



Strategic Energy Management Program Impact Evaluation Report

Energy Efficiency Plan: Program Year 2025
(01/01/2025-12/31/2025)

Prepared for:

Nicor Gas Company



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Prepared by:

Daniel Ferrante
Guidehouse

Submitted to:

Nicor Gas Company
1844 Ferry Road
Naperville, IL 60563

Submitted by:

Guidehouse Inc.
167 N. Green Street
12th Floor
Chicago, IL 60607

Contact:

Charles Maglione, Partner
202.481.7352

cmaglione@guidehouse.com

Jeff Erickson, Director
608.616.4962

jeff.erickson@guidehouse.com

Laura Agapay-Read, Associate Director
312.583.4178

laura.agapay.read@guidehouse.com

Charles Ampong, Associate Director
608.616.4922

charles.ampong@guidehouse.com

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1 Introduction

This report presents the results of the impact evaluation of the Nicor Gas 2025 Strategic Energy Management (SEM) program. It presents a summary of the energy impacts for the total program and broken out by relevant measure and program structure details. The appendices present the impact analysis methodology and cost effectiveness analysis inputs. Program year 2025 covers January 1 to December 31, 2025.

2 Program Description

The goal of the SEM program is to train personnel at participating commercial and industrial customer sites to apply a process of continuous energy management improvements that result in tangible energy savings. The program trains participants to identify low-cost and no-cost measures, improve process efficiency, and reduce energy usage through behavioral changes.

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

SEM ex ante program savings are calculated using site-specific energy models developed by the implementation contractors that have built-in statistical regression analysis. The energy model uses at least one year of utility data prior to program participation. This data is associated with site-specific parameters, such as production volume, hours of operation, and local climate data to create baseline models that estimate a site's typical energy usage. For participants with coordinated gas and electric activities, the evaluation team independently evaluated the electricity savings for ComEd and the gas savings for Nicor Gas using separate energy models.

After program participation begins, actual (billed) energy consumption is compared to the forecasted energy consumption predicted by the model. The difference between the modeled energy consumption and actual billing data, minus energy savings for capital projects that flow through other programs, is the ex ante savings reported by the SEM program.

The program had 21 participants in 2025. As shown in Table 1, four participants were new to the SEM program while 17 were ongoing alumni participants. The ratio of new to alumni participation can affect year-to-year savings, as new participants often have the highest savings.

Table 1. 2025 Volumetric Findings Detail

Participation	New Participant	Alumni Participants	Total
Participants *	4	17	21

* Participants are defined as customers who formed the individual energy teams. Each participant may have several models covering savings across several locations.

Source: Nicor Gas tracking data and evaluation team analysis.

Table 2 summarizes the participating projects that are the basis for verified energy savings.

Table 2. 2025 Project Quantities

Program Category	Measure	Quantity
Private	SEM - Whole Building	10
Public	SEM - Whole Building	11

Source: Nicor Gas tracking data and evaluation team analysis.

3 Program Savings Detail

Table 3 summarizes the energy savings the SEM Program achieved by path in 2025.

Table 3. 2025 Annual Energy Savings Summary

Program Path	Ex Ante Gross Savings (Therms)	Verified Gross RR*	Verified Gross Savings (Therms)	NTG†	Verified Net Savings (Therms)
Private Sector	552,201	100%	551,339	1.00	551,339
Public Sector	337,112	100%	336,571	1.00	336,571
Total	889,313	100%	887,910	1.00	887,910

* Realization Rate (RR) is the ratio of verified gross savings to ex ante gross savings, based on evaluation research findings.

† NTG (Net to Gross) is the deemed value available on the SAG website: <https://www.ilsag.info/evaluator-ntg-recommendations-for-2025/>.

Source: Evaluation team analysis.

4 Program Savings by Measure

The SEM program does not report ex ante savings by measure type. Savings are calculated at the building level.

5 Impact Analysis Findings and Recommendations

Overall, the program is functioning as intended and effectively producing persistent savings. The following finding had a minimal impact on overall program savings but was included to allow for continual program improvement.

Finding 1. The ex ante savings for site J are calculated using an engineering spreadsheet-based analysis. Savings occur as a result of updated scheduling for process heating loads, strategically turning burners off when historically they ran continuously. Evaluation identified a minor discrepancy between the operational hours used to calculate savings and the provided schedule, specifically one additional hour on Saturday.

Recommendation 1. Ensure accuracy and consistency between documentation and calculations for projects utilizing bottoms up savings calculations.

Appendix A. Impact Analysis Methodology

The evaluation team analyzed the Nicor Gas SEM program using a sample of projects representative of the overall population. The team randomly selected eleven of the twenty-one projects through a stratified sampling design at the tracking-record level, using population gross therm savings from program tracking data. The team defined strata by project size, with gross energy-savings boundaries that placed approximately one-third of total program savings in each stratum. Table 4 presents the sample selection profile

Table 4. Profile of Gross Impact Sample for SEM Projects

Program	Population Summary				Sample Summary			
	Sampling Strata	Number of Projects (N)	Ex Ante Gross Savings (Therms)	% of Total Therms	Sample Quantity (N)	Ex Ante Gross Savings (Therms)	Sampled Population (% Therms)	
SEM	Large	2	383,127	43%	2	383,127	43%	
	Medium	3	213,606	24%	3	213,606	24%	
	Small	16	292,580	33%	6	113,644	13%	
TOTAL		21	889,313		11	710,377		

Source: Evaluation team analysis.

Verified Gross Program Savings Analysis Approach

The SEM ex ante program savings are calculated using billing regression methodologies built into the regression models that the program customizes for each site. The evaluation calculated verified gross savings by recreating and validating the ex ante 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 and shutdowns.

The evaluation review of the models was driven by the following procedure:

- **A site-specific analysis approach** – since this program contains primarily behavioral-based changes, the International Performance Measurement and Verification Protocol (IPMVP) Option C, Whole Facility billing/metered data regression, was the main approach to evaluate savings.
- **Data collection focused on verifying and updating the assumptions that feed into the ex ante energy model for each site** – data sources include program tracking data and supporting documentation (project specifications, invoices, etc.), utility billing and interval data.

For each sampled site, the evaluation team reviewed and updated the statistical models provided by the program. . The evaluation generally followed this process for this review:

Step 1: Recreated the energy models to ensure these aligned with the provided data.

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

Step 3: Identified and accounted for any short-term effects that were occurring outside the SEM influence. Additional data requests and follow ups with the implementation team and site contacts.

Step 4: Made additional changes to the models as needed. Changes included exclusion of outlier data points, inclusion of additional variables, or annualization adjustments. Outlier points that were more

than 110% or less than 90% of baseline period variables were generally excluded if the residual was out of line with other residuals in the measurement period.

Step 5: Models were re-run to determine verified gross savings values. These values were then compared to the ex ante savings to develop measure, strata, and program level realization rates. The strata-level realization rates are then applied to the program population to inform gross program savings.

The evaluation team identified potential changes to typical operation at the sites that may have short-term or long-term effects on the statistical model. The changes that could affect the model savings include:

- Facility shutdowns
- 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 Nicor Gas programs

Savings Rollup

There are two basic statistical methods for combining individual gross realization rates from the sample projects into an estimate of verified gross therms savings for the population when using stratified random sampling: separate and combined ratio estimation.¹ In the case of a separate ratio estimation, a separate gross therms savings RR is calculated for each stratum and then combined. In the case of a combined ratio estimation, the evaluation completes a single gross therms savings realization rate calculation, rather than calculating separate gross realization rates by stratum.

The evaluation team used the separate ratio estimation technique to estimate verified gross impacts for the program. The separate ratio estimation technique follows the steps outlined in the California Evaluation Framework,² which identifies best practices in program evaluation. The team matched these steps to the stratified random sampling method it used to create the sample for the component. The sample produced a rollup gross realization rate of 100% at a 90% confidence interval applied to the population.

Impact Analysis Supplemental Information

Table 5 summarizes the sample site-level incremental gas savings the SEM program achieved in 2025. As the verified realization rate is 100% for all sites, no additional site-specific narrative is needed.

Table 5. 2025 Energy Savings by Sampled Site

Site Identifier	Stratum	Ex Ante Gross Savings (Therms)	Verified Gross Savings (Therms)	Verified Gross Realization Rate
Site A	large	159,906	159,906	100%
Site B	large	223,221	223,221	100%
Site C	medium	64,298	64,298	100%

¹ A full discussion and comparison of separate vs. combined ratio estimation can be found in *Sampling Techniques* (Cochran, 1977), pp. 164-169.

² Tec Market Works, *The California Evaluation Framework*, prepared for the California Energy Commission, June 2004, available at <http://www.calmac.org>.

Site Identifier	Stratum	Ex Ante Gross Savings (Therms)	Verified Gross Savings (Therms)	Verified Gross Realization Rate
Site D	medium	67,003	67,003	100%
Site E	medium	82,305	82,305	100%
Site F	small	4,265	4,265	100%
Site G	small	10,395	10,395	100%
Site H	small	13,599	13,599	100%
Site I	small	23,320	23,320	100%
Site J	small	30,282	29,736	98%
Site K	small	31,783	31,784	100%
Total		710,377	709,832	100%

Source: Nicor Gas tracking data and Guidehouse team analysis.

Appendix B. Program Specific Inputs for the Illinois TRC

Table 6 shows the Total Resource Cost (TRC) cost-effectiveness analysis inputs available at the time of producing 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. Guidehouse will include annual and lifetime water savings and greenhouse gas reductions in the end of year summary report.

Table 6. Verified Cost Effectiveness Inputs

Program Path	Participation Category	DAC Project	Quantity	Effective Useful Life	Ex Ante Gross Savings (Therms)	Verified Gross Savings (Therms)	Verified Net Savings (Therms)
Private Sector	First Year	No	2	7.0	83,439	83,360	83,360
	Alumni	No	8	7.0	468,762	467,979	467,979
Public Sector	First Year	No	2	7.0	192,763	192,605	192,605
	Alumni	No	9	7.0	144,349	143,965	143,965
Total or Weighted Average			21	7.0	889,313	887,910	887,910

Source: Evaluation team analysis.