



To: Erin Daughton, ComEd
CC: Jennifer Morris, ICC Staff; Jeff Erickson, Rob Neumann, Laura Agapay-Read
Cherlyn Seruto, Guidehouse
From: Christy Zook, Guidehouse
Date: September 21, 2021
Re: Net-to-Gross Research Results for ComEd Small Business Kits Program

Executive Summary

This memo presents the evaluation team’s results of the net-to-gross (NTG) research conducted in 2021 of ComEd’s Small Business Kits (SB Kits) Program using the Illinois Technical Reference Manual version 9.0 (TRM v9.0) methodologies.¹ This is the first time primary NTG research has been conducted for this program.² The evaluation team fielded participant free ridership and spillover surveys online in spring and summer of 2021. The free ridership research was conducted with 134 participants who received small business kits between August and December 2020 while the spillover research was conducted with 82 participants who received small business kits between January and July 2020.

These results will inform Guidehouse’s September 2021 recommendations to the Illinois Energy Efficiency Stakeholder Advisory Group (SAG) of NTG values to be used for this program in 2022 (as detailed at the end of this memo in Table 3).

Table 1 summarizes the SB Kits Program free ridership and spillover research findings. Guidehouse estimated a free ridership and spillover value for the program³.

Table 1. NTG Research Results for the ComEd SB Kits Program

| SB Kits | Free Ridership | Relative Precision @90% CI | Participant Spillover |
|---------------|----------------|----------------------------|-----------------------|
| Total Program | 0.19 | 6% | 0.13 |

Source: Guidehouse analysis of data from online surveys conducted with 2020 ComEd Small Business Kits Program participants

¹ Illinois Statewide Technical Reference Manual for Energy Efficiency, Version 9.0, Volume 4: Cross-Cutting Measures and Attachments.

² The NTG value used for CY2020 and CY2021 was based on the Small Business program.

³ Due to the number of completes achieved per measure type (LED, pre-rinse spray valve, and all other), Guidehouse recommends a program level free ridership estimate based on measure type savings weighted average.

Free Ridership and Spillover Research Representation

The evaluation team conducted participant free ridership research using a customer self-report approach through an online survey. Online survey respondents accessed the survey through a link in an email invitation from Guidehouse. The evaluation team fielded the free ridership surveys in spring and summer of 2021. Of the 2,439 SB Kits participants from August through December CY2020, 134 participants responded (a 5% response rate) to the free ridership survey. The evaluation team also completed an online spillover survey with 82 respondents from a census of 1,743 who had participated between January and July 2020. The evaluation team found that 13 of those respondents reported implementing energy efficient improvements that were not rebated.

Of the 134 participants who responded to the participant free ridership survey, Guidehouse excluded responses of 21 respondents from the free ridership analysis as they were not able to recall participating in the program. Guidehouse’s free ridership estimates are based on responses from the remaining 113 participants. All 82 completed spillover surveys were included in the spillover analysis.

Table 2 below presents the participant free ridership and spillover research representation.

Table 2. Participant Free Ridership and Spillover Decision Maker Research Representation

| NTG Component | Usable Contacts* | Target Completes | Actual Completes | Analyzed Completes† |
|------------------|------------------|------------------|------------------|---------------------|
| Free Ridership** | 2,439 | 240 | 151 | 116 |
| Spillover | 1,743 | 80 | 82 | 82 |

* Usable Contacts provides the number of participants with viable email addresses that were included in the free ridership and spillover samples.

† Analyzed Completes provides the count used to develop the free ridership and spillover estimates. Analyzed Completes excludes responses that failed consistency checks or lacked required data (discussed in the Appendix).

** Totals for free ridership actual completes and analyzed completes are greater than the values listed in the text above the table because one respondent could answer free ridership questions for two measures.

Source: Guidehouse analysis of data from online survey conducted with 2020 ComEd Small Business Kits Program participants

Free Ridership and Spillover Protocols

The evaluation team applied the Small Business free ridership algorithm with updates recently developed for the Illinois TRM by the SAG NTG Working Group.⁴ This algorithm does not

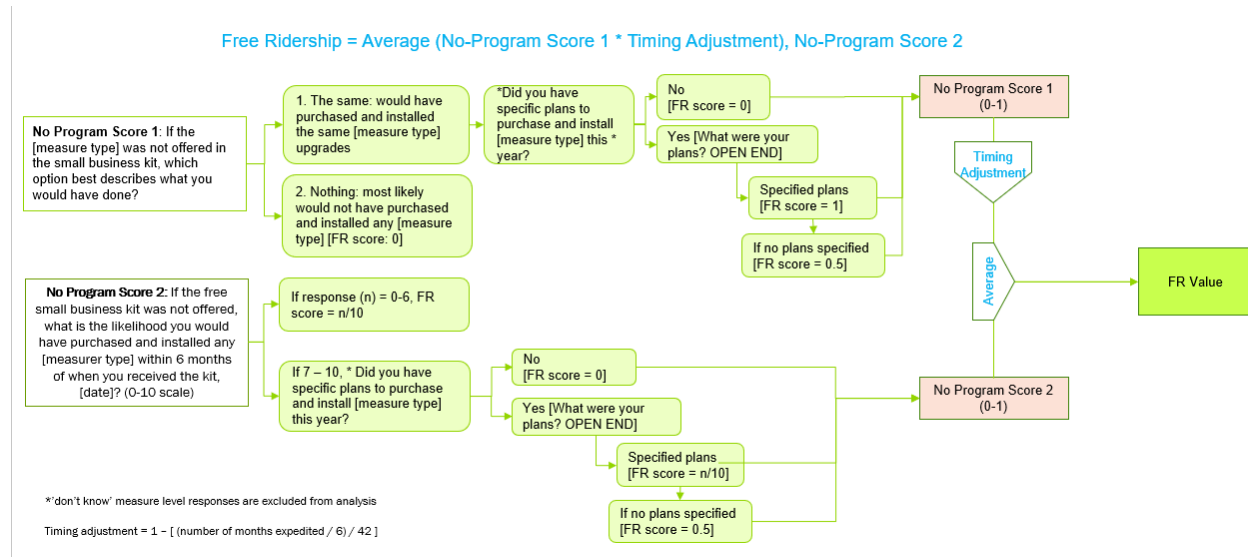
⁴ Working Group Updates are based on TRM v9.0 Core Non-Residential Algorithm, with updates based on (SAG) NTG Working Group consensus in 2020

include the Program Influence question because it is not applicable to a kits program. Guidehouse calculated spillover based on TRM v9.0 Section 3.2.1, Core Non-Residential Participant Spillover Protocol.

Participant Free Ridership Estimation

The diagram in Figure 1 describes the algorithm that Guidehouse used to calculate free ridership for the ComEd SB Kits Program.

Figure 1. SB Kits Free Ridership Algorithm

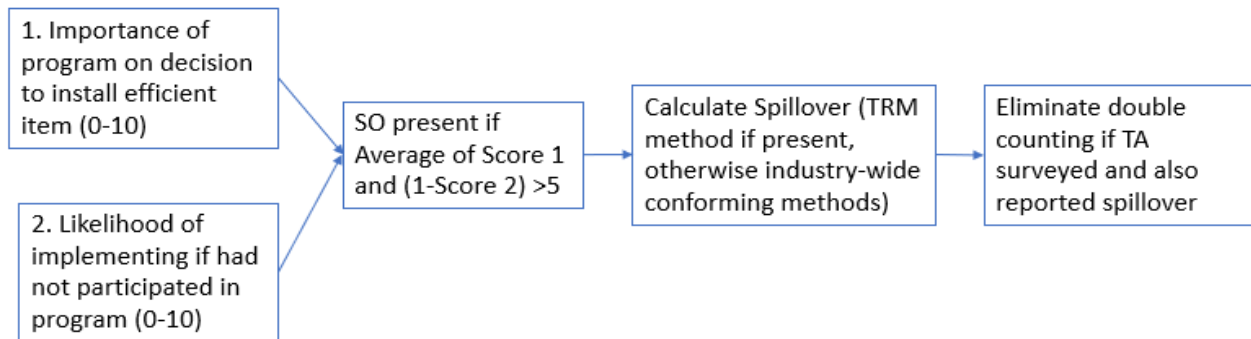


Source: Guidehouse adjustment of Illinois Technical Reference Manual version 9.0 Small Business Protocol (Section 3.3.1), based on the Illinois Stakeholder Advisory Group Net-to-Gross Working Group consensus in 2021

Participant Spillover Estimation

Guidehouse calculated spillover based on TRM v9.0 Section 3.2.1, Core Non-Residential Participant Spillover Protocol, using the method Figure 2 summarizes.

Figure 2. Participant Spillover Protocol



Note: SO = spillover; TA = Trade Ally (aka Energy Efficiency Service Provider (EESP))

Source: Guidehouse Illustration of Illinois Technical Reference Manual version 9.0

The online participant spillover survey asked respondents if they had installed any additional electric savings measures since participating in the SB Kits Program. Guidehouse included eight questions⁵ to identify spillover candidates. These questions addressed three general aspects, paraphrased below:

1. Did you do any other energy efficiency improvements to your business that were not rebated by a utility since you received the small business kit?
2. How much influence did your participation in the program have on your making additional energy efficiency improvements?
 - a. On a 0 to 10 scale, where 0 is not at all important and 10 is extremely important, how important was your experience with ComEd’s Small Business Kit Program to making your additional energy efficiency improvements on your own? (Attribution Score 1)
 - b. If you had not signed up to receive the small business kit, how likely is it that you would still have made this energy efficiency improvement? Please use a 0 to 10 scale, where 0 means that you definitely would not have made the improvement and 10 means that you definitely would have made the improvement even if you had not received the small business kit. (Attribution Score 2)
3. What were details of the energy efficiency improvements (equipment, efficiency level, quantity, etc.)?

The evaluation attributed spillover to the SB Kits Program if the following condition was met: the average of Attribution Score 1 and 10 minus Attribution Score 2 exceeded 5.0.⁶

Final NTG Results and Recommendations

Table 3 summarizes Guidehouse’s draft NTG recommendations for ComEd’s SB Kits Program to be used in CY2022 based on our NTG research results.

Table 3. NTG Research Results for the ComEd SB Kits Program

| ** | Free Ridership | Participant Spillover | NTG |
|---------------|----------------|-----------------------|------|
| Total Program | 0.19 | 0.13 | 0.94 |

FR = Free Ridership; PSO = Participant Spillover.

NTG = 1 – FR + PSO

Source: Guidehouse analysis of data from online surveys conducted with 2020 ComEd Small Business Kits Program participants

⁵ Respondents do not answer all eight questions; follow-up questions are skipped depending on earlier responses.

⁶ The spillover methodology is guided by NTG protocols in the Illinois Statewide Technical Reference Manual for Energy Efficiency, Version 9.0, Volume 4: Cross-Cutting Measures and Attachments.

Net-to-Gross Research Results for ComEd Small Business Kits Program CY2021 Memo

Page 5

September 21, 2021

Using the TRM v9.0 Algorithm 1, the participant free ridership for the program would have been 0.31.

Appendix A: Detailed NTG Results

A.1 Spillover Estimation

Of the 82 survey respondents, 13 reported installing additional energy efficiency equipment without rebates, and seven respondents indicated that participating in the SBK Program influenced them to make these additional purchases. Guidehouse was able determine spillover savings for three of those seven respondents through follow-up telephone calls. These three respondents installed multiple measures including lighting, water heating, HVAC, appliance, and weatherization. Table 5 below shows the reported spillover savings and rates for each respondent that had average spillover attribution scores greater than five.

Table 4. Reported Energy Savings for Spillover for Each Respondent

| Category | Participants Surveyed | Survey Respondents that Reported Energy Efficient Improvements w/o Rebates | Respondents that Met Spillover Attributions | Respondents Contributing to Spillover | Spillover Savings for Each Respondent and Overall (kWh) | Spillover Rate for Each Respondent |
|---|-----------------------|--|---|---------------------------------------|---|------------------------------------|
| Participant | 82 | 13 | 7 | 3 | | |
| Respondent 1 | | | | | 357 | 0.47 |
| Respondent 2 | | | | | 362 | 0.48 |
| Respondent 3 | | | | | 7,766 | 1.027 |
| Total Spillover kWh | | | | | 8,485 | |
| Program Savings by SO Respondents (n=82) | | | | | 63,327 | |
| Spillover Rate | | | | | 0.13 | |

Source: Guidehouse analysis of data from online spillover surveys conducted with CY2020 Small Business Kits Program participants

As seen in the table above, Respondent 3 contributed significantly more spillover than the other two respondents. This respondent indicated they received their small business kit in Spring 2020, and as a result, the customer was inspired to compile a list of energy efficiency upgrades to pursue. Shortly after, however, the COVID-19 pandemic put a hold on most program activities in ComEd's territory which prevented this respondent from participating in the small business

September 21, 2021

program for rebates as planned. Instead of waiting for the program to reopen, the customer implemented all their planned upgrades without incentives. Respondent 3 completed seven upgrades that included interior lighting, LED signage, advanced power strips, variable speed drive, smart thermostat, commercial kitchen equipment, and air sealing. The electric savings from the measures that the three respondents installed amounts to 13.4% of program savings for the 82 spillover respondents. Because the 82 were selected as a simple random sample, their spillover savings rate (13%) is representative of the population of CY2020 program participants.

Appendix B: ComEd SB Kits NTG History

Rural Small Business Energy Efficiency Kits

Third Party

CY2018 **NTG: 0.90**

NTG Source: Similar to Ameren SB (0.89), rounded up

CY2019 **NTG: 0.89**

NTG Source: Ameren SB

Small Business Kit

Third Party

CY2020 **NTG: 0.97**

Based upon ComEd SBES CY2019

CY2021 **Unchanged from CY2020**

NTG: 0.97

Based upon ComEd SBES CY2019

Source: <https://ilsag.s3.amazonaws.com/ComEd-NTG-History-and-CY2021-Recs-2020-09-30-Final.pdf>