Guidehouse
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Home Energy Savings Program Impact Evaluation Report

Energy Efficiency Plan: Program Year 2022 (1/1/2022-12/31/2022)

Prepared for:

Nicor Gas Company

FINAL

May 31, 2023

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1. Introduction

This report presents the impact evaluation results of the Nicor Gas 2022 Home Energy Savings (HES) program. The report 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 Illinois total resource cost (TRC) inputs. Program year 2022 covers January 1, 2022, through December 31, 2022.

2. Program Description

The HES program includes an assessment and direct install (DI) component jointly implemented by Nicor Gas and ComEd and a rebate component for air sealing, insulation, and duct sealing work completed by approved contractors. This report focuses on natural gas savings achieved by Nicor Gas program participants. Savings from electricity measures are included in a separate evaluation report delivered to ComEd.

The HES program provides a free home energy assessment (HEA) performed by an energy advisor. The energy advisor collects information about the home's energy use by examining the heating system (e.g., furnace or boiler), cooling system (air conditioner), water heater, and attic (if accessible). The energy advisor provides a customized report with recommendations identifying additional ways the customer can save energy and money. As part of the energy assessment and when appropriate, the energy advisor installs or sets DI measures. The DI measures include showerheads, faucet aerators for bathrooms and kitchen, hot water pipe insulation, and a programmable or advanced thermostat. A Virtual Home Assessment (VHA) option was added in 2020 to adapt to COVID-19 restrictions. The DI and VHA paths also distributed leave-behind kits (HEA Kits), which are composed of weatherstripping, door sweep, and shower timer measures.

In addition to the free HEA and free DI measures, the HES program offers rebates for prescriptive building shell air sealing and insulation (ASI) measures for eligible homes, installed by an approved contractor. Measures include air sealing, attic insulation, duct sealing, basement sidewall insulation, and wall insulation. Air sealing includes sealing gaps and cracks in a wall where air can get in and out. The contractor performs a blower door test to measure the air leakage in the home. For participants to receive the instant discount for attic insulation, they must have air sealing and attic insulation installed at the same time.

The 2022 HES program included a new path, Smart Thermostat Initiative, through which Nicor Gas offered Nest-E thermostats to program participants to upgrade their existing thermostats.

The HES program in 2022 included projects implemented as part of market rate home energy assessment (MR HEA) between ComEd and Nicor Gas with (42/58%) therms allocation split respectively, and those implemented with (37/63%) split, all based on cost sharing and as part of Nicor Gas HES program.

The program had 9,653 participants in 2022 and completed 10,092 projects as Table 2-1 and Table 2-2 show.

Table 2-1. 2022 Volumetric Findings Detail

Participation	ASI	DI	VHA	STI	Total
Participants *	1,109	7,727	669	225	**9,653**
Installed Projects †	1,117	7,973	778	225	**10,092**

* Participants are defined as the number of distinct building premise IDs with realized gas savings. Some participants may have both DI and ASI or VHA measures.
† Installed projects are defined as the number of distinct project IDs with realized gas savings.
Source: Nicor Gas tracking data and Guidehouse evaluation team analysis

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

Table 2-2. 2022 Installed Measure Quantities

Program Path	Measure	Quantity Unit	Installed Quantity
Direct Install (DI)	Advanced Thermostat (DI) - Blended	Each	149
	Advanced Thermostat (DI) - Manual	Each	663
	Advanced Thermostat (DI) - Programmable	Each	655
	Bathroom Aerator SF (DI)	Each	4,177
	Boiler Pipe Insulation	Linear Feet	1,004
	DHW Pipe Insulation	Linear Feet	9,764
	Handheld Showerhead (DI) SF	Each	1,447
	HEA Kit	Each	7,463
	Kitchen Aerator SF (DI)	Each	790
	Programmable Thermostat (DI)	Each	550
	Showerhead (DI) SF	Each	2,203
	Thermostat Education (DI)	Each	412
Prescriptive	Air Sealing	Projects	935
	Air Sealing Without Attic Insulation	Projects	145
	Attic Insulation	Square Feet	1,199,627
	Basement/Sidewall Insulation	Square Feet	20,014
	Duct Sealing	Projects	33
	Wall Insulation SF	Square Feet	45,806
Smart Thermostat Initiative	Advanced Thermostat (DI) - Blended	Each	6
	Advanced Thermostat (DI) - Manual	Each	6
	Advanced Thermostat (DI) - Programmable	Each	223
Virtual Home Assessment (VHA)	Advanced Thermostat (DI) - Blended	Each	10
	Advanced Thermostat (DI) - Manual	Each	48
	Advanced Thermostat (DI) - Programmable	Each	39
	Bathroom Aerator SF (DI)	Each	972

Program Path	Measure	Quantity Unit	Installed Quantity
	Boiler Pipe Insulation	Linear Feet	1,366
	DHW Pipe Insulation	Linear Feet	2,301
	Handheld Showerhead (DI) SF	Each	545
	HEA Kit	Each	658
	Kitchen Aerator SF (DI)	Each	122
	Programmable Thermostat (DI)	Each	23
	Showerhead (DI) SF	Each	313

SF is a tracking data label that references Single Family measures.
DHW is an acronym for Domestic Hot Water.
Source: Nicor Gas tracking data and Guidehouse evaluation team analysis

3. Program Savings Detail

Table 3-1 summarizes the energy savings the HES program achieved by path in 2022.

Table 3-1. 2022 Annual Energy Savings Summary

Participation	Program Path	Ex Ante Gross Savings (therms)	Verified Gross RR*	Verified Gross Savings (therms)	NTG †	Verified Net Savings (therms)
Gas Only	Direct Install (DI)	10,806	101%	10,885	0.94	10,274
	Prescriptive Air Sealing and Insulation (ASI)	241,786	98%	236,688	0.88	208,933
	Virtual Home Assessment (VHA)	16,519	100%	16,519	0.90	14,867
	Smart Thermostat Initiative	256	100%	256	0.98	249
Joint	Direct Install (DI)	183,704	101%	186,448	0.93	173,744
	Virtual Home Assessment (VHA)	16,180	100%	16,212	0.97	15,649
	Total or Weighted Average	**469,252**	**100%**	**467,009**	**0.91**	**423,717**

* Realization rate (RR) is the ratio of verified gross savings to ex ante gross savings based on evaluation research findings.
† Net-to-Gross (NTG): A deemed value. Available on the Stakeholder Advisory Group (SAG) website: https://www.ilsag.info/evaluator-ntg-recommendations-for-2022/.
Source: Guidehouse evaluation team analysis

4. Program Savings by Measure

The program includes 32 measures as shown in Table 4-1. The Leave Behind Kits (HEA Kits) and Attic Insulation measures contributed the most savings.

Table 4-1. 2022 Annual Energy Savings by Measure

Program Path	Savings Category	Ex Ante Gross Savings (therms)	Verified Gross RR*	Verified Gross Savings (therms)	NTG†	Verified Net Savings (therms)
Direct Install (DI)	Advanced Thermostat (DI) - Blended	1,230	100%	1,230	0.90	1,107
	Advanced Thermostat (DI) - Manual	41,805	100%	41,805	0.90	37,625
	Advanced Thermostat (DI) - Programmable	28,771	100%	28,782	0.90	25,904
	Bathroom Aerator SF (DI)	2,600	100%	2,589	1.07	2,770
	Boiler Pipe Insulation	447	100%	447	0.99	442
	DHW Pipe Insulation	12,064	100%	12,064	0.99	11,943
	Handheld Showerhead (DI) SF	2,728	100%	2,723	1.07	2,914
	HEA Kit	59,520	100%	59,282	0.99	58,689
	Kitchen Aerator SF (DI)	4,536	100%	4,536	1.07	4,854
	Programmable Thermostat (DI)	21,668	105%	22,760	0.81	18,436
	Showerhead (DI) SF	4,129	153%	6,303	1.07	6,744
	Thermostat Education (DI)	15,011	99%	14,812	0.85	12,590
	DI Subtotal	***194,511***	***101%***	***197,333***	***0.93***	***184,018***
Prescriptive (ASI)	Air Sealing	70,970	92%	65,618	0.88	57,744
	Air Sealing Without Attic Insulation	11,214	102%	11,469	0.83	9,519
	Attic Insulation	130,793	100%	130,797	0.89	116,409
	Basement/Sidewall Insulation	13,966	100%	13,965	0.85	11,870
	Duct Sealing	9,717	100%	9,717	0.93	9,037
	Wall Insulation SF	5,126	100%	5,122	0.85	4,354
	ASI Subtotal	***241,786***	***98%***	***236,688***	***0.88***	***208,933***
Smart Thermostat Initiative (STI)	Advanced Thermostat (DI) - Blended	427	100%	427	0.9	384
	Advanced Thermostat (DI) - Manual	615	100%	615	0.9	554
	Advanced Thermostat (DI) - Programmable	15,477	100%	15,477	0.9	13,929
	STI Subtotal	***16,519***	***100%***	***16,519***	***0.9***	***14,867***
Virtual Home Assessment (VHA)	Advanced Thermostat (DI) - Blended	54	100%	54	0.9	48
	Advanced Thermostat (DI) - Manual	3,040	100%	3,040	0.9	2,736

Program Path	Savings Category	Ex Ante Gross Savings (therms)	Verified Gross RR*	Verified Gross Savings (therms)	NTG†	Verified Net Savings (therms)
	Advanced Thermostat (DI) - Programmable	1,697	100%	1,697	0.90	1,527
	Bathroom Aerator SF (DI)	485	100%	485	1.07	519
	Boiler Pipe Insulation	552	100%	552	0.99	546
	DHW Pipe Insulation	2,801	100%	2,801	0.99	2,773
	Handheld Showerhead (DI) SF	845	100%	841	1.07	900
	HEA Kit	5,062	100%	5,062	0.99	5,011
	Kitchen Aerator SF (DI)	557	100%	557	1.07	596
	Programmable Thermostat (DI)	868	104%	904	0.81	732
	Showerhead (DI) SF	477	100%	476	1.07	509
	VHA Subtotal	***16,436***	***100%***	***16,468***	***0.98***	***15,898***
	Total or Weighted Average	**469,252**	**100%**	**467,009**	**0.91**	**423,717**

* RR is the ratio of verified gross savings to ex ante gross savings based on evaluation research findings.
† Net-to-Gross: A deemed value. Available on the SAG website: https://www.ilsag.info/evaluator-ntg-recommendations-for-2022/.99
Source: Nicor Gas tracking data and Guidehouse evaluation team analysis

5. Impact Analysis Findings and Recommendations

5.1 Impact Parameter Estimates

Table 5-1 shows the unit therms savings and realization rate (RR) findings by measure from the evaluation team's review. The RR is the ratio of the verified savings to the ex ante savings. Following the table, the report provides findings and recommendations, including discussion of all measures with RR above or below 100%. Appendix A provides a description of the impact analysis methodology.

Table 5-1. Verified Gross Savings Parameters

Measure	Unit Basis	Ex Ante Gross (therms/unit)	Verified Gross (therms/unit)	Realization Rate	Data Source(s)
Advanced Thermostat (DI) - Blended	Each	85.43 or 89.42	Varies	100%	Illinois TRM, v10.0, Section 5.3.16, and PTD
Advanced Thermostat (DI) - Manual	Each	87.82 or 102.51 or 107.30	Varies	100%	Illinois TRM, v10.0, Section 5.3.16, and PTD
Advanced Thermostat (DI) - Programmable	Each	61.63 or 71.36 or 74.69 or 140.39	Varies	100%	Illinois TRM, v10.0, Section 5.3.16, and PTD

Measure	Unit Basis	Ex Ante Gross (therms/unit)	Verified Gross (therms/unit)	Realization Rate	Data Source(s)
Air Sealing	Project	Varies	Varies	92%	Illinois TRM, v10.0, Section 5.6.1 and PTD
Air Sealing Without Attic Insulation	Project	Varies	Varies	102%	Illinois TRM, v10.0, Section 5.6.1 and PTD
Attic Insulation	Sq. Ft.	Varies	Varies	100%	Illinois TRM, v10.0, Section 5.6.5 and PTD
Basement/Sidewall Insulation	Sq. Ft.	Varies	Varies	100%	Illinois TRM, v10.0, Section 5.6.2 and PTD
Bathroom Aerator SF (DI)	Each	Varies	Varies	100%	Illinois TRM, v10.0, Section 5.4.4 and PTD
Boiler Pipe Insulation	Linear Ft.	Varies	Varies	100%	Illinois TRM, v10.0, Section 5.3.2 and PTD
DHW Pipe Insulation	Linear Ft.	Varies	Varies	100%	Illinois TRM, v10.0, Section 5.4.1 and PTD
Duct Sealing	Project	Varies	Varies	100%	Illinois TRM, v10.0, Section 5.3.4 and PTD
Handheld Showerhead (DI) SF	Each	Varies	Varies	100%	Illinois TRM, v10.0, Section 5.4.5 and PTD
HEA Kit	Each	Varies	Varies	100%	Illinois TRM, v10.0, Section 5.4.9 & 5.6.1, 4.8.16 and PTD
Kitchen Aerator SF (DI)	Each	Varies	Varies	100%	Illinois TRM, v10.0, Section 5.4.4 and PTD
Programmable Thermostat (DI)	Each	Varies	Varies	104%	Illinois TRM, v10.0, Section 5.3.11 and PTD
Showerhead (DI) SF	Each	Varies	Varies	147%	Illinois TRM, v10.0, Section 5.4.5 and PTD
Thermostat Education (DI)	Each	Varies	Varies	99%	Illinois TRM, v10.0, Section 5.3.11 and PTD
Wall Insulation SF	Sq. Ft.	Varies	Varies	100%	Illinois TRM, v10.0, Section 5.6.4 and PTD

* Program tracking data (PTD) provided by Nicor Gas, extract dated January 31, 2023.
† Illinois Statewide Technical Reference Manual (IL-TRM) version 10.0 from **http://www.ilsag.info/technical-reference-manual.html**.
‡ Project files and monthly billing data provided by Nicor Gas. Where conducted, onsite or telephone interview data collected by Guidehouse.
Source: Nicor Gas tracking data and Guidehouse evaluation team analysis

5.2 Findings and Recommendations

5.2.1 Advanced Thermostats Household Factor

Finding 1. All Advanced Thermostats were labeled as Single Family (SF) in the tracking data (see Residential Building Type column). However, the tracking data denotes household factors for 71 measures as 65% and 83%, indicating that these may be Multi Family or Mobile Home properties, respectively. Verified savings reflect SF values for all thermostats.

> **Recommendation 1.** Ensure household factor of 100% is always used for all SF Thermostats.

5.2.2 Advanced Thermostats Heating Reduction

Finding 2. The evaluation team found 33 instances where the tracking data included an incorrect heating reduction value for Blended, Manual, and Programmable thermostats. Verified savings reflect the correct heating reduction value based on the measure name.

> **Recommendation 2.** Use a heating reduction value of 8.5% for blended thermostats, 10.2% for manual thermostats, and 7.1% for programmable thermostats. Ensure that the thermostat type in the Measure Notes field in the tracking data matches the description from the Measure Name field.

5.2.3 Air Sealing CFM50 Existing Value

Finding 3. The TRM allows custom values for CFM50_existing (infiltration at 50 Pascals as measured by blower door before air sealing). The evaluation team found 23 instances in the tracking data where the pre-install value (CFM50_existing) was 2. This low value resulted in negative verified savings values for 23 measures. Guidehouse requested and received updated input values from Nicor Gas[1] which were used to verify savings.

> **Recommendation 3.** Ensure that CFM50_existing is properly tracked in the data.

5.2.4 Air Sealing and Air Sealing with Attic Insulation

Finding 4. The evaluation team found 13 instances where ex ante savings calculations for air sealing without attic insulation used adjustment factor inputs for projects installed with attic insulation. Guidehouse confirmed these 13 instances were installed without attic insulation using Vendor Project IDs. There were two instances (MEA-2022.03.21-278898 and MEA-2022.08.10-384959) where air sealing projects installed with attic insulation used values that reflect inputs for projects installed without attic insulation. Guidehouse confirmed these two instances were installed without attic insulation using the Vendor Project IDs.

> **Recommendation 4a.** Ensure that air sealing projects (with and without attic insulation) are properly labeled in the tracking data.

[1] Nicor HES Attic Insulation_Basement Sidewall Insulation Calculators_Finding 5.xlsx, provided on 3/15/2023.

Recommendation 4b. Market rate projects should use an income eligible net correction value of 100% for air sealing installed both with and without attic insulation. Income eligible projects should use an income eligible net correction value of 110% for air sealing installed with attic insulation.

Recommendation 4c. Use an adjustment factor value of 72% for air sealing installed with attic insulation and a value of 100% for air sealing without attic insulation.

5.2.5 Attic Insulation

Finding 5. The evaluation team was not able to use the tracking data inputs to calculate the claimed ex ante savings. The team determined R values were incorrectly recorded for 25 instances of attic insulation when we used the tracking inputs to estimate verified savings. The evaluator was able to reconcile these differences after receiving a supplemental data file from the implementer.

Recommendation 5. Ensure tracking data actual inputs, including R_exist and R_new assumptions, are consistent with the claimed ex ante calculations.

5.2.6 Bathroom Aerator In Service Rate Values

Finding 6. Guidehouse found 28 instances in the tracking data where bathroom aerators were installed within the VHA path, but the data lists these with a DI In Service Rate (ISR) value. Similarly, three bathroom aerators were labeled as DI measures but were given VHA ISR values in the tracking data.

Recommendation 6. For each measure, be sure to use the correct ISR according to program path. The SF VHA bathroom aerators should use an ISR value of 95%, and SF DI bathroom aerators use an ISR value of 78%.

5.2.7 Low Flow Showerheads Housing Factor and ISR

Finding 7. All Showerheads and Handheld Showerheads were labeled as SF in the tracking data. The evaluator found several instances where ex ante savings calculations were using Multi Family Housing Factor values and Multi Family ISR values.

Recommendation 7a. For each measure, the program should use the correct housing factor according to home type. All SF Showerheads use a Housing Factor of 2.56.

Recommendation 7b. Ensure all SF DI showerheads use an ISR value of 97%, and that SF VHA showerheads use 79.5% for one showerhead and 82% for two showerheads, according to the TRM recommendations.

5.2.8 HEA/Leave-Behind Kits

Finding 8. Kit savings are based on Domestic Hot Water (DHW) Fuel Type and Heating Fuel Type for each installation. Fuel Types are defined for most measures in the System tab of

tracking data. Guidehouse relied on the ComEd tracking data to determine DHW Fuel Type for 59 measures due to missing inputs in Nicor Gas data. DHW Fuel Type was not found in the Nicor Gas or ComEd data for 27 measures. Guidehouse determined these unknown 27 measures to have a gas DHW system. The evaluator also found one instance (MEA-2022.04.19-323419) where the quantity was blank. Guidehouse assumed this blank quantity was one as all other kit measures had a quantity of one.

Recommendation 8. Ensure DHW and Heating Fuel Types are defined for all kit measures. Ensure quantities are defined for each measure.

5.2.9 Kitchen Aerator ISR Values

Finding 9. The evaluator found eight instances where the tracking data lists DI ISR values for kitchen aerators that were installed under the VHA program path. Guidehouse also found 33 instances where program tracking data (PTD) lists a Multi Family ISR value, while all kitchen aerators are defined as SF. In total, the evaluator found 219 instances of kitchen aerators where data points (specifically ISR values) were incorrectly reported in the final data file. The evaluator was able to reconcile these discrepancies after receiving a supplemental data file from the implementer with the correct ISR values.

Recommendation 9. Ensure all SF DI kitchen aerators use an ISR value of 95%. Ensure all SF VHA kitchen aerators use an ISR value of 76.5%.

5.2.10 Programmable Thermostats and Thermostat Education

Finding 10. The evaluation team found one project where the tracking data listed the wrong heating reduction value for programmable thermostats. We found two instances where the tracking data lists the Multi Family Household Factor for SF VHA projects. The tracking data did not provide savings inputs for seven thermostat education measures and 11 programmable thermostats, although the ex ante savings were non-zero. Guidehouse used TRM assumptions to determine verified savings. Heating consumption was blank for 3 programmable thermostats, and 19 boiler programmable thermostats listed furnace heating consumption inputs in the tracking data.

Recommendation 10a. Use a heating reduction value of 6.2% for all programmable thermostats. Ensure all SF VHA thermostat projects use a household factor of 100%.

Recommendation 10b. Ensure savings inputs are adequately populated for all Programmable Thermostats and Thermostat Education projects.

5.2.11 DHW and Boiler Pipe Insulations

Finding 11. Guidehouse was not able to replicate the tracking ex ante savings for Boiler Pipe Insulation measures and DHW Pipe Insulation measures. The tracking data did not provide pipe type information, circumference, effective length, and pre and post R values. Length information was missing from one project (MEA-2022.04.19-323499), and the Post Installation Efficiency

column was blank for 139 measures. Circumference was blank for all entries. While R_new values were mislabeled, Guidehouse referenced deemed values from the 2022 DHW and Boiler Pipe Insulation calculator provided by the program implementer and approved by Guidehouse to determine verified savings.[2] The verified savings reflect unknown pipe type and configuration for R-3 and R-5. The evaluator was able to reconcile these discrepancies after receiving a supplemental data file from the implementer with the correct R values.

Recommendation 11. Include in the tracking system, the actual values for R_exist, R_new, C_inside, L_effective to use the algorithm from TRM v10.0 or use average values from the calculator to determine ex ante savings for DHW and Boiler Pipe insulation measures.

5.2.12 Market Rate vs Income Eligible Projects

Finding 12. Guidehouse received the Market Rate HEA (MR HEA) tracking data along with data categorized under the joint implementation with ComEd as Income Eligible HEA (HEA IE). The dataset did not specify which individual project paths were MR or IE. The evaluator relied on joint ComEd data where possible to determine percent allocation and where MR or IE savings inputs were applied.[3] Evaluation applied MR NTG to all measures to calculate net savings based on the understanding from Nicor Gas that all the HEA projects fall under the MR program implementation.

Recommendation 12. Label projects as MR or IE in the tracking data to enable evaluation to easily identify the programs path and applicable therms allocations and savings.

[2] 2022 DHW and Boiler Pipe Insulation.xlsx, was based on TRM algorithm and assumptions. It was submitted by Nicor Gas and approved by Guidehouse on 12/8/2022.

[3] Therms allocation split between ComEd/Nicor Gas was 42/58% for MR HEA and 37/63% for IE HEA.

Appendix A. Impact Analysis Methodology

Guidehouse calculated gross savings by using the methodologies prescribed in IL-TRM v10.0[4] and the inputs provided in the program tracking database when available.

Guidehouse calculated verified net energy savings by multiplying the verified gross savings estimates by a net-to-gross (NTG) ratio. In 2022, the NTG values used to calculate the net verified savings were based on past evaluation research and defined by a consensus process through the Illinois Stakeholder Advisory Group.

[4] Illinois Statewide Technical Reference Manual version 10.0 from **http://www.ilsag.info/technical-reference-manual.html**

Appendix B. Program-Specific Inputs for the Illinois TRC

Table B-1 shows the TRC cost-effectiveness analysis inputs available at the time of producing this impact evaluation report. Currently, 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 B-1. Verified Cost-Effectiveness Inputs

Program Path	Savings Category	Units	Quantity	Effective Useful Life	Ex Ante Gross Savings (therms)	Verified Gross Savings (therms)	Verified Net Savings (therms)
Direct Install (DI)	Advanced Thermostat (DI) - Blended	Each	149	11	1,230	1,230	1,107
	Advanced Thermostat (DI) - Manual	Each	663	11	41,805	41,805	37,625
	Advanced Thermostat (DI) - Programmable	Each	655	11	28,771	28,782	25,904
	Bathroom Aerator SF (DI)	Each	4,177	10	2,600	2,589	2,770
	Boiler Pipe Insulation	Linear Feet	1,004	15	447	447	442
	DHW Pipe Insulation	Linear Feet	9,764	15	12,064	12,064	11,943
	Handheld Showerhead (DI) SF	Each	1,447	10	2,728	2,723	2,914
	HEA Kit	Each	7,463	15.1	59,520	59,282	58,689
	Kitchen Aerator SF (DI)	Each	790	10	4,536	4,536	4,854
	Programmable Thermostat (DI)	Each	550	16	21,668	22,760	18,436
	Showerhead (DI) SF	Each	2,203	10	4,129	6,303	6,744
	Thermostat Education (DI)	Each	412	2	15,011	14,812	12,590
Prescriptive	Air Sealing	Projects	935	20	70,970	65,618	57,744
	Air Sealing Without Attic Insulation	Projects	145	20	11,214	11,469	9,519
	Attic Insulation	Square Feet	1,199,627	20	130,793	130,797	116,409
	Basement/Sidewall Insulation	Square Feet	20,014	20	13,966	13,965	11,870
	Duct Sealing	Projects	33	18.5	9,717	9,717	9,037
	Wall Insulation SF	Square Feet	45,806	20	5,126	5,122	4,354

Program Path	Savings Category	Units	Quantity	Effective Useful Life	Ex Ante Gross Savings (therms)	Verified Gross Savings (therms)	Verified Net Savings (therms)
Smart Thermostat Initiative	Advanced Thermostat (DI) - Blended	Each	6	11	427	427	384
	Advanced Thermostat (DI) - Manual	Each	6	11	615	615	554
	Advanced Thermostat (DI) - Programmable	Each	223	11	15,477	15,477	13,929
Virtual Home Assessment (VHA)	Advanced Thermostat (DI) - Blended	Each	10	11	54	54	48
	Advanced Thermostat (DI) - Manual	Each	48	11	3,040	3,040	2,736
	Advanced Thermostat (DI) - Programmable	Each	39	11	1,697	1,697	1,527
	Bathroom Aerator SF (DI)	Each	972	10	485	485	519
	Boiler Pipe Insulation	Linear Feet	1,366	15	552	552	546
	DHW Pipe Insulation	Linear Feet	2,301	15	2,801	2,801	2,773
	Handheld Showerhead (DI) SF	Each	545	10	845	841	900
	HEA Kit	Each	658	15.1	5,062	5,062	5,011
	Kitchen Aerator SF (DI)	Each	122	10	557	557	596
	Programmable Thermostat (DI)	Each	23	16	868	904	732
	Showerhead (DI) SF	Each	313	10	477	476	509
Total or Weighted Average				**19.7**	**469,252**	**467,009**	**423,717**

Source: Nicor Gas tracking data and Guidehouse evaluation team analysis