



# Energy Savings Kits Program Impact Evaluation Report

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

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Nicor Gas Company

FINAL

May 31, 2023

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## 1. Introduction

This report presents the results of the impact evaluation of the Nicor Gas 2022 Energy Saving Kits (ESK) program. It presents a summary of the energy impacts for the total program and broken out by relevant measure and program kit structure details. The appendix presents the impact analysis methodology and cost-effectiveness input summary. Program year 2022 covers kit deliveries between January 1 through December 31, 2022.

## 2. Program Description

The Nicor Gas ESK Program provides hot water (marketed as water savings kits) and weatherization efficiency measures (via weatherization kits) that reduce customer natural gas consumption. The offering targets customers through direct email, outreach events, targeted emails, Nicor Gas Energy Efficiency Program website promotions, and through financial heating assistance intake centers. The kits are free and are available to all Nicor Gas single family (SF) and multi-family (MF) residential customers upon request. There are three kit versions containing water saving measure combinations (abbreviated Kit 1, Kit 2 and Kit 3). A fourth kit combination (Kit 4) includes weatherization gas space heating reduction measures. The weatherization measures include outlet and switch gasket covers, foam tape weatherstripping, v-seal weatherstripping, a self-adhesive door sweep, and a roll of rope caulk. Table 2-1 summarizes total 2022 kit distributions. Customers may request one of either Kit 1, Kit 2, or Kit 3 plus up to two of Kit 4.

The program had 15,660 participants in 2022 based on total delivered kits as Table 2-1 shows.

**Table 2-1. 2022 Volumetric Findings Detail**

Participation	
<b>Water-Saving Kits</b>	
Participants *	6,034
<b>Weatherization Kits</b>	
Participants *	14,034

\* Participants are defined as distributed kits

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 Category	Program Path	Measure	Quantity Unit	Installed Quantity
ESK	Water-Saving Kits	Bath Aerator	Each	11,437
ESK	Water-Saving Kits	Kitchen Aerator	Each	6,034
ESK	Water-Saving Kits	Showerhead	Each	10,421
ESK	Water-Saving Kits	Shower Timer	Each	6,034
ESK	Weatherization Kits	Outlet Cover	Each	168,408
ESK	Weatherization Kits	Foam Tape	Feet	238,578
ESK	Weatherization Kits	V-Seal	Feet	238,578
ESK	Weatherization Kits	Door Sweep	Each	14,034
ESK	Weatherization Kits	Rope Caulk	Feet	421,020

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

### 3. Program Savings Detail

Table 3-1 summarizes the energy savings the Energy Savings Kit Program achieved by path in 2022. Savings are also tracked by whether kits were delivered to single or multi-family (MF) homes.

**Table 3-1. 2022 Annual Energy Savings Summary**

Program Path	Ex Ante Gross Savings (Therms)	Verified Gross RR†	Verified Gross Savings (Therms)	NTG+	Verified Net Savings (Therms)
<b>Water-Saving Kits</b>					
Kit 1	15,232	100%	15,247	1.10	16,772
Kit 1 MF	3,449	100%	3,455	1.10	3,801
Kit 2	97,514	100%	97,615	1.10	107,376
Kit 2 MF	19,958	100%	19,978	1.10	21,976
Kit 3	8,992	100%	9,006	1.10	9,907
Kit 3 MF	2,158	100%	2,161	1.10	2,377
<b>Water-Saving Kits Subtotal</b>	<b>147,305</b>	<b>100%</b>	<b>147,462</b>	<b>1.10</b>	<b>162,209</b>
<b>Weatherization Kits</b>					
Kit 4	266,558	100%	266,535	0.91	242,547
Kit 4 MF	43,734	100%	43,730	0.91	39,794
<b>Weatherization Kits Subtotals</b>	<b>310,292</b>	<b>100%</b>	<b>310,265</b>	<b>0.91</b>	<b>282,341</b>
<b>Total</b>	<b>457,596</b>	<b>100%</b>	<b>457,727</b>		<b>444,550</b>

\* Ex ante savings reported in the tracking data and in Table 3-1 are claimed at the kit level so ex ante savings presented at the measure level in the subsequent tables do not sum exactly to the program total due to rounding differences. Table 3-1 ex ante savings by kit differs by 131 therms compared with ex ante savings by measure shown in other tables in the report.

† 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/evaluator-ntg-recommendations-for-2022/>.

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

## 4. Program Savings by Measure

The program includes nine different measures offered to customers either in water-saving or weatherization kits, as shown in Table 4-1. Weatherization measures (Kit 4) contributed the most 2022 savings, with showerheads being the largest single measure (81,067 annual therms). Rope caulk provided the second most gas savings (76,915 therms). Table 4-2 further details measure level savings by whether the kit measures were delivered to single or multi-family homes.

**Table 4-1. 2022 Annual Energy Savings by Measure**

Program Management	Savings Category	Ex Ante Gross Savings (Therms)	Verified Gross RR*	Verified Gross Savings (Therms)	NTG†	Verified Net Savings (Therms)
<b>Nicor Gas - Water-Saving Kits</b>	Bath Aerator	8,324	100%	8,324	1.10	9,157
	Kitchen Aerator	34,117	100%	34,117	1.10	37,529
	Showerhead	81,067	100%	81,067	1.10	89,173
	Shower Timer	23,954	100%	23,954	1.10	26,350
<b>Nicor Gas - Water-Saving Kits Subtotal</b>		<b>147,462</b>	<b>100%</b>	<b>147,162</b>	<b>1.10</b>	<b>162,209</b>
<b>Nicor Gas - Weatherization Kits</b>	Gaskets	37,993	100%	37,933	0.91	34,573
	Foam Tape	71,947	100%	71,947	0.91	65,472
	V-Seal	66,145	100%	66,145	0.91	60,192
	Door Sweep	57,264	100%	57,264	0.91	52,110
	Rope Caulk	76,915	100%	76,915	0.91	69,993
<b>Nicor Gas - Weatherization Kits Subtotal</b>		<b>310,265</b>	<b>100%</b>	<b>310,265</b>	<b>0.91</b>	<b>282,341</b>
<b>Total</b>		<b>457,727</b>	<b>100%</b>	<b>457,727</b>		<b>444,550</b>

\* 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/evaluator-ntg-recommendations-for-2022/>.

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

**Table 4-2. 2022 Annual Energy Savings by Measure and Home Type**

Measure	Quantity Distributed	Ex Ante Gross Savings (Therms)	Verified Gross RR*	Verified Gross Savings (Therms)	NTG†	Verified Net Savings (Therms)
<b>Water-Saving Kits</b>						
Bath Aerators SF	9,725	6,328	1.00	6,328	110%	6,961
Bath Aerators MF	1,712	1,996	1.00	1,996	110%	2,196
Kitchen Aerators SF	5,123	29,115	1.00	29,115	110%	32,027
Kitchen Aerators MF	911	5,002	1.00	5,002	110%	5,502
Showerhead SF	8,875	65,954	1.00	65,954	110%	72,550
Showerhead MF	1,546	15,112	1.00	15,112	110%	16,624
Shower Timer SF	5,123	20,471	1.00	20,471	110%	22,518
Shower Timer MF	911	3,484	1.00	3,484	110%	3,832
<b>Weatherization Kits</b>						
Gaskets SF	144,672	32,638	1.00	32,638	91%	29,701
Gaskets MF	23,736	5,355	1.00	5,355	91%	4,873
Foam Tape SF	204,952	61,807	1.00	61,807	91%	56,244
Foam Tape MF	33,626	10,141	1.00	10,141	91%	9,228
V-Seal SF	204,952	56,823	1.00	56,823	91%	51,709
V-Seal MF	33,626	9,323	1.00	9,323	91%	8,484
Door Sweep SF	12,056	49,193	1.00	49,193	91%	44,766
Door Sweep MF	1,978	8,071	1.00	8,071	91%	7,345
Rope Caulk SF	361,680	66,075	1.00	66,075	91%	60,128
Rope Caulk MF	59,340	10,841	1.00	10,841	91%	9,865
<b>Total or Weighted Average</b>	<b>1,114,544</b>	<b>457,727</b>	<b>1.00</b>	<b>457,727</b>		<b>444,550</b>

\* 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/evaluator-ntg-recommendations-for-2022/>.

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

## 5. Impact Analysis Findings and Recommendations

The Guidehouse team determined verified gross savings for each measure by conducting a tracking system review and measure level calculations. Calculated verified gross savings applied Illinois TRM v10.0 methodology including inputs and formulas. The evaluation team's verified gross savings calculation uses non-rounded input values for per-kit unit therm savings. In contrast, Nicor Gas savings report extracts rounds ex ante per-kit gross savings to two digits after the decimal point. These rounding differences cause minor differences in total therms for the program (typically less than 0.1%) are not Nicor Gas calculation errors.

### 5.1 Impact Parameter Estimates

Table 5-1 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, findings and recommendations are provided, including discussion of all measures with realization rates 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)†
<b>Water-Saving Kits</b>					
Bath Aerators SF	Each	0.65	0.65	100%	2022 IL TRM v10.0 Vol. 3, 5.4.4
Bath Aerators MF	Each	1.17	1.17	100%	2022 IL TRM v10.0 Vol. 3, 5.4.4
Kitchen Aerators SF	Each	5.68	5.68	100%	2022 IL TRM v10.0 Vol. 3, 5.4.4
Kitchen Aerators MF	Each	5.49	5.49	100%	2022 IL TRM v10.0 Vol. 3, 5.4.4
Showerhead SF	Each	7.43	7.43	100%	2022 IL TRM v10.0 Vol. 3, 5.4.5
Showerhead MF	Each	9.77	9.77	100%	2022 IL TRM v10.0 Vol. 3, 5.4.5
Shower Timer SF	Each	4.00	4.00	100%	2022 IL TRM v10.0 Vol. 3, 5.4.9
Shower Timer MF	Each	3.82	3.82	100%	2022 IL TRM v10.0 Vol. 3, 5.4.9
<b>Weatherization Kits</b>					
Gaskets SF	Feet	0.23	0.23	100%	2022 IL TRM v10.0 Vol. 3, 5.6.1
Gaskets MF	Feet	0.23	0.23	100%	2022 IL TRM v10.0 Vol. 3, 5.6.1
Foam Tape SF	Feet	0.30	0.30	100%	2022 IL TRM v10.0 Vol. 3, 5.6.1
Foam Tape MF	Feet	0.30	0.30	100%	2022 IL TRM v10.0 Vol. 3, 5.6.1
V-Seal SF	Feet	0.28	0.28	100%	2022 IL TRM v10.0 Vol. 3, 5.6.1
V-Seal MF	Feet	0.28	0.28	100%	2022 IL TRM v10.0 Vol. 3, 5.6.1
Door Sweep SF	Each	4.08	4.08	100%	2022 IL TRM v10.0 Vol. 3, 5.6.1
Door Sweep MF	Each	4.08	4.08	100%	2022 IL TRM v10.0 Vol. 3, 5.6.1



Measure	Unit Basis	Ex Ante Gross (therms/unit)*	Verified Gross (therms/unit)	Realization Rate	Data Source(s)†
Rope Caulk SF	Feet	0.18	0.18	100%	2022 IL TRM v10.0 Vol. 3, 5.6.1
Rope Caulk MF	Feet	0.18	0.18	100%	2022 IL TRM v10.0 Vol. 3, 5.6.1

\* Program Tracking Data (PTD) provided by Nicor Gas, extract dated March 16, 2023.

† State of Illinois Technical Reference Manual version 10.0 from <http://www.ilsag.info/technical-reference-manual.html>.

## 5.2 Findings and Recommendations

All 2022 kit level and measure level components were consistent with TRM (v10.0) inputs and formulas. There were no program participants which received more kits than one hot water kit and two weatherization kits. Guidehouse found the tracking data was complete, and all ex ante savings were consistent with the appropriate calculations in the IL-TRM v10.0.

## **Appendix A. Impact Analysis Methodology**

The evaluation team determined verified gross savings for each program measure by conducting tracking system and savings calculation reviews. Measure inputs were checked against IL TRM (v10.0) inputs. The evaluation team also verified that each program measure meets the TRM defined physical, operational, and baseline characteristics. Verified gross realization rates are calculated by dividing the verified gross savings by the ex ante gross savings.

## Appendix B. Impact Analysis Supplemental Information

Table B-1 lists the 2022 per kit deemed savings and NTG values.

**Table B-1. Verified Gross Savings Parameters**

Measure	Ex Ante Gross Savings (Therms/kit)	Verified Gross Savings (Therms/kit)	Average NTG Per Kit
<b>Water-Saving Kits</b>			
Kit 1	17.92	17.94	1.10
Kit 1 MF	20.78	20.81	1.10
Kit 2	25.99	26.02	1.10
Kit 2 MF	31.43	31.46	1.10
Kit 3	17.26	17.29	1.10
Kit 3 MF	19.62	19.65	1.10
<b>Weatherization Kits</b>			
Kit 4	22.12	22.11	0.91
Kit 4 MF	22.11	22.11	0.91

Source: Nicor Gas tracking data and Guidehouse team analysis.

## Appendix C. Program Specific Inputs for the Illinois TRC

Table C-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 C-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)
<b>Water Savings Kits</b>							
	Bath Aerator	Each	11,437	10	8,324	8,324	9,157
	Kitchen Aerator	Each	6,034	10	34,117	34,117	37,529
	Showerhead	Each	10,421	10	81,067	81,067	89,173
	Shower Timer	Each	6,034	2	23,954	23,954	26,350
<b>Weatherization Kits</b>							
	Outlet Cover	Each	168,408	20	37,993	37,993	34,573
	Foam Tape	Feet	238,578	20	71,947	71,947	65,472
	V-Seal	Feet	238,578	20	66,145	66,145	60,192
	Door Sweep	Each	14,034	20	57,264	57,264	52,110
	Rope Caulk	Feet	421,020	20	76,915	76,915	69,993
<b>Total</b>			<b>1,114,544</b>		<b>457,727</b>	<b>457,727</b>	<b>444,550</b>

\*Note ex ante gross therms calculated at the measure level do not sum exactly as the ex ante kit level gross therms reporting in the tracking data and in Table 3-1. (131 therms lower) due to rounding differences.

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