Home Energy Efficiency Rebates Impact Evaluation Report

Energy Efficiency Plan: Program Year 2024 (1/1/2024-12/31/2024)

Prepared for:

Nicor Gas Company

FINAL

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Introduction

This report presents the results of the impact evaluation of the Nicor Gas 2023 Home Energy Efficiency Rebates (HEER) program and a summary of the energy savings impacts achieved. The appendices present the impact analysis methodology and Illinois total resource cost (TRC) inputs. Program year 2024 covers January 1, 2024, through December 31, 2024.

Program Description

The Nicor Gas HEER program provides Nicor Gas customers with rebate incentives for purchasing high annual fuel utilization efficiency (AFUE) furnaces and boilers, tankless water heaters, and advanced thermostats. Participants may apply for the rebates themselves, or contractors may assist them in the rebate application process. Rebates are processed and sent to residential customers after installation of qualified measures. Members of the Nicor Gas Contractor Circle may offer rebates as instant discounts.

The program had 25,724 participants in 2024 and completed 26,394 projects as shown in Table 1.

Table 1. 2024 Volumetric Findings Detail

Participation	Total
Participants *	25,724
Installed Projects †	26,394

* Participants are defined as count of unique site addresses
† Installed Projects are defined as count of unique Project IDs
Source: Nicor Gas tracking data and evaluation team analysis.

Table 2 summarizes the installed measure quantities that are the basis for verified energy savings.

Table 2. 2024 Installed Measure Quantities

Measure	Quantity Unit	Installed Quantity
Advanced Thermostat - Manual Baseline	Each	5,361
Advanced Thermostat - Programmable Baseline	Each	5,686
Advanced Thermostat - Unknown Baseline	Each	7,206
Boilers, >95% AFUE <300 MBH	Each	108
Combination Boilers, >95% AFUE <300 MBH	Each	69
Furnace, >95% AFUE	Each	6,408
Furnace, >97% AFUE	Each	2,987
Tankless Water Heater	Each	338

Source: Nicor Gas tracking data and evaluation team analysis.

Program Savings Detail

Table 3 summarizes the energy savings the HEER Program achieved by path in 2024. Projects in the disadvantaged communities (DAC) have a verified net-to-gross ratio (NTG) of 1.00.

Table 3. 2024 Annual Energy Savings Summary

Program Category	Ex Ante Gross Savings (Therms)	Verified Gross RR*	Verified Gross Savings (Therms)	NTG†	NSPO‡	Verified Net Savings (Therms)
Non-Disadvantaged Communities	2,892,638	1.00	2,899,869	Varies	1.048	2,697,373
Disadvantaged Communities	521,229	1.00	521,868	1.00	N/A	521,868
Total	**3,413,867**	**1.00**	**3,421,737**			**3,219,241**

* 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-2024/. Disadvantaged communities (DAC) designated sites based on census tract have an NTG of 1.00.
‡ The market rate net savings were multiplied by a residential non-participant spillover (NPSO) factor of 1.048.
Source: Evaluation team analysis.

Program Savings by Measure

The program includes 8 measures as shown in Table 4. The advanced thermostat and furnace measures contributed the most savings. Projects in the disadvantaged communities (DAC) sites have a verified net-to-gross ratio (NTG) of 1.00.

Table 4. 2024 Annual Energy Savings by Measure

Program Category	Savings Category	Ex Ante Gross Savings (Therms)	Verified Gross RR*	Verified Gross Savings (Therms)	NTG†	NSPO‡	Verified Net Savings (Therms)
Non-Disadvantaged Communities	Advanced Thermostat - Manual Baseline	461,472	1.00	461,508	0.95	1.048	459,477
	Advanced Thermostat - Programmable Baseline	348,959	1.00	348,987	0.95	1.048	347,452
	Advanced Thermostat - Unknown Baseline	332,599	1.00	332,638	0.95	1.048	331,174
	Boilers, >95% AFUE <300 MBH	22,640	1.00	22,640	0.84	1.048	19,930
	Combination Boilers, >95% AFUE <300 MBH	14,756	1.00	14,756	0.84	1.048	12,990
	Furnace, >95% AFUE	1,081,553	1.00	1,086,114	0.84	1.048	956,128
	Furnace, >97% AFUE	607,139	1.00	609,705	0.86	1.048	549,515
	Tankless Water Heater	23,521	1.00	23,521	0.84	1.048	20,706
Non-DAC Subtotal		***2,892,638***	***1.00***	***2,899,869***			***2,697,373***
Disadvantaged Communities	Advanced Thermostat - Manual Baseline	67,086	1.00	67,167	1.00	N/A	67,167

Program Category	Savings Category	Ex Ante Gross Savings (Therms)	Verified Gross RR*	Verified Gross Savings (Therms)	NTG†	NSPO‡	Verified Net Savings (Therms)
	Advanced Thermostat - Programmable Baseline	43,329	1.00	43,329	1.00	N/A	43,329
	Advanced Thermostat - Unknown Baseline	270,864	1.00	270,870	1.00	N/A	270,870
	Boilers, >95% AFUE <300 MBH	1,099	1.00	1,099	1.00	N/A	1,099
	Combination Boilers, >95% AFUE <300 MBH	1,699	1.00	1,699	1.00	N/A	1,699
	Furnace, >95% AFUE	100,049	1.00	100,477	1.00	N/A	100,477
	Furnace, >97% AFUE	35,637	1.00	35,761	1.00	N/A	35,761
	Tankless Water Heater	1,465	1.00	1,465	1.00	N/A	1,465
DAC Subtotal		***521,229***	***1.00***	***521,868***			***521,868***
Total		**3,413,867**	**1.00**	**3,421,737**			**3,219,241**

Source: Evaluation team analysis.

Impact Analysis Findings and Recommendations

Impact Parameter Estimates

Table 5 shows the unit therm savings and realization rate findings by measure from our review. The realization rate is the ratio of the verified savings to the ex ante savings. Following the table, we provide findings and recommendations, including discussion of all measures with realization rates above or below 100%. Appendix A provides a description of the impact analysis methodology.

Table 5. Verified Gross Savings Parameters

Measure	Unit Basis	Ex Ante Gross (therms/unit)	Verified Gross (therms/unit)	Realization Rate	Data Source(s)
Advanced Thermostat - Manual Baseline	Each	Varies	Varies	100%, 116%, 153%	TRM Section 5.3.16† and PTD*
Advanced Thermostat - Programmable Baseline	Each	Varies	Varies	100%, 104%, 153%	TRM Section 5.3.16† and PTD*
Advanced Thermostat - Unknown Baseline	Each	Varies	Varies	100%, 103%, 153%	TRM Section 5.3.16† and PTD*
Boilers, >95% AFUE <300 MBH	Each	Varies	Varies	100%	TRM Section 5.3.6† and PTD*
Combination Boilers, >95% AFUE <300 MBH	Each	Varies	Varies	100%	TRM Section 5.3.17† and PTD*
Furnace, >95% AFUE	Each	Varies	Varies	86%, 95%,	TRM Section 5.3.7† and PTD*

Measure	Unit Basis	Ex Ante Gross (therms/unit)	Verified Gross (therms/unit)	Realization Rate	Data Source(s)
				100% 105%	
Furnace, >97% AFUE	Each	Varies	Varies	86%, 100%	TRM Section 5.3.7† and PTD*
Tankless Water Heater	Each	Varies	Varies	100%	TRM Section 5.4.2† and PTD*

* Program Tracking Data (PTD) provided by Nicor Gas, extract dated January 30, 2025.
† State of Illinois Technical Reference Manual version 12.0 from http://www.ilsag.info/technical-reference-manual.html.
Source: Evaluation team analysis.

Findings and Recommendations

Finding 1. Guidehouse found five advanced thermostats projects labeled as Single Family in the tracking data but used the Unknown Household Factor (96.5%) to calculate ex ante savings. We found five other advanced thermostat projects that used the Multi-Family Household Factor (65%) to calculate ex ante savings. Guidehouse used Single Family Household Factor (100%) for verified savings of these measures to align with the reported building type.

Table 6. Building Type Discrepancy

Measure ID	Ex ante Input	Verified Input
NicorMeasureID_033948936ST, _0339484315ST, _0339484683ST, _0339488792ST, and _0339488977ST	Unknown Household Factor	Single Family Household Factor
NicorMeasureID_83194ST, _675029ST, _675070ST, _675019ST, and _675277ST	Multi-Family Household Factor	Single Family Household Factor

Source: Evaluation team analysis.

Recommendation 1. Update the Household Factor for all Single Family advanced thermostats to 100%.

Finding 2. Guidehouse found instances where the ex ante savings for some thermostat and furnace measures used climate zone assumptions that did not align with the climate zone values designated in the tracking data. Guidehouse used the county climate zone inputs in the tracking data and adjusted Gas Heating Consumption and Equivalent Full Load Hours values in the verified savings calculations for these measures.

Table 7. Climate Zone Discrepancy

Measure ID	Tracking Data Climate Zone	Ex Ante Savings Climate Zone	Parameter Affected
NicorMeasureID-35d45fcb-8b82-4308-8ee5-30fcded5fb06ST	2	3	Gas Heating Consumption
NicorMeasureID-CEARPS1558303221ST)	1	2	Gas Heating Consumption

Measure ID	Tracking Data Climate Zone	Ex Ante Savings Climate Zone	Parameter Affected
NicorMeasureID-1062667675, NicorMeasureID-1069693738, NicorMeasureID-1069851951, NicorMeasureID-1070330284	3	2	Equivalent Full Load Hours
NicorMeasureID-1069905125	2	1	Equivalent Full Load Hours
NicorMeasureID-1059991017	1	2	Equivalent Full Load Hours

Source: Evaluation team analysis.

Recommendation 2. Ensure reported climate zones align with ex ante calculations, in accordance with the necessary IL TRM input assumptions.

Appendix A. Program Specific Inputs for the Illinois TRC

Table A-1 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 A-1. Verified Cost Effectiveness Inputs

Savings Category	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)
Advanced Thermostat - Manual Baseline	Each	5,361	11.0	NO	-	528,557	528,675	526,644
Advanced Thermostat - Programmable Baseline	Each	5,686	11.0	NO	-	392,288	392,316	390,781
Advanced Thermostat - Unknown Baseline	Each	7,206	11.0	NO	-	603,463	603,508	602,045
Boilers, >95% AFUE <300 MBH	Each	108	25.0	YES	-	23,739	23,739	21,030
Combination Boilers, >95% AFUE <300 MBH	Each	69	21.5	YES	-	16,456	16,456	14,690
Furnace, >95% AFUE	Each	6,408	20.0	YES	-	1,181,602	1,186,591	1,056,605
Furnace, >97% AFUE	Each	2,987	20.0	YES	-	642,775	645,466	585,276
Tankless Water Heater	Each	338	18.3	YES	-	24,986	24,986	22,171
Total or Weighted Average			**16.0**		**-**	**3,413,867**	**3,421,737**	**3,219,241**

Source: Evaluation team analysis.