



# Elementary Energy Education Kits Impact Evaluation Report

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

Prepared for:

Nicor Gas Company

FINAL

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## 1. Introduction

This report presents the results of the impact evaluation of the Elementary Energy Education (EEE) Kits program and a summary of the energy impacts for the total program as well as for relevant measure and program structure details. The appendices present the impact analysis methodology and Illinois total resource cost (TRC) inputs. Program year 2023 covers January 1, 2023 through December 31, 2023.

## 2. Program Description

The EEE Kits program is offered jointly to schools served by Nicor Gas and ComEd. Nicor Gas claimed all gas savings and ComEd claimed all the electricity savings from the EEE Income Eligible (IE) and EEE Market Rate (MR)<sup>1</sup> kits sent to the joint utility customers. Nicor Gas also offered this program to schools served by Nicor Gas and an electricity provider other than ComEd (Nicor Gas Only MR Kits). The program had 30,798 participants in 2023 and completed 245,236 projects as shown in the Table 2-1.

**Table 2-1. 2023 EEE Kits Volumetric Findings Detail**

Participation	Nicor Gas- ComEd Joint IE Kits	Nicor Gas- ComEd Joint MR Kits	Nicor Gas Only Kits	Total
Participants *	4,943	25,281	574	30,798
Installed Projects †	39,544	202,248	3,444	245,236

\* Participants are defined as the total number of kits distributed.

† Installed Projects are defined as the total quantity of measures distributed.

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

<sup>1</sup> In this report, unless stated otherwise, IE refers to Income Eligible and MR refers to Market Rate.

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

**Table 2-2. 2023 EEE Kits Installed Measure Quantities**

Program Category	Program Path	Measure	Quantity Unit	Installed Quantity
EEE Kits	Nicor Gas-ComEd Joint IE Kits	Closed Foam Weatherstripping (17' Roll) IE	Ln Ft	4,943
		Self-Adhesive Door Sweep IE	Each	4,943
		Shower Timer	Each	4,943
		Low Flow Showerheads	Each	4,943
		Low Flow Aerators (Bathroom)	Each	9,886
		Low Flow Aerators (Kitchen)	Each	4,943
		Temperature Setback Card	Each	4,943
EEE Kits	Nicor Gas-ComEd Joint MR Kits	Closed Foam Weatherstripping (17' Roll) MR	Ln Ft	25,281
		Self-Adhesive Door Sweep MR	Each	25,281
		Shower Timer	Each	25,281
		Low Flow Showerheads	Each	25,281
		Low Flow Aerators (Bathroom)	Each	50,562
		Low Flow Aerators (Kitchen)	Each	25,281
		Temperature Setback Card	Each	25,281
EEE Kits	Nicor Gas Only MR Kits	Shower Timer	Each	574
		Low Flow Showerheads	Each	574
		Low Flow Aerators (Bathroom)	Each	1,148
		Low Flow Aerators (Kitchen)	Each	574
		Temperature Setback Card	Each	574

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

### 3. Program Savings Detail

Table 3-1 summarizes the energy savings the EEE Kits Program achieved for each kit type in 2023.

**Table 3-1. 2023 EEE Kits Annual Energy Savings Summary**

Program Category	Program Path	Ex Ante Gross Savings (Therms)	Verified Gross RR*	Verified Gross Savings (Therms)	NTG†	NPSO‡	Verified Net Savings (Therms)
EEE Kits	Nicor Gas-ComEd Joint IE Kits	68,554	100%	68,554	1.00	N/A	68,554
	Nicor Gas-ComEd Joint MR Kits	367,788	100%	367,788	1.00	1.048	385,442
	Nicor Gas Only Kits	3,932	100%	3,932	1.00	1.048	4,121
<b>Total or Weighted Average</b>		<b>440,275</b>	<b>100%</b>	<b>440,275</b>	<b>1.00</b>		<b>458,118</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-2023/>.

‡ The market rate net savings were multiplied by a residential non-participant spillover (NPSO) factor of 1.048. The program did not have any disadvantaged community (DAC) designated sites.

Source: Guidehouse evaluation team analysis.

### 4. Program Savings by Measure

The EEE Kits Joint program (IE and MR) includes seven measures and the EEE Kits Gas Only program includes five measures as shown in Table 4-1. The closed foam weatherstripping and door sweep measures contributed the most savings for Joint kit types. The shower timer and low flow showerhead measures contributed the most savings for Gas Only kit types.

**Table 4-1. 2023 EEE Kits Annual Energy Savings by Measure**

Program Category	Program Path	Savings Category	Ex Ante Gross Savings (Therms)	Verified Gross RR*	Verified Gross Savings (Therms)	NTG†	NPSO‡	Verified Net Savings (Therms)
EEE Kits	Nicor Gas-ComEd Joint IE Kits	Closed Foam Weatherstripping (17' Roll) IE	18,432	100%	18,432	1.00	N/A	18,432
		Self-Adhesive Door Sweep IE	16,258	100%	16,258	1.00	N/A	16,258
		Shower Timer	15,610	100%	15,610	1.00	N/A	15,610
		Low Flow Showerheads	12,036	100%	12,036	1.00	N/A	12,036
		Low Flow Aerators (Bathroom)	2,373	100%	2,373	1.00	N/A	2,373

Program Category	Program Path	Savings Category	Ex Ante Gross Savings (Therms)	Verified Gross RR*	Verified Gross Savings (Therms)	NTG†	NPSO ‡	Verified Net Savings (Therms)
		Low Flow Aerators (Kitchen)	1,967	100%	1,967	1.00	N/A	1,967
		Temperature Setback Card	1,878	100%	1,878	1.00	N/A	1,878
		<b>Nicor Gas-ComEd Joint IE Kits Subtotal</b>	<b>68,554</b>	<b>100%</b>	<b>68,554</b>	<b>1.00</b>	<b>N/A</b>	<b>68,554</b>
EEE Kits	Nicor Gas-ComEd Joint MR Kits	Closed Foam Weatherstripping (17' Roll) MR	103,399	100%	103,399	1.00	1.048	108,362
		Self-Adhesive Door Sweep MR	91,189	100%	91,189	1.00	1.048	95,566
		Shower Timer	79,837	100%	79,837	1.00	1.048	83,670
		Low Flow Showerheads	61,559	100%	61,559	1.00	1.048	64,514
		Low Flow Aerators (Bathroom)	12,135	100%	12,135	1.00	1.048	12,717
		Low Flow Aerators (Kitchen)	10,062	100%	10,062	1.00	1.048	10,545
		Temperature Setback Card	9,607	100%	9,607	1.00	1.048	10,068
		<b>Nicor Gas-ComEd Joint MR Kits Subtotal</b>	<b>367,788</b>	<b>100%</b>	<b>367,788</b>	<b>1.00</b>	<b>1.048</b>	<b>385,442</b>
EEE Kits	Nicor Gas Only Kits	Shower Timer	1,813	100%	1,813	1.00	1.048	1,900
		Low Flow Showerheads	1,398	100%	1,398	1.00	1.048	1,465
		Low Flow Aerators (Bathroom)	276	100%	276	1.00	1.048	289
		Low Flow Aerators (Kitchen)	228	100%	228	1.00	1.048	239
		Temperature Setback Card	218	100%	218	1.00	1.048	229
		<b>Nicor Gas Only Kits Subtotal</b>	<b>3,932</b>	<b>100%</b>	<b>3,932</b>	<b>1.00</b>	<b>1.048</b>	<b>4,121</b>
<b>Total or Weighted Average</b>			<b>440,275</b>	<b>100%</b>	<b>440,275</b>			<b>458,118</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-2023/>.

‡ The market rate net savings were multiplied by a residential non-participant spillover (NPSO) factor of 1.048. The program did not have any disadvantaged community (DAC) designated sites.

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

## 5. Impact Analysis Findings and Recommendations

The EEE Kits program achieved a 100% realization rate (RR) for 2023. The ex ante savings matched the verified savings for each measure and all the kit types.

### 5.1 Impact Parameter Estimates

Table 5-1 shows the unit therm savings and realization rate findings by measure from the evaluation team's review. The realization rate is the ratio of the verified savings to the ex ante savings. Following Table 5-1 are 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 5-1. EEE Kits Verified Gross Savings Parameters**

Measure	Unit Basis	Ex Ante Gross (therms/unit)	Verified Gross (therms/unit)	Realization Rate	Data Source(s)
Closed Foam Weatherstripping (17' Roll) IE	Ln Ft	3.73	3.73	100%	Illinois TRM, v11.0†, Section 5.6.1 and PTD*
Self-Adhesive Door Sweep IE	Each	3.29	3.29	100%	Illinois TRM, v11.0, Section 5.6.1 and PTD
Closed Foam Weatherstripping (17' Roll) MR	Ln Ft	4.09	4.09	100%	Illinois TRM, v11.0, Section 5.6.1 and PTD
Self-Adhesive Door Sweep MR	Each	3.61	3.61	100%	Illinois TRM, v11.0, Section 5.6.1 and PTD
Shower Timer	Each	3.16	3.16	100%	Illinois TRM, v11.0, Section 5.4.9 and PTD
Low Flow Showerheads	Each	2.44	2.44	100%	Illinois TRM, v11.0, Section 5.4.5 and PTD
Low Flow Aerators (Bathroom)	Each	0.24	0.24	100%	Illinois TRM, v11.0, Section 5.4.4. and PTD
Low Flow Aerators (Kitchen)	Each	0.40	0.40	100%	Illinois TRM, v11.0, Section 5.4.4 and PTD
Temperature Setback Card	Each	0.38	0.38	100%	Illinois TRM, v11.0, Section 5.4.6 and PTD

\* 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>.

## 5.2 Findings and Recommendations

The overall RR for therms savings was 100%. The evaluation team verified all measure savings and did not find any discrepancies with the savings for the EEE Kits program. There are no findings and recommendations based on the evaluation of the 2023 program activity.

## Appendix A. Impact Analysis Methodology

The evaluation team verified unit savings for each program measure using the impact algorithm sources found in the Illinois Statewide Technical Reference Manual v11.0 (IL-TRM)<sup>2</sup>. The evaluation team:

- Validated the savings algorithm was applied correctly.
- Cross-checked per-unit savings values in the program tracking data with the IL-TRM v11.0.
- Multiplying the verified per-unit savings value by the quantity reported in the tracking data. The team calculated verified net savings by multiplying the verified gross savings estimates by a NTG ratio. In 2023, NTG estimates used to calculate the net verified savings were based on past evaluation research and defined by a consensus process through the Illinois SAG.
- For Disadvantaged Areas (DAC) postal codes, a NTG ratio of 1.0 is used for all Nicor Gas programs. No DAC was designated for the EEE program in 2023.

Table A-1 presents the key parameters and the references used in the verified gross and net savings calculations.

**Table A-1. EEE Kits Impact Parameters**

Gross Savings Input Parameters	Deemed Input Parameters	Source*
Net-to-Gross (NTG)	1.00	IL SAG
Non-Participant Spillover (NPSO) Factor	1.048 (non-IE residential)	IL SAG
Closed Foam Weatherstripping (17' Roll)	ADJRxAirsealing, ISR, %FossilHeat, $\Delta$ therms_wx	IL-TRM, v11.0, Section 5.6.1
Self-Adhesive Door Sweep	ADJRxAirsealing, ISR, %FossilHeat, $\Delta$ therms_sweep	IL-TRM, v11.0, Section 5.6.1
Shower Timer	L_base, Showers per capita per day (SPCD), GPH, EPG_gas, %FossilDHW, GPM, L_timer, Household, Usage Factor, %SF, %MF	IL-TRM, v11.0, Section 5.4.9
Low Flow Showerheads	GPM_base, GPM_low, L_base, L_low, Showerheads per household (SPH), showers per capita per day (SPCD), EPG_gas, %FossilDHW, Household, ISR, %SF, %MF	IL-TRM, v11.0, Section 5.4.5
Low Flow Aerators (Bathroom)	GPM_base, GPM_low, L_base, L_low, faucets per household (FPH), drain factor (DF), EPG_gas, %FossilDHW, Household, ISR, %SF, %MF	IL-TRM, v11.0, Section 5.4.4

<sup>2</sup> Unless stated otherwise, IL-TRM refers to version 11.0 (v11.0).

Gross Savings Input Parameters	Deemed Input Parameters	Source*
Low Flow Aerators (Kitchen)	GPM_base, GPM_low, L_base, L_low, faucets per household (FPH), drain factor (DF), EPG_gas, %FossilDHW, Household, ISR, %SF, %MF	IL-TRM, v11.0, Section 5.4.4
Temperature Setback Card	U (Overall heat transfer coefficient of tank), A (Surface area of storage tank), Tpre, Tpost, Hours, RE_gas, %FossilDHW, ISR	IL-TRM, v11.0, Section 5.4.6

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

GPH – Gallons per hour

DHW – Domestic hot water

GPM – Gallons per minute

SF – Single family

MF – Multi family

ISR – In-service rate

Source: Guidehouse evaluation team analysis

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

Table B-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 B-1. EEE Kits 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)
Nicor Gas-ComEd Joint IE Kits	Closed Foam Weatherstripping (17' Roll) IE	Ln Ft	4,943	20	18,432	18,432	18,432
	Self-Adhesive Door Sweep IE	Each	4,943	20	16,258	16,258	16,258
	Shower Timer	Each	4,943	2	15,610	15,610	15,610
	Low Flow Showerheads	Each	4,943	10	12,036	12,036	12,036
	Low Flow Aerators (Bathroom)	Each	9,886	10	2,373	2,373	2,373
	Low Flow Aerators (Kitchen)	Each	4,943	10	1,967	1,967	1,967
	Temperature Setback Card	Each	4,943	2	1,878	1,878	1,878
Nicor Gas-ComEd Joint MR Kits	Closed Foam Weatherstripping (17' Roll) MR	Ln Ft	25,281	20	103,399	103,399	108,362
	Self-Adhesive Door Sweep MR	Each	25,281	20	91,189	91,189	95,566
	Shower Timer	Each	25,281	2	79,837	79,837	83,670
	Low Flow Showerheads	Each	25,281	10	61,559	61,559	64,514
	Low Flow Aerators (Bathroom)	Each	50,562	10	12,135	12,135	12,717
	Low Flow Aerators (Kitchen)	Each	25,281	10	10,062	10,062	10,545
Nicor Gas Only Kits	Temperature Setback Card	Each	25,281	2	9,607	9,607	10,068
	Shower Timer	Each	574	2	1,813	1,813	1,900
	Low Flow Showerheads	Each	574	10	1,398	1,398	1,465

Program Path	Savings Category	Units	Quantity	Effective Useful Life	Ex Ante Gross Savings (Therms)	Verified Gross Savings (Therms)	Verified Net Savings (Therms)
	Low Flow Aerators (Bathroom)	Each	1,148	10	276	276	289
	Low Flow Aerators (Kitchen)	Each	574	10	228	228	239
	Temperature Setback Card	Each	574	2	218	218	229
<b>Total or Weighted Average</b>				<b>13.2</b>	<b>440,275</b>	<b>440,275</b>	<b>458,118</b>

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