



Business New Construction Impact Evaluation Report

Energy Efficiency Plan: Program Year 2023
(1/1/2023-12/31/2023)

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FINAL

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1. Introduction

This report presents the results of the impact evaluation of the Nicor Gas 2023 Business New Construction (BNC) program. The appendices present the impact analysis methodology, detailed engineering desk review results, and Illinois total resource cost (TRC) inputs. Program year 2023 covers January 1, 2023, through December 31, 2023.

2. Program Description

The BNC program is offered jointly to commercial and industrial (C&I) and public sector (PS) customers served by ComEd, Nicor Gas, Peoples Gas, and North Shore Gas. The program aims to capture immediate and long-term energy efficiency opportunities available during the design and construction of non-residential and multifamily buildings. The program covers new buildings, additions, and major renovations.

Slipstream (formerly Seventhwave) implements the program by reaching out to design professionals, commercial real estate developers, and customers at the beginning of the design process. The implementation team provides technical assistance in building design to reduce energy use beyond what is required by existing building codes and standards. The Nicor Gas BNC program coordinates with ComEd where their service areas overlap. Nicor Gas purchases therm savings from the program using a dollar per therm payment model on a project-by-project basis.

Overall, the program had 87 participants in 2023 and completed 87 projects. Of these projects, 77 included gas savings, 41 of which were served jointly by ComEd and Nicor Gas, as Table 2-1 shows.

Table 2-1. 2023 Volumetric Findings Detail

| Participation | ComEd (Overall with Gas Utilities) | Nicor Gas |
|---------------------------|------------------------------------|----------------|
| Program 2023 Total | | |
| Participants * | 77 | 41 |
| Installed Projects † | 77 | 41 |
| Measure Types Installed | Whole Building | Whole Building |

* Participants are defined as completed commercial and industrial (C&I) and public sector (PS) new construction projects.

† Installed Projects are defined as completed C&I and PS new construction projects.

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

3. Program Savings Detail

Table 3-1 summarizes the energy savings the Nicor Gas BNC program achieved in 2023.

Table 3-1. 2023 Annual Energy Savings Summary

| Savings Category | Program Path | Ex Ante Gross Savings (Therms) | Verified Gross RR* | Verified Gross Savings (Therms) | NTG† | Verified Net Savings (Therms) |
|----------------------------------|----------------|--------------------------------|--------------------|---------------------------------|------|-------------------------------|
| DAC Eligible Projects | Whole Building | 24,231 | 0.94 | 22,801 | 1.00 | 22,801 |
| DAC Ineligible Projects | Whole Building | 256,282 | 0.94 | 241,160 | 0.43 | 103,699 |
| Total or Weighted Average | | 280,513 | 0.94 | 263,961 | | 126,500 |

Note: Totals may not sum due to rounding

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

† A deemed value. Available on the SAG web site: https://www.ilsag.info/ntg_2023.

Source: Guidehouse evaluation team analysis.

4. Program Savings by Measure

The BNC program claims savings at the whole building level, so this report does not present measure-level savings. Evaluation-verified savings for the program are based on a random sample of projects and reported at the project level (whole building analysis). Appendix B provides more information about sampled project-level savings.

5. Impact Analysis Findings and Recommendations

5.1 Impact Parameter Estimates

BNC program participants completed 87 projects (77 with gas savings) in 2023. The evaluation team used a stratified random sampling approach to select 30 projects to receive an engineering desk review. Of the 30 sampled projects, 28 projects had gas savings. Of the 28 projects with gas savings, 15 were served jointly by ComEd and Nicor Gas¹ (see 5.2 Appendix A for more detail on the sampling approach). For about half of Nicor Gas projects, the desk reviews resulted in realization rates (RR) of 1.0 and therefore independently confirmed the ex ante savings and required no adjustments.

The evaluation team calculated RRs with and without interactive effects (see Appendix A for more detail on interactive effects). The final RRs for projects with gas savings was 94% for therms without interactive effects and 93% for therms with interactive effects.

The evaluation team calculated verified gross and net energy savings using participant-specific whole-building energy models developed by the implementation team for baseline and projected design scenarios. For each participant, the design energy model estimates the proposed building's annual whole-building energy consumption based on architecture; building envelope; heating, ventilation, and air conditioning (HVAC); lighting; and other parameters from the building design plans. The baseline energy model for a project estimates the counterfactual annual energy consumption the building would be expected to consume if it were built to meet the baseline energy performance standards. The estimated first-year savings are the difference in annual electric and gas consumption between the two models. Most of the models were

¹ 16 Nicor Gas projects received a desk review since Nicor Gas project CINC-1190 was selected in the sample. While that project's electricity savings were claimed by ComEd in CY2023, Nicor Gas elected to claim the gas savings in program year CY2024.

developed in the Sketchbox program, which utilizes the DOE2.2 engine. The evaluation team reviewed the models using Sketchbox or eQuest, which also utilizes the DOE2.2 engine.

Table 5-1 shows the parameters used in the verified gross and net savings calculations and indicates which were calculated through evaluation activities and which were deemed. Following Table 5-1, Section 5.2 provides findings and recommendations, including discussion of all measures with RRs above or below 100%. 5.2 Appendix A provides a description of the impact analysis methodology.

Table 5-1. 2023 Verified Gross Savings Parameters

| Gross Savings Input Parameters | Deemed or Evaluated? | Source* |
|---------------------------------|----------------------|--|
| Program Model Inputs | Evaluated | Program-supplied building models and savings calculation spreadsheet |
| Evaluation Model Inputs | Mixture | Desk review of project documentation; Illinois TRM v11.0†, PTD |
| Evaluation Model Results | Evaluated | eQuest/DOE2.2/DOE2.1E/Project Calculations |
| Realization Rate - All Projects | Evaluated | Program savings and evaluated savings |
| NTG - Electricity and Gas | Deemed | Illinois SAG Consensus |
| EUL | Mixture | Illinois TRM v11.0† – Volume 4 Attachment B |

* Program Tracking Data (PTD) provided by Nicor Gas, extract dated January 30, 2024.

† State of Illinois Technical Reference Manual version 11.0 from <http://www.ilsag.info/technical-reference-manual.html>.

‡ Project files and monthly billing data provided by Nicor Gas. Where conducted, on-site or telephone interview data collected by Guidehouse.

5.2 Findings and Recommendations

The factors that had the largest effect on adjusting ex ante gross savings were the use of an incorrect ventilation rate on a single large project; inconsistencies between installed equipment specifications and performance characteristics; and incorrect application of code requirements or baselines. The evaluation team developed several recommendations based on findings from the CY2023 evaluation.

Finding 1. The verified savings are different from ex ante savings due to installed equipment quantities or specifications being inconsistent with performance characteristics included in the building models or calculations:

- The evaluation team increased the savings for project 1434 because the team identified the installation of 26 insulated doors while the ex-ante savings included an area of only 24 insulated doors in the model.
- The evaluation team adjusted the installed lighting wattage for five projects (1438, 1444, 1452, 1515, 1539) due to changes to lighting counts or specifications. The adjustments to lighting wattage resulted in changes to modeled gas usage and changes to savings for gas efficiency measures. These adjustments were generally very small and resulted in minimal changes to overall project or program savings.

- The ex ante savings for project 1444 used a modeled area that was different than the constructed building. The modeled area included the warehouse space but not the office area of the building.

Recommendation 1. Ensure building simulations are updated to accurately reflect the final as-built building construction and installed equipment.

Finding 2. The evaluation team reduced the savings for four projects due to a lack of documentation to confirm the completion of the measures as claimed for measures that involved operational settings on control systems. The evaluation team reduced the savings for these measures by 50%. These measures claimed savings for controls that were claimed to operate more aggressively than is required by code:

- The ex ante savings for project 1325 used a demand control of ventilation levels in a garage that was more aggressive than code requirements. However, the evaluation team didn't find any documentation that supported the reduced ventilation rates.
- The ex ante savings for project 1515 used aggressive 5-min occupancy shutdown periods for interior lighting and exterior lighting, compared with 10-min periods required by code. The project files did not include any documentation that supported these changes.
- The ex ante savings for project 1539 included the installation of low-flow fixtures, but the project documentation did not include any information or specifications on the installed fixtures.

Recommendation 2. Ensure project documentation is complete and sufficient to verify claimed project savings to ensure evaluability. In cases where efficiency upgrades include the installation of more aggressive than code-required control sequences, documentation of the installation of the equipment is not sufficient. Instead, the documentation must include verification of the control sequence and/or setpoint.

Finding 3. The evaluation team reduced the savings for one project due to incorrect application of code requirements or baselines:

- Project 1444 included interior lighting savings for a warehouse with office space. The ex ante savings were calculated based on the application of warehouse lighting power density levels to the entire space. The evaluation team increased the savings by recalculating based on both the warehouse and office allowable lighting power density levels.

Recommendation 3. (Electric only) Increase quality control and control assurance processes to ensure baselines for building simulations or savings calculations are consistent with applicable codes and standards for the equipment installed.

Finding 4. The evaluation team reduced the natural gas savings for project 1474 by 59% due to changes in the model associated with the occupancy density and the ventilation level per person.

- The original model was based on an occupant density of 500 sf/person (total of 1,981 people) and 225 CFM of OA per person. This resulted in a total ventilation rate of

445,646 cfm of OA. However, based on the HVAC permit drawings, the building was designed based on an occupancy of 400 people (2,476 sf/person) at 40 CFM of OA per person, for a total of 98,000 CFM of OA. Reducing the OA levels significantly reduced the savings associated with the efficient make-up-air units, as well as slightly reducing savings for the low-flow fixtures from the model.

Recommendation 4. Increase QA/QC processes to ensure modelled occupancy and resulting ventilation levels are consistent with installed HVAC equipment.

Finding 5. The evaluation team found discrepancies between the tracking data provided by ComEd and Nicor Gas for projects 0899 and 1474.

- Nicor Gas claimed gas savings for project 0899, however, according to the tracking data ComEd provided, there was no gas measure incentive for that project. That means that any gas savings from it are claimable by ComEd, and not Nicor Gas. The evaluation team did not count gas savings contributed by this project as part of the Nicor Gas totals.
- The ex ante gas savings for project 1474 were not consistent across the utilities' tracking data. Project 1474 was part of the stratified random sample for CY2023 evaluation. The evaluation team was able to confirm the ex ante gross savings from the project files provided in the ComEd database. Details of the evaluation findings from these projects are provided in Appendix Table B-1.

Recommendation 5. Ensure project data provided to ComEd, Nicor Gas, PGL, and NSG are consistent across their respective tracking data submitted for evaluation. The data should clarify which projects the coordinated utilities are claiming savings for the program year under evaluation and clarify where there are cost or therms percentage allocations for specific projects and each respective utility.

Appendix A. Impact Analysis Methodology

A.1 Engineering Methodology

Table 5-1 includes a description of the building energy models used in the measurement and verification (M&V) engineering analysis. The analysis included the following:

- Adjusting the model inputs in the executable files to match the as-built conditions identified in the evaluation team's review of the BNC program's project files and then rerunning the model
- Quantifying impacts by comparing two simulations representing the projected design and baseline scenarios

The baseline model is the Illinois Energy Conservation Code for Commercial Buildings, which references and incorporates the applicable International Energy Conservation Code (IECC). The Illinois Energy Conservation Code for Commercial Buildings explicitly allows for the use of American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 90.1 as an alternate compliance method.

The program assumes the appropriate baseline based on the program application date. Projects designed through CY2019 used IECC 2015 (based on ASHRAE 90.1-2013) with more recent projects (2020 or sooner) using IECC 2018 (based on ASHRAE 90.1-2016). The evaluation team relied on the same software, methods, and approach to assigning baseline assumptions that the program implementers used to estimate the ex ante models.

The team also calculated interactive effects for each fuel type, where applicable. Interactive effects are the resulting changes to savings that occur when the installation of one measure has a positive or negative effect on the consumption of another fuel type. Interactive effects are calculated in the model. For utilities' goal tracking, the evaluation team provides the savings without the penalties from interactive effects. The implementation team calculated savings for joint projects including interactive effects. However, the evaluation team calculated savings with and without interactive effects for reporting purposes. Unless noted, the results in this report exclude penalties from cross-fuel interactive effects.

The evaluation team calculated verified net energy savings by multiplying the verified gross savings estimates by a net-to-gross (NTG) ratio. In CY2023, the NTG values used to calculate the net verified savings were based on past evaluation research and approved by the Illinois SAG. The evaluation team applied a NTG ratio of 1.0 to verified gross savings estimates corresponding to eligible projects under the Net-to-Gross for Disadvantaged Areas (DAC) Community Policy. Eligible projects consisted of public projects in a disadvantaged municipality for the BNC program.

The evaluation team selected a stratified random sample for the BNC program to support the engineering desk reviews. The team designed the sample to provide 90/10 confidence and precision for evaluated therms savings estimates.

A.2 Sampling Approach

Consistent with previous evaluations, the evaluation team developed a MMBtu stratified random sample of projects to support the engineering desk reviews. This approach focused on electric and gas savings. The team designed the sample to provide 90/10 precision for evaluated kW, kWh, and therms savings, considering savings with and without interactive effects. This approach also targeted 90/10 precision at the MMBtu level.

The team sampled CY2023 projects in two waves. The Wave 1 sample frame contained all 23 projects with electricity or gas savings completed as of June 30, 2023. The Wave 2 sample frame contained the remaining 64 projects completed between July 1, 2023, and December 31, 2023. For each wave, the evaluation team divided the sample frame into strata based on the overall MMBtu savings of each project and randomly selected projects within those strata. After completing the desk reviews and calculating project-specific realization rates (RRs), the team developed case weights to extrapolate the results to similar projects, ensuring the engineering results represent the population of 2023 participants. Table A-1 shows the MMBtu profile of the sample selection. Table A-2 shows the profile of the sample for therms savings and roll up gross realization rate and precision estimate.

Table A-1. 2023 Profile of Gross Impact Sample for Projects (MMBtu)

| Population Summary*† | | | | Sample Summary* | | |
|---------------------------|-----------------|------------------------|-------------------------------|-----------------|-------------------------------|-----------------------------------|
| Program | Sampling Strata | Number of Projects (N) | Ex Ante Gross Savings (MMBtu) | n | Ex Ante Gross Savings (MMBtu) | Sampled % of Population (% MMBtu) |
| Coordinated | 1 | 38 | 17,076 | 7 | 3,580 | 21% |
| Non-Residential | 2 | 32 | 52,655 | 13 | 22,500 | 43% |
| Business New Construction | 3 | 17 | 75,830 | 10 | 49,963 | 66% |
| TOTAL | | 87 | 145,561 | 30 | 76,043 | 52% |

*The gross impact population and sample include MMBtu savings for Nicor Gas, as well as PGL, NSG and ComEd.

†Seven Nicor Gas projects (CINC-1464, CINC-1473, CINC-1190, CINC-1229, CINC-1231, CINC-1320, CINC-1357) were included in the population during sampling, with one of them (CINC-1190) being selected. While electricity savings were claimed by ComEd, but Nicor Gas elected to claim the gas savings in program year 2024.

Source: Guidehouse evaluation team analysis.

Table A-2. 2023 Profile of Gross Impact Sample for Projects and Realization Rate

| Population Summary**† | | | | Sample Summary* | | | Statistical Verification Results | |
|-----------------------------|-----------------|------------------------|--------------------------------|-----------------|--------------------------------|------------------------------------|----------------------------------|-------------|
| Program | Sampling Strata | Number of Projects (N) | Ex Ante Gross Savings (Therms) | n | Ex Ante Gross Savings (Therms) | Sampled % of Population (% Therms) | RR | Precision |
| Coordinated Non-Residential | 1 | 40 | 110,950 | 11 | 35,822 | 32% | | |
| Business New Construction | 2 | 25 | 270,530 | 9 | 96,469 | 36% | | |
| | 3 | 12 | 374,494 | 8 | 261,642 | 70% | | |
| TOTAL | | 77 | 755,974 | 28 | 393,933 | 52% | 94% | 3.4% |

*The gross impact population and sample included combined projects and therms savings for Nicor Gas, as well as PGL, NSG and ComEd projects for a combined sample design and roll up of the program verified gross realization rate estimate.

†Seven Nicor Gas projects (CINC-1464, CINC-1473, CINC-1190, CINC-1229, CINC-1231, CINC-1320, CINC-1357) were included in the population during sampling, with one of them (CINC-1190) being selected. While electricity savings were claimed by ComEd, but Nicor Gas elected to claim the gas savings in program year 2024.

Source: Guidehouse evaluation team analysis.

Appendix B. Impact Analysis Supplemental Information

B.1 Engineering Desk Review Results

Table B-1 shows the results of the engineering desk review for Nicor Gas projects, including the ex ante savings, verified savings, and the resulting RR for each project in the desk review sample. The table also includes, where applicable, a narrative describing the reasons for any discrepancies between ex ante and verified savings. A RR less than 1.00 indicates that a project received a downward adjustment to energy savings while a RR more than 1.00 indicates that a project received an upward adjustment to energy savings. All energy savings exclude interactive effects.

Table B-1. 2023 Researched Gross Savings for Sampled Projects

| Project ID | Gas Utility | Ex Ante | | Verified | | Realization Rate | |
|------------|--|------------------------------|------------------------|------------------------------|------------------------|--------------------------------------|--------------------------------------|
| | | Electricity Savings (kWh/yr) | Gas Savings (therm/yr) | Electricity Savings (kWh/yr) | Gas Savings (therm/yr) | Electricity Savings Realization Rate | Gas (therm) Savings Realization Rate |
| CINC-1061 | Nicor Gas | 414,691 | 13,438 | 414,691 | 13,438 | 1.00 | 1.00 |
| | No changes were made | | | | | | |
| CINC-1166 | Nicor Gas | 179,180 | 16,163 | 179,180 | 16,163 | 1.00 | 1.00 |
| | No changes were made | | | | | | |
| CINC-1434 | Nicor Gas | 355,371 | 4,379 | 355,849 | 4,455 | 1.00 | 1.02 |
| | The analysis included savings for 24 insulated doors. However, it appears that the two larger side doors were not counted in the original analysis, and 26 doors were really installed. The evaluation team adjusted the savings to account for the 26 doors. | | | | | | |
| CINC-1435 | Nicor Gas | 584,214 | 5,432 | 584,214 | 5,432 | 1.00 | 1.00 |
| | No changes were made | | | | | | |
| CINC-1436 | Nicor Gas | 234,774 | 4,074 | 236,704 | 4,074 | 1.01 | 1.00 |
| | The evaluation team changed the baseline exterior lighting, increasing the electric savings. The original baseline calculation did not account for approximately 840' of walkway <10' wide, as well as 7280 sf of façade lighting. | | | | | | |
| CINC-1438 | Nicor Gas | 10,448 | 216 | 10,829 | 260 | 1.04 | 1.20 |
| | Based on the plans and specifications, the evaluation team changed the achieved exterior lighting power from 0.99 kW to 0.857 kW resulting in a slight increase to the electric savings. Additionally, the evaluation team increased the number of sinks from 5 to 6 (2 bathrooms, 1 staff lounge, 1 patient prep, 1 MRI, 1 CT). This resulted in increased gas savings. | | | | | | |

| Project ID | Gas Utility | Ex Ante | | Verified | | Realization Rate | |
|------------|---|------------------------------|------------------------|------------------------------|------------------------|--|--------------------------------------|
| | | Electricity Savings (kWh/yr) | Gas Savings (therm/yr) | Electricity Savings (kWh/yr) | Gas Savings (therm/yr) | Electricity Savings Realization Rate (kWh) | Gas Savings Realization Rate (therm) |
| CINC-1443 | Nicor Gas | 376,232 | 6,924 | 379,574 | 6,924 | 1.01 | 1.00 |
| | The evaluation team changed the exterior lighting power achieved value from 10.14 kW to 10.436 kW due to discrepancies in some fixture counts and wattages. The change to the lighting wattage resulted in an increase in the savings for the exterior lighting controls measure for these lights. | | | | | | |
| CINC-1444 | Nicor Gas | 136,152 | 934 | 144,486 | 992 | 1.06 | 1.06 |
| | The ex ante savings model used an area including only the warehouse portion of the building. The evaluation team changed the inputs to also include the area of the office space within the facility (77110 ft ² to 80053 ft ²). This adjustment resulted in a different model output for all interior measures. The evaluation team changed the baseline interior lighting power density from 0.432 to 0.442 W/ft ² . The original value accounted for the warehouse baseline only; however, the ex ante savings should have used a weighted average of office and warehouse spaces. For the advanced interior lighting measure, the evaluation team changed the LPD from 0.176 W/ft ² to 0.180 W/ft ² , given that the ex ante savings did not include fixtures in the office area. | | | | | | |
| CINC-1452 | Nicor Gas | 47,989 | 2,291 | 53,971 | 2,511 | 1.12 | 1.10 |
| | The evaluation team changed the area of the building in the model, resulting in changes in output values for all interior measures. The original area only included the warehouse space, so the evaluation team adjusted it to include both the warehouse and office areas. The evaluation team changed the baseline lighting power density from 0.432 W/ft ² to 0.440 W/ft ² based on a weighted average of allowed LPD in warehouse and office spaces. The evaluation team changed the achieved LPD value from 0.201 W/ft ² to 0.166 W/ft ² due to a discrepancy in fixture wattage. | | | | | | |
| CINC-1474 | Nicor Gas | 675,058 | 64,444 | 675,051 | 26,709 | 1.00 | 0.41 |
| | The evaluation team made one change to the analysis: the area per person increased to 1900 SF to match the ventilation levels from the installed MAUs. This reduced the gas savings for the MAUs as well as the gas savings for the sink aerators. | | | | | | |
| CINC-1121 | Nicor Gas | 208,383 | 3,028 | 208,383 | 3,029 | 1.00 | 1.00 |
| | No changes were made | | | | | | |
| CINC-1316 | Nicor Gas | 376,404 | 1,833 | 376,404 | 1,833 | 1.00 | 1.00 |
| | No changes were made | | | | | | |
| CINC-1344 | Nicor Gas | 121,134 | 4,237 | 121,134 | 4,237 | 1.00 | 1.00 |
| | No changes were made | | | | | | |
| CINC-1515 | Nicor Gas | 198,402 | 8,271 | 186,124 | 8,700 | 0.94 | 1.05 |

| Project ID | Gas Utility | Ex Ante | | Verified | | Realization Rate | |
|---|-------------|------------------------------|------------------------|------------------------------|------------------------|--|--------------------------------------|
| | | Electricity Savings (kWh/yr) | Gas Savings (therm/yr) | Electricity Savings (kWh/yr) | Gas Savings (therm/yr) | Electricity Savings Realization Rate (kWh) | Gas Savings Realization Rate (therm) |
| <p>The evaluation team adjusted the savings for the lighting controls. The lighting submittal shows the presence of motion sensors on warehouse lights, but there was no documentation about having a 10-minute shut-off (more aggressive than code requirement). Thus, the evaluation team reduced the savings associated with interior lighting controls by 50%, pending a request for additional information.</p> <p>Similarly, there was no evidence in the documentation for the more aggressive than code-required controls for the exterior lighting. Therefore, the evaluation team reduced the savings for that measure by 50%.</p> <p>Additionally, the evaluation team made a slight change to the installed exterior lighting power due to slight differences in fixture counts. There was some contradictory wattage information in the project documentation, so we assumed the higher wattage values, meaning that the savings may be slightly conservative.</p> | | | | | | | |
| CINC-1539 | Nicor Gas | 210,056 | 12,000 | 215,348 | 11,384 | 1.03 | 0.95 |
| <p>This project is for a warehouse that also has some office space. The evaluation team decreased the warehouse LPD slightly, from 0.25 W/sf to 0.229 W/sf. The evaluation team did not change the office space LPD. The provided documentation of lighting plans for the office space had some insufficiently labeled fixtures. Based on the labeled fixtures, the claimed value is reasonable, but there was not enough information to warrant a change to the claimed LPD.</p> <p>Additionally, the evaluation team could not find evidence of low-flow fixtures in the provided documentation, so the evaluation team reduced the savings associated with that measure by 50%.</p> | | | | | | | |

Source: ComEd and Nicor tracking data and evaluation team analysis

LPD – Lighting Power Density
MAU – Make-Up Air Unit

Appendix C. Program Specific Inputs for the Illinois TRC

Table C-1 shows the 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 C-1. 2023 Verified Cost-Effectiveness Inputs

| Program Category | Program Path | Savings Category | Units | Quantity | Effective Useful Life | Ex Ante Gross Savings (Therms) | Verified Gross Savings (Therms) | Gross Heating Penalty (Therms) | Verified Net Savings (Therms) | Net Heating Penalty (Therms) |
|------------------|----------------|-------------------------|---------|-----------|-----------------------|--------------------------------|---------------------------------|--------------------------------|-------------------------------|------------------------------|
| All Projects | Whole Building | DAC Eligible Projects | Project | 2 | 20.6 | 24,231 | 22,801 | -4,354 | 22,801 | -4,354 |
| All Projects | Whole Building | DAC Ineligible Projects | Project | 39 | 20.6 | 256,282 | 241,160 | -62,914 | 103,699 | -27,053 |
| Total | | | | 41 | | 280,513 | 263,961 | -67,267 | 126,500 | -31,407 |

Note: Totals may not sum due to rounding.

Source: Nicor Gas tracking data and Guidehouse evaluation team analysis