program? Has it met your expectations? Please explain.

18. Do you have any additional recommendations or feedback for the evaluation?