Guidehouse

Affordable Housing New Construction Program Impact Evaluation Report

Energy Efficiency and Demand Response Plan

Program Year 2025 (CY2025)

(01/01/2025-12/31/2025)

Prepared for:

Nicor Gas Company

Nicor Gas

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Prepared by:

Ryan Kroll
Driftless Energy

DRIFTLESS ENERGY

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 Affordable Housing New Construction program. It presents a summary of the energy impacts for the total program and for relevant measure and program structure details. The appendix presents the impact analysis methodology. Program year 2025 covers January 1 to December 31, 2025 (2025). The program was designed to provide technical assistance and incentives for energy efficient construction and major renovation of affordable multifamily housing. The program targets developers and owners constructing housing for households with incomes at or below 80% of the area median income. The program also aims to educate developers on cost-effective energy efficient building practices. The program has two participation levels: (1) major renovation and (2) new multifamily. The AHNC Program is offered jointly to affordable housing developers and owners served by ComEd and Nicor Gas, where their service territories overlap.

2 Program Description

In 2025, the AHNC Program had 24 total projects with 1,030 total dwelling units, 994 of which are income eligible units, as Table 1 shows. Nicor Gas served five of these projects, including 119 total and income-eligible units.

Table 1. 2025 Volumetric Findings Detail

Participation	Quantity Total (ComEd and Nicor Gas)	Quantity (Nicor Gas)
Projects*	24	5
Number of Affordable Units†	994	119
Number of Market Rate Units	36	0
Number of Total Units‡	1,030	119
Building Area (square feet)	1,289,344	173,796

** Participants are defined as completed projects*
† Affordable units are defined as income-eligible dwelling units.
‡ Total units are defined as total of income-eligible and market rate dwelling units.
Source: Nicor Gas tracking data and evaluation team analysis.

Natural gas savings for these projects were achieved by improvements to HVAC, shell, appliances, and hot water end use types. Table 2 summarizes the installed measure quantities that are the basis for verified energy savings.

Table 2. 2025 Installed Measure Quantities

Program Category	Measure	Quantity Unit	Installed Quantity
Shell	High-Performance Windows	Projects	4
Shell	Reduced Infiltration	Projects	4
HVAC	High-Performance HVAC Equipment	Projects	4
HVAC	Advanced HVAC Controls	Projects	2
Hot Water	High-Performance Water Heating Equipment	Projects	4
Hot Water	Hot Water Conservation	Projects	4
Appliances	Efficient Appliances	Projects	4

Source: Nicor Gas tracking data and evaluation team analysis.

3 Program Savings Detail

Table 3 summarizes the gas energy savings the Affordable Housing New Construction Program achieved by Nicor Gas projects in 2025. The program completed five projects with natural gas savings in 2025, with project realization rates (RRs) ranging from 98% to 105%. The realization rate is the ratio of the verified savings to the ex ante savings. The overall 2025 program realization rate for the Nicor Gas AHNC program was 101%.

Table 3. 2025 Annual Energy Savings Summary

Project	Ex Ante Gross Savings (Therms)	Verified Gross RR*	Verified Gross Savings (Therms)	NTG†	Verified Net Savings (Therms)
252446	4,252	100%	4,249	1.00	4,249
257123	2,904	105%	3,046	1.00	3,046
250181	20,088	100%	20,123	1.00	20,123
267616	608	100%	609	1.00	609
0086	888	98%	872	1.00	872
Total or Weighted Average	**28,741**	**101%**	**28,898**	**1.00**	**28,898**

** 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/policy/net-to-gross-framework/evaluator-ntg-recommendations-for-2025/..

Source: Evaluation team analysis.

4 Program Savings by Measure

The 2025 AHNC program includes seven measure categories as shown in Table 4. High-performance water heating equipment contributed the most savings, at 39% of the program natural gas savings. High performance HVAC equipment is the next largest category, at 34% of the program savings.

Table 4. 2025 Annual Energy Savings by Measure

Program Category	Savings Category	Ex Ante Gross Savings (Therms)	Verified Gross RR*	Verified Gross Savings (Therms)	NTG†	Verified Net Savings (Therms)
Shell	High-Performance Windows	402	108%	433	1.00	433
Shell	Reduced Infiltration	789	98%	771	1.00	771
HVAC	High-Performance HVAC Equipment	9,655	100%	9,655	1.00	9,655
HVAC	Advanced HVAC Controls	2,983	100%	2,983	1.00	2,983
Hot Water	High-Performance Water Heating Equipment	11,223	100%	11,227	1.00	11,227
Hot Water	Hot Water Conservation	3,463	104%	3,604	1.00	3,604
Appliances	Efficient Appliances	225	100%	225	1.00	225
Total or Weighted Average		**28,741**	**101%**	**28,898**	**1.00**	**28,898**

Source: Evaluation team analysis.

5 Impact Analysis Findings and Recommendations

The evaluation team developed the following findings and recommendations based on our review of the five Nicor Gas projects. Appendix A provides a description of the impact analysis methodology.

Finding 1. The evaluation team adjusted window areas, wall areas, and faucet aerator quantities and flow rates based on the documentation provided for all five projects. However, the adjustments were small and could not be attributed to any clear cause. It is possible that calculation inputs were not updated to reflect as-built specifications, typographical errors, or measurement errors. Combined, these changes resulted in a very slight (0.5%) increase in the program savings.

Recommendation 1. Consider adding quality control checks to ensure that claimed window areas, wall areas, equipment quantities and specifications are correct and consistent with as-built installed equipment.

Appendix A. Impact Analysis Methodology

The evaluation team conducted site-specific research to verify project savings that were not based on measures specified in the TRM. For the AHNC program, all completed projects with natural gas savings were reviewed.

Engineering Review of Project Files

For each selected project, an in-depth application review was performed to assess the engineering methods, parameters and assumptions used to generate all ex ante impact estimates. For each measure in the sampled project, evaluation team engineers estimated ex post gross savings based on their review of documentation and engineering analysis.

To support this review, the implementation contractor provided project documentation in electronic format for all projects. Documentation included some or all scanned files of hardcopy application forms and supporting documentation from the applicant (invoices, measure specification sheets, and vendor proposals), pre-inspection reports and photos, post inspection reports and photos, and calculation spreadsheets.

The ex ante natural gas savings for each measure are calculated using a template developed for the program. The template calculates the savings for each measure and piece of equipment based on the specifications for the individual equipment installed and the calculation approach specified in the Illinois TRM for the installed measure. Savings are calculated based on the version of the IL-TRM that was in effect when the project applications were submitted. One project was based on IL-TRM v9.0, two projects were based on IL-TRM v10.0, one project was based on IL-TRM v11.0, and one was based on IL-TRM v12.0.

To calculate AHNC program verified gross savings, the evaluation team verified that the algorithms and deemed input parameters were applied correctly and validated any custom parameters through an examination of project documentation and actual equipment specifications. The evaluation team calculated verified net savings by multiplying the verified gross savings by the net-to-gross (NTG) ratio. Table 5 presents the parameters used in the verified gross and net savings calculations and indicates the data sources used in the review. Table 6 presents measures and equipment reviewed for each project.

Table 5. Equipment by Savings Category

Measure	Parameters Reviewed	Data Source(s)
High-Performance Windows	R_baseline, R_installed, Awindows, Eff_Cool, Eff_Heat	IL-TRM† – Section 5.6.4 IL-TRM† – Section 5.6.8 Project Documentation
Air Sealing - Reduced Infiltration	N_heat, N_cool, HDD, CDD,FLH_cooling, LM, ADJ_AirSealingCooling, ADJ_AirSealingHeatFan, IE_NetCorrection	IL-TRM† – Section 5.6.1 Project Documentation
High Efficiency Furnaces High Efficiency Boilers	Baseline_AFUE, Installed_AFUE, CAP_Input, FLH_Heating	IL-TRM† – Section 5.3.7 IL-TRM† – Section 5.3.6 Project Documentation
Advanced HVAC Controls (Smart Thermostats)	%Elec heat, CF_pjm, Fe, Heating_reduction, Household factor, Eff_ISR_heat, FLH, Cooling_reduction, Eff_IST_cool, Cooling_DemandReduction	IL-TRM† – Section 5.3.16, Project Documentation
High-Performance Water Heating Equipment	Baseline UEF, gallons per day, Household, T_in, T_out, Location factor, LM, waste heat portion resulting in cooling savings, waste heat increasing heating load, CF, Hours	IL-TRM† – Section 5.4.3 Project Documentation
Faucet Aerators, Showerheads,	GPM_base, L_base, L_low, faucets per household (FPH), drain factor (DF), EPG_electric, CF, NTG†, %DHW, gallons per hour (GPH), throttling factor	IL-TRM† – Section 5.4.4 Project Documentation
Clothes Dryers	Load, Ncycles, CF, CEF_base, %Electric	IL-TRM† – Section 5.1.10 Project Documentation
Clothes Washer	Ncycles, IMEF_base, %CW, %DHW, %dryer, Hours, IWF_base, CF	IL-TRM† – Section 5.1.2 Project Documentation
Dishwasher	Maximum kWh/year, Maximum gallons/cycle, %kWh_op, %kWh_heat, Hours, CF	IL-TRM† – Section 5.1.4 Project Documentation

** Program Tracking Data (PTD) provided by Nicor Gas, extract dated January 30, 2026.*
† State of Illinois Technical Reference Manual versions 7-13.0 from http://www.ilsag.info/technical-reference-manual.html.
‡ Project files and monthly billing data provided by Nicor Gas.

Table 6. Equipment by Savings Category

Measure Category	Equipment	Projects
High-Performance Windows	High-Performance Windows	252446, 250181, 267616, 0086
Reduced Infiltration	Air-Sealing	252446, 250181, 267616, 0086
High-Performance HVAC Equipment	High Efficiency Furnaces High Efficiency Boilers	252446, 250181, 267616, 0086
Advanced HVAC Controls	Advanced Thermostats	250181, 0086
High-Performance Water Heating Equipment	In-Unit Gas Storage Water Heater In-Unit gas Tankless Water Heater Central Gas Water Heater	252446, 257123, 250181, 267616
Hot Water Conservation	Low-Flow Showerhead Bathroom Faucet Aerator Kitchen faucet Aerator	252446, 257123, 250181, 267616
Efficient Appliances	ENERGY STAR Clothes Washer ENERGY STAR Clothes Dryer ENERGY STAR Dishwasher	252446, 257123, 250181, 267616

Source: Evaluation team analysis.

Appendix B. Program Specific Inputs for the Illinois TRC

Table 7 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 7. Verified Cost Effectiveness Inputs

Savings Category	DAC Project*	Units	Quantity	Effective Useful Life	Early Replacement Flag	Verified Gross Annual Water Savings (Gallons)	Ex Ante Gross Savings (Therms)	Verified Gross Savings (Therms)	Verified Net Savings (Therms)
High-Performance Windows	TRUE	Projects	4	40.0	NO	-	402	433	433
Reduced Infiltration	TRUE	Projects	4	20.0	NO	-	789	771	771
High-Performance HVAC Equipment	TRUE	Projects	4	19.3	NO	-	9,655	9,655	9,655
Advanced HVAC Controls	TRUE	Projects	2	11.0	NO	-	2,983	2,983	2,983
High-Performance Water Heating Equipment	TRUE	Projects	4	15.0	NO	-	11,223	11,227	11,227
Hot Water Conservation	TRUE	Projects	4	10.0	NO	3,357,043	3,463	3,604	3,604
Efficient Appliances	TRUE	Projects	4	13.3	NO	292,642	225	225	225
				16.4		**3,649,685**	**28,741**	**28,898**	**28,898**

Source: Evaluation team analysis.