



ComEd Company Strategic Energy Management Impact Evaluation Report

**Strategic Energy Management (SEM):
Program Year 2019 (CY2019)
(1/1/2019-12/31/2019)**

**Presented to
ComEd**

FINAL

April 29, 2020

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ComEd Strategic Energy Management Impact Evaluation Report

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1. INTRODUCTION

This report presents the results of the impact evaluation of ComEd's CY2019 Strategic Energy Management (SEM) Program. It includes a summary of the electric impacts evaluated in CY2019. The appendix provides the impact analysis methodology and details of the Total Resource Cost inputs. CY2019 covers January 1, 2019 through December 31, 2019.

2. PROGRAM DESCRIPTION

ComEd and Nicor Gas started the SEM Program as a pilot in electric program year (EPY) 7 and gas program year (GPY) 4. In CY2019, the program expanded to include Peoples Gas and North Shore Gas. ComEd hired two new implementation contractors in CY2019, Cascade and Graphet. Cascade manages participants from the industrial refrigeration and wastewater treatment cohorts, and Graphet manages an industrial cohort. This report covers the ComEd electric-only impact and evaluation efforts, and Nicor Gas and Peoples Gas and North Shore Gas will be reported separately due to final data being provided to the evaluator in March 2020 and gas impact evaluation will be completed soon after this report is delivered. The three utilities manage the program while CLEAResult, Cascade, and Graphet implement and oversee the day-to-day operations of the SEM Program in the region.

The goal of the SEM Program is to apply a process of continuous energy management improvements that result in energy savings and demand reductions. The program trains participants to identify low-cost and no-cost measures, improve process efficiency, and reduce energy usage and demand through behavioral changes. ComEd provides a \$0.01 per kWh saved incentive to the industrial refrigeration, wastewater treatment, and general industrial market segments, and \$0.02/kWh to the alumni cohort,¹ commercial real estate and K-12 market segments.

The program achieves energy savings through operational and maintenance (O&M) improvements, incremental increases in capital energy efficiency projects, additional capital projects that would not otherwise have been considered (e.g., process changes, consideration of energy efficiency in all capital efforts), and improved persistence for O&M and capital projects. The program provides training and implementer support to identify O&M improvements. This training usually lasts for one year and occurs monthly or bi-monthly.

The SEM Program savings are calculated using site-specific models developed by the implementation contractors that have built-in statistical regression analysis. The energy model uses two years of utility data prior to program participation. This data is associated with site information such as production and temperature to create baseline models that estimate a site's baseline usage based on these variables. After program participation begins, the model compares actual energy consumption to modeled energy consumption. The modeled consumption is dependent on variables such as temperature and production. The difference between the modeled energy consumption and actual billing data is the savings claimed by the SEM program. Both Table 2-1 and Table 2-2 provides the participation counts for CY2019. Note that some sites have both gas and electric utilities with a single implementer which is why the measure and participant counts in each table do not align.

Table 2-1. CY2019 Volumetric Findings Detail

| Participation | Cascade | CLEAResult | Graphet |
|----------------|---------|------------|---------|
| Participants | 19 | 32 | 14 |
| Total Measures | 19 | 32 | 14 |

Source: Tracking data and Guidehouse team analysis

¹ Cohorts are made up of SEM participants that began in the program at approximately the same time.

Table 2-2. CY2019 Volumetric Findings Detail

| Participation | ComEd | Peoples/North Shore | Nicor |
|----------------|-------|---------------------|-------|
| Participants | 54 | 13 | 29 |
| Total Measures | 54 | 13 | 29 |

Source: Tracking data and Guidehouse team analysis

3. PROGRAM SAVINGS DETAIL

Table 3-1 summarizes the incremental energy and demand savings the SEM Program achieved in CY2019. Total verified net electric savings is 23,296,606 kWh.

Table 3-1. CY2019 Total Annual Incremental Electric Savings

| Savings Category | Energy Savings (kWh) | Non-Coincident Demand Savings (kW) | Summer Peak* Demand Savings (kW) |
|----------------------------------|----------------------|------------------------------------|----------------------------------|
| Electricity | | | |
| Ex Ante Gross Savings | 23,219,051 | NR | NR |
| Program Gross Realization Rate | 1.00 | NA | NA |
| Verified Gross Savings | 23,296,606 | NR | NR |
| Program Net-to-Gross Ratio (NTG) | 1.00 | NA | NA |
| Verified Net Savings | 23,296,606 | NR | NR |
| Converted from Gas† | | | |
| Ex Ante Gross Savings | NA | NA | NA |
| Program Gross Realization Rate | NA | NA | NA |
| Verified Gross Savings | NA | NA | NA |
| Program Net-to-Gross Ratio (NTG) | NA | NA | NA |
| Verified Net Savings | NA | NA | NA |
| Total Electric Plus Gas | | | |
| Ex Ante Gross Savings | 23,219,051 | NR | NR |
| Program Gross Realization Rate | 1.00 | NA | NA |
| Verified Gross Savings | 23,296,606 | NR | NR |
| Program Net-to-Gross Ratio (NTG) | 1.00 | NA | NA |
| Verified Net Savings | 23,296,606 | NR | NR |

NR = Not Reported (refers a piece of data that was not reported, i.e., non-coincident demand savings)

NA = Not Applicable (refers a piece of data cannot be produced or does not apply)

* The coincident summer peak period is defined as 1:00-5:00 p.m. Central Prevailing Time on non-holiday weekdays, June through August.

Source: ComEd tracking data and evaluation team analysis

4. CUMULATIVE PERSISTING ANNUAL SAVINGS

Table 4-1 and Figure 4-1 show the total verified gross savings for the SEM Program and the cumulative persisting annual savings (CPAS) for CY2019. Guidehouse verified savings for CY2019 using only the post period data provided by the ICs, even if this post period was less than 12 months.



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Table 4-1. Cumulative Persisting Annual Savings (CPAS) – Electric

| End Use Type | Research Category | EUL | CY2019 Verified Gross Savings (kWh) | NTG* | Lifetime Net Savings (kWh)† | Verified Net kWh Savings | | | | | | |
|---|-------------------|-----|-------------------------------------|------|-----------------------------|--------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| | | | | | | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
| Whole Building | SEM | 5.0 | 23,296,606 | 1.00 | 116,483,031 | | 23,296,606 | 23,296,606 | 23,296,606 | 23,296,606 | 23,296,606 | |
| CY2019 Program Total Electric Contribution to CPAS | | | 23,296,606 | | 116,483,031 | | 23,296,606 | 23,296,606 | 23,296,606 | 23,296,606 | 23,296,606 | - |
| Historic Program Total Electric Contribution to CPAS‡ | | | | | | 14,039,833 | 14,039,833 | 14,039,833 | 14,039,833 | 14,039,833 | | |
| Program Total Electric CPAS | | | | | | 14,039,833 | 37,336,439 | 37,336,439 | 37,336,439 | 37,336,439 | 23,296,606 | - |
| CY2019 Program Incremental Expiring Electric Savings§ | | | | | | | | - | - | - | - | 23,296,606 |
| Historic Program Incremental Expiring Electric Savings‡§ | | | | | | | | - | - | - | 14,039,833 | - |
| Program Total Incremental Expiring Electric Savings§ | | | | | | | | - | - | - | 14,039,833 | 23,296,606 |

Note: The green highlighted cell shows program total first year electric savings. The gray cells are blank, indicating values irrelevant to the CY2019 contribution to CPAS.

* A deemed value. Source: is to be found on the IL SAG web site here: https://www.ilsag.info/ntg_2019.

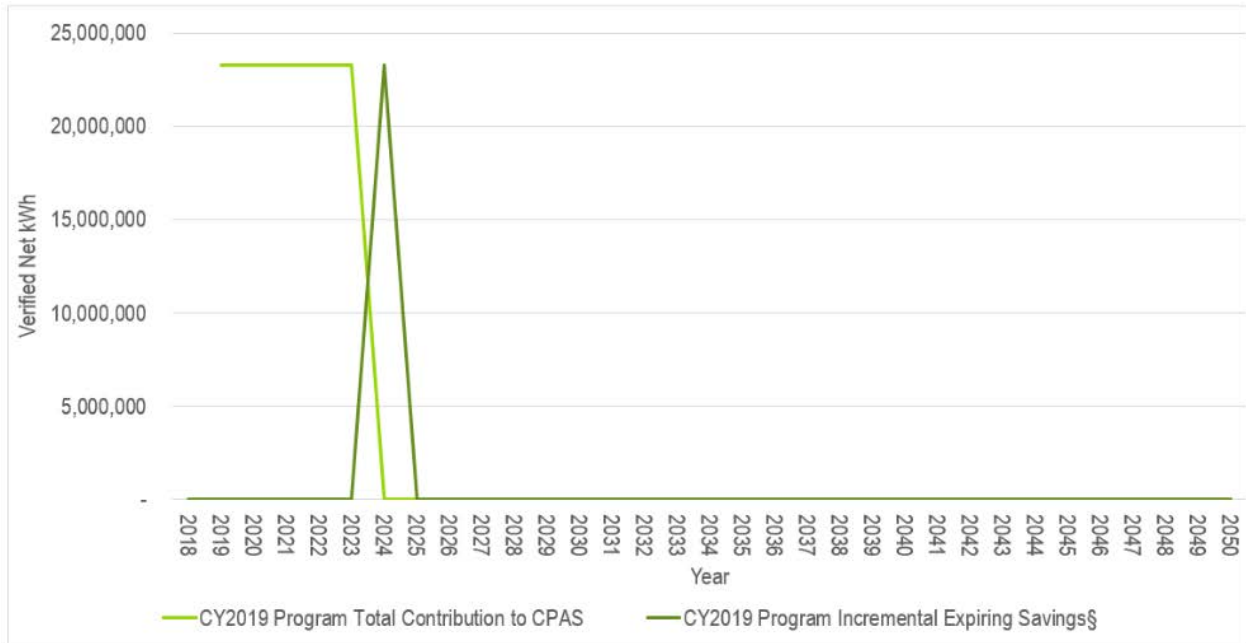
† Lifetime savings are the sum of CPAS savings through the EUL.

‡ Historical savings go back to CY2018

§ Incremental expiring savings are equal to CPAS Y_{n-1} - CPAS Y_n

Source: Evaluation team analysis

Figure 4-1. Cumulative Persisting Annual Savings



* Expiring savings are equal to CPAS Y_{n-1} - CPAS Y_n .

Source: Evaluation team analysis

5. PROGRAM SAVINGS BY MEASURE

The SEM Program tracked and evaluated savings at the site level, rather than at the measure level. SEM site level detail can be found in Table 8-1.

6. IMPACT ANALYSIS FINDINGS AND RECOMMENDATIONS

6.1 Impact Parameter Estimates

As a behavioral-based model program, SEM Program does not have standard impact parameters that are used to determine program savings. The program savings are calculated using billing regression methodologies built into the program models that are customized for each site.

6.2 Other Impact Findings and Recommendations

The evaluation team developed recommendations based on findings from the CY2019 evaluation.

Finding 1. SEM models varied across the three implementation contractors operating in CY2019.

Supporting Evidence: Guidehouse reviewed a sample of 22 regression models provided by the implementation contractors for the impact evaluation effort and found significant differences in the information provided in the models, model layout, and model structure. For example, the majority of models included the original regression analysis used to calculate savings, but others did not. This made evaluation more difficult as Guidehouse had to puzzle through how

exactly the IC arrived at their savings estimates, instead of reviewing the actual regression models.

Recommendation 1. Guidehouse recommends ComEd works with the ICs implementing the SEM program to standardize the approach in modeling and provide similar regression analysis and reporting. Guidehouse found strengths with each ICs approach to SEM which should be incorporated and standardized by the others. For instance, Cascade provided very thorough and detailed opportunity registers with great documentation on activities leading to SEM savings. CLEAResult provided accurate and detailed models, which included the actual data used in regression analysis, that were easy to follow and evaluate. Graphet clearly documented the post period measurement savings and clearly identified any gaps that impacted SEM savings. Sharing these approaches between ICs will improve the overall SEM program for customers and utilities.

Finding 2. One IC provided limited regression data that was not in the format used to create the original SEM models and calculate ex ante savings.

Supporting Evidence: There were a few models provided that only included raw interval data which was not formatted properly to align with the regression analysis detailed in the site-specific reports. For example, some sites provided raw AMI data with wet or dry bulb temperatures that had to be adjusted to outdoor temperatures, and daily data which had to be averaged to 5 or 7 day work weeks. Guidehouse had to adjust the data prior to regressing it to attempt to replicate the claimed SEM savings, but had difficulty arriving at the same result. For two of the sites, Guidehouse regression analysis showed more savings than the IC reported, but the team applied a 100% realization rate due to the lack of information needed to explain the differences.

Recommendation 2. Guidehouse recommends all ICs provide robust regression models with clearly documented steps on how the AMI data was adjusted to calculate savings. This will allow the evaluator to replicate the regression analysis and document changes in savings results.

Finding 3. The ICs varied in the approach for identifying and removing savings from capital projects.

Supporting Evidence: Guidehouse found differences in how savings from capital project were removed from SEM savings. One IC calculated the overall SEM savings and then removed the capital project savings in one lump sum, while others removed portions of the capital project savings at intervals within the SEM model itself. The latter approach showed inconsistencies as to when a capital project started, at times the project started prior to the post period² but still impacted SEM activities, as well as stopped before the end of the post period suggesting the capital project stopped having an impact on SEM results.

Recommendation 3. Guidehouse recommends ICs treat capital savings consistently and remove capital savings as a lump sum after calculating savings for the post period.

Finding 4. Guidehouse found inconsistencies in regression analysis methods used by the ICs.

Supporting Evidence: Guidehouse reviewed the regression models provided by the three ICs and found two specific issues with the underlying modeling methods. Guidehouse's understanding of regression modeling, as required by SEM programs, is that the CSUM of a proper regression model should zero out at the end of the baseline period and should not include variables with T-stats of less than +/- 2.00. Some of the regression models used by the ICs did not follow these requirements which led to slight variances in realization rates.

² Some SEM models had gaps between the end of the baseline period and the start of the post or measurement period. Savings from capital projects often began during this gap timeframe and continued into the post period. Guidehouse was unable to determine why capital project savings was treated this way and how to replicate it in the regression analysis.

Recommendation 4. Guidehouse recommends the ICs standardize their regression modeling methods to ensure consistencies in SEM savings calculations.

Finding 5. The evaluation of Site D revealed a 432.64% realization rate for electricity due to a production change at the facility that was incorrectly impacting SEM savings.

Supporting Evidence: Guidehouse found an operational production change at Site D that was impacting the SEM model and reducing program savings. The evaluation team reran the regression model using a variable to remove the production change and more accurately assess savings due to SEM. This was a small site and the total savings was <1% of overall sampled savings, so the impact to the overall program level realization rate was minor.

6.3 Site-specific Impact Findings

- Site A** Guidehouse found additional SEM savings using a newly created regression model, but could not verify the savings due to limited baseline and post-period data provided by the implementer.
- Site B** Guidehouse found additional SEM savings using a newly created regression model, but could not verify the savings due to limited pre- and post-period data provided by the implementer.
- Site C** Limited pre- and post-period data provided.
- Site D** Guidehouse found an operational production change that unnecessarily impacted ex ante SEM savings. The evaluation team created a new statistically significant variable to account for this production change and re-ran the model. The resulting RR was 432.64% for electric energy savings.
- Site E** No issues.
- Site F** No issues.
- Site G** No issues.
- Site H** No issues.
- Site I** Guidehouse removed an outlier unrelated to SEM.
- Site J** No issues.
- Site K** No issues.
- Site L** Model contained 12 months of post period data but the ex ante model only used 11 months to estimate SEM savings. Guidehouse used the 11 month period to estimate final savings after a discussion with the IC.
- Site M** No issues.

- Site N** Guidehouse could not align the ex post regression model with the provided ex ante model.
- Site O** IC annualized 183 days of post period data and capital project savings by multiplying savings by 365/183. . Guidehouse calculated ex post savings using only six months of post period data and six months of capital project impacts. Guidehouse did not annualize to 12 months of ex post savings.
- Site P** Guidehouse could not align the ex post regression model with the provided ex ante model.
- Site Q** IC provided 12 months of post period data including capital project impacts. However, the IC also accumulated capital project impacts outside of the 12 month post period and removed those savings from the SEM ex ante estimates. Guidehouse removed the impacts of the capital projects occurring outside of the post period.
- Site R** Guidehouse could not align the ex post regression model with the provided ex ante model. Baseline CSUM does not zero out.
- Site S** Ex ante model contains only one regression variable. Guidehouse could not align the ex post regression model with the provided ex ante model. Baseline CSUM does not zero out.
- Site T** Guidehouse could not align the ex post regression model with the provided ex ante model. Baseline CSUM does not zero out.
- Site U** Guidehouse could not align the ex post regression model with the provided ex ante model. Baseline CSUM does not zero out. Guidehouse also removed four outliers due to extremely low production and re-annualized ex post savings.
- Site V** Guidehouse could not align the ex post regression model with the provided ex ante model. Baseline CSUM does not zero out. Ex ante model has regression variables which are not statistically significant (T-stat less than 2.00)

6.4 Market Segment Outreach

Historically, SEM Program participants tended to be large manufacturing sites. In an effort to diversify the SEM program into new innovative segments, the utilities focused on seven different customer groups in CY2019. When recruiting new participants for the program, the electric and gas utilities look to the larger users within a segment to maximize the potential energy savings for the program. Other recruiting criteria considers if the customers have the time available to participate in the training and onsite visits and if they have participated in the other programs the utilities have offered. Table 6-1 provides the various cohort segments, their associated utilities and incentives.

Table 6-1. Cohort Segments, Utilities and Incentives

| Cohort | Electric Utility | Gas Utility | Incentive |
|--------------------------|------------------|--------------|--------------------------|
| Alumni | ComEd (Yr 3) | Nicor (Yr 3) | \$0.02/kWh; \$0.10/therm |
| Commercial Real Estate | ComEd | | \$0.02/kWh; |
| Industrial | ComEd | PG/NSG | \$0.01/kWh; \$0.10/therm |
| Industrial Refrigeration | ComEd | | \$0.01/kWh |
| K-12 | ComEd | Nicor | \$0.02/kWh; \$0.10/therm |
| MEGA ³ | | Nicor | \$0.10/therm |
| Wastewater Treatment | ComEd | | \$0.01/kWh |

Source: Guidehouse analysis

Forming additional cohorts for the commercial real estate, industrial, industrial refrigeration, K-12, mega, and wastewater treatment segments in CY2019 allowed the ICs to provide specific training and assistance to these targeted customers. Customers in these market segments, such as large industrial facilities, have sensitive processes and equipment so having training tailored to their needs, built trust in the SEM program and encouraged participants to implement energy efficiency changes.

As the SEM Program progresses and saturates the larger customer market segments, utilities have begun to recruit participants with lower annual usage including large commercial sites. The migration to commercial customers requires the ICs to focus more on lighting, HVAC, building automation systems (BAS), and control measures for energy efficiency opportunities.

Guidehouse research of SEM portfolios found many participants do not fully understand the benefits of a BAS system. CLEAResult understood this weakness and provided extensive training on BAS by bringing in experts to assist program participants in optimizing their systems. Having a training session and onsite review of the participant's BAS systems provided additional energy and demand savings.

6.5 Incentives

In an effort to meet internal program objectives, ComEd worked with the IC CLEAResult to pilot Milestone incentives in CY2019 and closely monitor the participants' energy data, energy charters, and executive sponsorship. Energy data was an incentivized component because the accuracy and timeliness of this customer inputted data is a critical component to the energy model. The loss of an Energy champions can hinder the progress of the program making it difficult for the participating site to continue in the program. Having the energy charter and energy sponsor as milestone markers provides the customer site the framework to continue in the program should an energy champion leave. Given the success of this pilot, ComEd will establish the Milestone Markers for all three ICs in CY2020.

6.6 Customer Support

ComEd hired two new implementation contractors in CY2019, Cascade and Graphet. Cascade manages participants from the industrial refrigeration and wastewater treatment cohorts, and Graphet manages an industrial cohort.

³ Nicor Gas formed the mega cohort to assist large customers who would not be eligible to participate in Nicor's efficiency programs in CY2020. Three of these exiting customers chose to participate in the mega cohort.

6.6.1 Training

A key component of the SEM Program is the training provided to customers in the form of onsite workshops and cohort meetings. These trainings have two main categories -- cohort encompassing or site specific. The cohort encompassing sessions addressed the main steps of SEM:

- SEM introduction, what are the drivers and success factors for energy management
- Energy Modeling and Baseline, what is the purpose of an energy model and how is a baseline established
- Project registers, prioritizing efficiency projects into short- and long-term projects

The SEM introduction trains customers on the important steps needed to develop an energy efficient culture at their facility. Changing the participant's culture to be aware of efficiency improvements is a core pillar of SEM. To facilitate this change, the ICs provide engagement workshops on how to empower all employees from the facility directors to the production line workers on how to make sustainable improvements.

6.6.2 Energy Model

The Energy Model is integral to the SEM Program, providing the customer insight on their day-to-day usage and how energy efficiency can help manage costs. The ICs used three different energy models in CY2019:

- JMP – for alumni and mega industrial customers
- Energy Center –for the commercial customers in the alumni group, K-12 and commercial real estate
- Energy Sensei – for the industrial refrigeration and wastewater treatment cohort

Energy Sensei is a cloud-based customer facing energy management tool. The participant's energy model is uploaded into Sensei providing a dashboard of the energy model results and a way to visualize energy performance and usage. Providing customers a way to track projects through their implementation stages and a visualization of the impacts, supports the customers' current energy efficiency efforts and encourages future projects.

The three ICs managed the customer energy models differently. One of the ICs entered all of the relevant information while others supported their customers who entered and managed the data. Guidehouse has observed that successful SEM programs encourage customers to have ownership of the energy model and the various inputs such as occupancy and production data, allowing the customer to see the efficiency changes and the impacts they have on usage.

An enhancement to the Energy Model the ICs would like is more timely interval data. Currently the utilities are receiving this information on a monthly basis making it difficult for customers to see the effects of their efficiency changes in a timely manner. Receiving the interval data on a weekly basis would alleviate this issue.

7. APPENDIX 1. IMPACT ANALYSIS METHODOLOGY

7.1 Verified Gross Program Savings Analysis Approach

Verified gross savings from the CY2019 SEM Program were calculated using implementer provided statistical models that are grounded in site-specific data. These multi-variable regression models draw upon site data including energy usage, production, weather data and seasonality effects (including holidays or shutdowns). Guidehouse independently evaluated the electric and gas savings using separate energy models.

Guidehouse's review of the models was driven by the following procedure:

- A site-specific analysis approach. Because this program contains primarily behavioral-based changes, the International Performance Measurement and Verification Protocol (IPMVP) Option C (billing/metered data regression) was the main approach to impact evaluation.
- The data collection focused on verifying and updating the assumptions that feed into the implementer's energy model for each site. This data included: program tracking data and supporting documentation (project specifications, invoices, etc.), utility billing and interval data, Guidehouse-calibrated building automation system trend logs and telephone conversations with onsite staff.

For each site, Guidehouse reviewed and updated the statistical models provided by the implementer. Guidehouse staff generally followed the process below for this review:

Step 1: Guidehouse recreated the energy models to ensure they aligned with the provided data.

Step 2: Guidehouse confirmed the model saving calculations accounted for all capital projects. Savings from capital projects were subtracted from total measurement period savings.

Step 3: Guidehouse identified and accounted for any short-term effects that were occurring outside the SEM influence. Telephone interviews with the site staff confirmed these changes.

Step 4: Guidehouse made additional changes to the models as needed. Changes included excluding outlier data points or including additional variables. Outlier points that were above 110% or below 90% of baseline period variables were excluded if the residual was out of line with other residuals in the measurement period.

Guidehouse identified a number of changes that occurred at the site that had short-term or long-term effects on the statistical model. The changes that could affect the model savings include:

- Change in hours of operation
- Change in numbers of employees
- Change in production
- Other capital measures installed at the site that were implemented through other utility energy efficiency and demand response programs or outside of the ComEd or Nicor Gas programs.

7.2 Verified Net Program Savings Analysis Approach

Guidehouse calculated the verified net energy and demand savings by multiplying the verified gross savings estimates by a deemed net-to-gross (NTG) ratio. Table 7-1 shows the deemed NTG values for CY2019. The deemed NTG value of 1.00 for electric savings and 1.00 for gas savings were agreed to by stakeholders in discussions in the Stakeholder Advisory Group (SAG).⁴

Table 7-1. Deemed NTG Values for CY2019

| Program Channel | CY2019 Deemed NTG Value |
|-----------------|-------------------------|
| Electric | 1.00 |
| Natural Gas | 1.00 |

Source: ComEd_NTG_History_and_PY10_Recommendations_2017-03-01_Final.xlsx and Nicor_Gas_GPY7_NTG_Values_2017-03-01_Final.xlsx, which are to be found on the <http://www.ilsag.info/net-to-gross-framework.html>

8. APPENDIX 2. IMPACT ANALYSIS DETAIL

The program had electric realization rates (RR) above and below 1.0 due to multiple modeling issues identified in the site specific findings. Table 8-1 summarizes the site-level incremental electric savings the SEM Program achieved in CY2019.

⁴ Source: ComEd_NTG_History_and_PY10_Recommendations_2017-03-01_Final.xlsx and Nicor_Gas_GPY7_NTG_Values_2017-03-01_Final.xlsx, which are to be found on the IL SAG web site here: http://www.ilsag.info/ntg_2016.html

Table 8-1. CY2019 Energy Savings by Site*

| Site | Ex Ante Gross Savings (kWh) | Verified Gross kWh Realization Rate | Ex Post Gross Savings (kWh) |
|--------|-----------------------------|-------------------------------------|-----------------------------|
| Site A | 483,574 | 100.00% | 483,574 |
| Site B | 441,287 | 100.00% | 441,287 |
| Site C | 717,862 | 100.12% | 718,734 |
| Site D | 51,253 | 432.64% | 221,743 |
| Site E | NA | NA | NA |
| Site F | 420,732 | 100.06% | 420,979 |
| Site G | 832,438 | 100.00% | 832,438 |
| Site H | 2,439,422 | 100.00% | 2,439,422 |
| Site I | 596,569 | 75.97% | 453,216 |
| Site J | 816,163 | 101.24% | 826,261 |
| Site K | 989,245 | 100.00% | 989,245 |
| Site L | 2,083,857 | 100.00% | 2,083,858 |
| Site M | 1,263,487 | 100.00% | 1,263,487 |
| Site N | NA | NA | NA |
| Site O | NA | NA | NA |
| Site P | NA | NA | NA |
| Site Q | 27,920 | 487.97% | 136,243 |
| Site R | 168,200 | 99.24% | 166,919 |
| Site S | 5,773,442 | 100.48% | 5,801,018 |
| Site T | 142,394 | 111.11% | 158,211 |
| Site U | 1,018,977 | 105.07% | 1,070,605 |
| Site V | 871,221 | 69.30% | 603,734 |

Source: ComEd and Nicor Gas tracking data and Guidehouse team analysis.

9. APPENDIX 3. TOTAL RESOURCE COST DETAIL

Table 9-1 below, shows the Total Resource Cost (TRC) table. It includes only the cost-effectiveness analysis inputs available at the time of finalizing this impact evaluation report. Additional required cost data (e.g., measure costs, program level incentive and non-incentive costs) are not included in this table and will be provided to the evaluation team later.

Table 9-1. Total Resource Cost Savings Summary

| Site | Units | Effective Useful Life | Verified Gross Savings (kWh) | NTG Ratio (kWh) | Verified Net Savings (kWh) |
|--------|----------|-----------------------|------------------------------|-----------------|----------------------------|
| Site A | Per Site | 5.0 | 483,574 | 1.00 | 483,574 |
| Site B | Per Site | 5.0 | 441,287 | 1.00 | 441,287 |
| Site C | Per Site | 5.0 | 718,734 | 1.00 | 718,734 |
| Site D | Per Site | 5.0 | 221,743 | 1.00 | 221,743 |
| Site E | Per Site | 5.0 | 0 | 1.00 | 0 |
| Site F | Per Site | 5.0 | 420,979 | 1.00 | 420,979 |
| Site G | Per Site | 5.0 | 832,438 | 1.00 | 832,438 |
| Site H | Per Site | 5.0 | 2,439,422 | 1.00 | 2,439,422 |
| Site I | Per Site | 5.0 | 453,216 | 1.00 | 453,216 |
| Site J | Per Site | 5.0 | 826,261 | 1.00 | 826,261 |
| Site K | Per Site | 5.0 | 989,245 | 1.00 | 989,245 |
| Site L | Per Site | 5.0 | 2,083,858 | 1.00 | 2,083,858 |
| Site M | Per Site | 5.0 | 1,263,487 | 1.00 | 1,263,487 |
| Site N | Per Site | 5.0 | 0 | 1.00 | 0 |
| Site O | Per Site | 5.0 | 0 | 1.00 | 0 |
| Site P | Per Site | 5.0 | 0 | 1.00 | 0 |
| Site Q | Per Site | 5.0 | 136,243 | 1.00 | 136,243 |
| Site R | Per Site | 5.0 | 166,919 | 1.00 | 166,919 |
| Site S | Per Site | 5.0 | 5,801,018 | 1.00 | 5,801,018 |
| Site T | Per Site | 5.0 | 158,211 | 1.00 | 158,211 |
| Site U | Per Site | 5.0 | 1,070,605 | 1.00 | 1,070,605 |
| Site V | Per Site | 5.0 | 603,734 | 1.00 | 603,734 |

Note: This TRC tables includes the available cost analysis detail per site and is slightly different than other TRC report tables since it is provided on a per site basis.

Source: ComEd and Nicor Gas tracking data and Guidehouse team analysis.