

Elementary Energy Education Kits 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 Elementary Energy Education (EEE) Kits program and 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 2024 covers January 1, 2024 through December 31, 2024.

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 Market Rate (MR)¹ 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 Kits), as well as jointly with Ameren Illinois under the Student Elementary Education Kits (SEEK Kits).

The program had 13,761 participants in 2024 and distributed 137,987 kits as shown in Table 1.

Table 1. 2024 Volumetric Findings Detail

Participation	SEEK Kit	Nicor Gas-ComEd Joint IE Kit	Nicor Gas-ComEd Joint MR Kits	Nicor Gas Only Kits	Total
Participants *	1,500	2,538	9,292	431	13,761
Distributed Measures †	28,500	22,842	83,628	3,017	137,987

* Participants are the quantity of kits distributed

† Distributed Measures is the total quantity of measures distributed in the kits

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

Program Category	Program Path	Measure	Quantity Unit	Installed Quantity
Elementary Education Kits	SEEK Kit	Outlet Gaskets	Each	15,000
		1/2" Pipe Insulation	Each	4,500
		Bath Aerator, 1.0 gpm	Each	1,500
		Kitchen Aerator, 1.5 gpm	Each	1,500
		Shower Timer	Each	1,500
		Showerhead, 1.5 gpm	Each	1,500
		Door Sweep	Each	1,500
		Weatherstripping (17" Roll)	Linear Feet	1,500

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

Program Category	Program Path	Measure	Quantity Unit	Installed Quantity
Nicor Gas-ComEd Joint IE Kit		Low Flow Aerators (Bathroom)	Each	5,076
		Low Flow Aerators (Kitchen)	Each	2,538
		Low Flow Showerheads	Each	2,538
		Shower Timer	Each	2,538
		Window Insulation Kit (5-pack)	Each	2,538
		Temperature Setback Card	Each	2,538
		Closed Foam Weatherstripping (17' Roll)	Linear Feet	2,538
		Self-Adhesive Door Sweep	Each	2,538
Nicor Gas-ComEd Joint MR Kit		Low Flow Aerators (Bathroom)	Each	18,584
		Low Flow Aerators (Kitchen)	Each	9,292
		Low Flow Showerheads	Each	9,292
		Shower Timer	Each	9,292
		Temperature Setback Card	Each	9,292
		Closed Foam Weatherstripping (17' Roll)	Linear Feet	9,292
		Self-Adhesive Door Sweep	Each	9,292
Nicor Gas Only Kit		Low Flow Aerators (Bathroom)	Each	862
		Low Flow Aerators (Kitchen)	Each	431
		Low Flow Showerheads	Each	431
		Shower Timer	Each	431
		Temperature Setback Card	Each	431
		Window Insulation Kit (5 pack)	Each	431

Source: Nicor Gas tracking data and evaluation team analysis.

Program Savings Detail

Table 3 summarizes the energy savings the EEE Kits Program achieved for each kit type in 2024.

Table 3. 2024 Annual Energy Savings Summary

Program Category	Program Path	Ex Ante Gross Savings (Therms)	Verified Gross RR*	Verified Gross Savings (Therms)	NTG†	NSPO‡	Verified Net Savings (Therms)
Elementary Education Kits	Nicor ComEd Joint MR Kits	229,782	100%	230,647	1.00	1.048	241,718
	Nicor ComEd Joint IE Kits	59,585	100%	59,813	1.00	N/A	59,813
	SEEK Kit	49,813	100%	49,813	1.00	N/A	49,813
	Nicor Gas Only Kits	7,146	104%	7,436	1.00	1.048	7,759
Total or Weighted Average		346,326	100%	347,712	1.00		359,140

* 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. This program did not have DAC designated sites.

‡ The non-income eligible market rate net savings were multiplied by a deemed non-participant spillover (NPSO) factor of 1.048.

Source: Evaluation team analysis.

Program Savings by Measure

The EEE Kits Joint program (IE and MR) and SEEK Kits include eight measures and the EEE Kits Gas Only program includes five measures as shown in Table 4. The window insulation kit (5-pack) and low flow showerheads measures contributed the most savings for joint kit types. The low flow showerhead and shower timer measures contributed the most savings for gas only kit type.

Table 4. 2024 Annual Energy Savings by Measure

Program Category	Program Path	Savings Category	Ex Ante Gross Savings (Therms)	Verified Gross RR*	Verified Gross Savings (Therms)	NTG†	NSPO‡	Verified Net Savings (Therms)
Elementary Education Kits	SEEK Kit	Showerhead, 1.5 gpm	16,187	100%	16,187	1.00	1.00	16,187
		Kitchen Aerator, 1.5 gpm	11,434	100%	11,434	1.00	1.00	11,434
		Shower Timer	7,104	100%	7,104	1.00	1.00	7,104
		Weatherstripping	4,699	100%	4,699	1.00	1.00	4,699
		Door Sweep	4,131	100%	4,131	1.00	1.00	4,131
		1/2" Pipe Insulation	2,664	100%	2,664	1.00	1.00	2,664
		Outlet Gaskets	2,138	100%	2,138	1.00	1.00	2,138
		Bath Aerator, 1.0 gpm	1,448	100%	1,448	1.00	1.00	1,448

Program Category	Program Path	Savings Category	Ex Ante Gross Savings (Therms)	Verified Gross RR*	Verified Gross Savings (Therms)	NTG†	NSPO‡	Verified Net Savings (Therms)
		SEEK Kit subtotal	49,813	100%	49,813	1.00	N/A	49,813
		Window Insulation Kit (5-pack)	15,406	100%	15,402	1.00	N/A	15,402
		Low Flow Showerheads	14,190	100%	14,190	1.00	N/A	14,190
		Closed Foam Weatherstripping (17' Roll)	9,302	100%	9,301	1.00	N/A	9,301
		Self-Adhesive Door Sweep	8,203	100%	8,202	1.00	N/A	8,202
	Nicor Gas-ComEd Joint IE Kit	Shower Timer	8,015	100%	8,014	1.00	N/A	8,014
		Low Flow Aerators (Bathroom)	2,279	100%	2,281	1.00	N/A	2,281
		Low Flow Aerators (Kitchen)	1,888	100%	1,888	1.00	N/A	1,888
		Temperature Setback Card	302	177%	535	1.00	N/A	535
		Nicor ComEd Joint IE Kit Subtotal	59,585	100%	59,813	1.00	N/A	59,813
		Window Insulation Kit (5-pack)	61,838	100%	61,848	1.00	1.048	64,817
		Low Flow Showerheads	51,952	100%	51,952	1.00	1.048	54,446
		Closed Foam Weatherstripping (17' Roll)	37,345	100%	37,345	1.00	1.048	39,138
		Self-Adhesive Door Sweep	32,940	100%	32,940	1.00	1.048	34,521
	Nicor Gas-ComEd Joint MR Kits	Shower Timer	29,344	100%	29,344	1.00	1.048	30,753
		Low Flow Aerators (Bathroom)	8,344	100%	8,344	1.00	1.048	8,745
		Low Flow Aerators (Kitchen)	6,913	100%	6,913	1.00	1.048	7,245
		Temperature Setback Card	1,106	177%	1,961	1.00	1.048	2,055
		Nicor Gas-ComEd Joint MR Kits Subtotal	229,782	100%	230,647	1.00	1.048	241,718
	Nicor Gas Only Kits	Window Insulation Kits (5-pack)	2,756	104%	2,869	1.00	1.048	3,006
		Low Flow Showerheads	2,315	104%	2,410	1.00	1.048	2,525

Program Category	Program Path	Savings Category	Ex Ante Gross Savings (Therms)	Verified Gross RR*	Verified Gross Savings (Therms)	NTG†	NSPO‡	Verified Net Savings (Therms)
		Shower Timer	1,308	104%	1,361	1.00	1.048	1,426
		Low Flow Aerators (Bathroom)	372	104%	387	1.00	1.048	406
		Low Flow Aerators (Kitchen)	308	104%	321	1.00	1.048	336
		Temperature Setback Card	87	104%	91	1.00	1.048	95
		Nicor Gas Only Kits Subtotal	7,146	104%	7,438	1.00	1.048	7,795
Total or Weighted Average			346,326	100%	347,712	1.00		359,140

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 a 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)
Window Insulation Kit (5-pack)	Each	6.655	6.656	100%	Illinois TRM, v12.0†, Section 5.6.1 and PTD*
Low Flow Showerheads	Each	5.591	5.591	100%	Illinois TRM, v12.0, Section 5.4.5 and PTD*
Closed Foam Weatherstripping (17' Roll)	Each	4.019	4.019	100%	Illinois TRM, v12.0†, Section 5.6.1 and PTD*
Self-Adhesive Door Sweep	Each	3.545	3.545	100%	Illinois TRM, v12.0†, Section 5.6.1 and PTD*
Shower Timer	Each	3.158	3.158	100%	Illinois TRM, v12.0, Section 5.4.9 and PTD*
Low Flow Aerators (Kitchen)	Each	0.744	0.744	100%	Illinois TRM, v12.0, Section 5.4.4 and PTD*
Low Flow Aerators (Bathroom)	Each	0.449	0.449	100%	Illinois TRM, v12.0, Section 5.4.4 and PTD*

Measure	Unit Basis	Ex Ante Gross (therms/unit)	Verified Gross (therms/unit)	Realization Rate	Data Source(s)
Temperature Setback Card	Each	0.119	0.211	177%	Illinois TRM, v12.0, Section 5.4.6 and PTD*
Showerhead, 1.5 gpm	Each	10.79	10.79	100%	Illinois TRM, v12.0†, Section 5.4.5 and PTD*
Kitchen Aerator, 1.5 gpm	Each	7.62	7.62	100%	Illinois TRM, v12.0†, Section 5.4.4 and PTD*
Shower Timer	Each	4.74	4.74	100%	Illinois TRM, v12.0†, Section 5.4.9 and PTD*
Door Sweep	Each	2.75	2.75	100%	Illinois TRM, v12.0†, Section 5.6.1 and PTD*
Bath Aerator, 1.0 gpm	Each	0.97	0.97	100%	Illinois TRM, v12.0†, Section 5.4.4 and PTD*
1/2" Pipe Insulation	Each	0.59	0.59	100%	Illinois TRM, v12.0†, Section 5.4.1 and PTD*
Weatherstripping	Each	0.18	0.18	100%	Illinois TRM, v12.0†, Section 5.6.1 and PTD*
Outlet Gaskets	Each	0.14	0.14	100%	Illinois TRM, v12.0†, Section 5.6.1 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>.

‡ Project files and monthly billing data provided by Nicor Gas. Where conducted, on-site or telephone interview data collected by Guidehouse.

Findings and Recommendations

Finding 1. The tracking data ex-ante calculations for the Nicor Gas Only kits were inconsistent with the IC calculators for the measures in the kit. The evaluation team used the IL-TRM v12.0 algorithms and assumptions for a kit containing the measures listed below. The verified savings matched the IC calculators for all measures, except the temperature setback card, which is discussed in Finding 2. This finding resulted in a 104% gross realization rate for the Nicor Gas Only kits, which were 2.1% of the programs verified savings.

- (2) Bathroom Aerator (1 GPM)
- (1) Kitchen Aerator (1.5 GPM)
- (1) Low-Flow Showerhead (1.5 GPM)
- (1) Shower Timer
- (1) Temperature Setback Card
- (1) Window Insulation Kits (5-pack)

Recommendation 1. Ensure that ex-ante savings within the tracking data are consistent with the savings from the IC calculators.

Finding 2. For the Temperature Setback Card measure, the IC Calculator used the deemed fossil fuel savings provided in IL-TRM v12.0 corresponding to an 'Other' system type (which

refers to fuel types other than Electric or Gas, e.g., fuel oil). The evaluation team used the algorithm provided in Section 5.4.6 of the IL TRM v12.0 utilizing the pre and post hot water setpoint temperatures corresponding to a 'Gas' system type when calculating Therms savings. This adjustment led to a measure level RR of 177% for the temperature setback card in Nicor Gas-ComEd Joint IE and MR kits.

Recommendation 2. Use the pre and post hot water temperature setpoints corresponding to a 'Gas' system type.

Appendix A. Impact Analysis Methodology

The evaluation team verified unit savings for each program measure using the impact algorithm sources found in the IL TRM v12.0. Table A-1 presents the key parameters and the references used in the verified gross and net savings calculations.

Table A-1. Impact Parameters

Gross Savings Input Parameters	Deemed Input Parameters	Source*
Closed Foam Weatherstripping (17' Roll)	<i>ADJRxAirsealing, ISR, %FossilHeat, Δtherms_wx</i>	IL-TRM, v12.0, Section 5.6.1
Self-Adhesive Door Sweep	<i>ADJRxAirsealing, ISR, %FossilHeat, Δtherms_sweep</i>	IL-TRM, v12.0, Section 5.6.1
Shower Timer	<i>L_base, Showers per capita per day (SPCD), GPH, EPG_gas, %FossilDHW, GPM, L_timer, Household, Usage Factor, %SF, %MF</i>	IL-TRM, v12.0, Section 5.4.9
Low Flow Showerheads	<i>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</i>	IL-TRM, v12.0, Section 5.4.5
Low Flow Aerators (Bathroom)	<i>GPM_base, GPM_low, L_base, L_low, faucets per household (FPH), drain factor (DF), EPG_gas, %FossilDHW, Household, ISR, %SF, %MF</i>	IL-TRM, v12.0, Section 5.4.4
Low Flow Aerators (Kitchen)	<i>GPM_base, GPM_low, L_base, L_low, faucets per household (FPH), drain factor (DF), EPG_gas, %FossilDHW, Household, ISR, %SF, %MF</i>	IL-TRM, v12.0, Section 5.4.4
Temperature Setback Card	<i>U (Overall heat transfer coefficient of tank), A (Surface area of storage tank), Tpre, Tpost, Hours, RE_gas, %FossilDHW, ISR</i>	IL-TRM, v12.0, Section 5.4.6
½" Pipe Insulation	<i>ΔTherm,%FossilDHW, ISR</i>	Illinois TRM, v12.0, Section 5.4.1
Outlet gaskets	<i>ADJ_RxAirsealing, ISR, Δthermsgasket, %FossilHeat, %SF, %MF</i>	Illinois TRM, v12.0, Section 5.6.1
Window Insulation Kit (5-Pack)	<i>ADJRxAirsealing, ISR, %FossilHeat, Δtherms_windows, %SF, %MF</i>	Illinois TRM, v12.0, Section 5.6.1

Source: 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. Verified Cost Effectiveness Inputs

Program Path	Savings Category	DAC Project*	Units	Quantity	Effective Useful Life	Early Replacement Flag	Ex Ante Gross Savings (Therms)	Verified Gross Savings (Therms)	Verified Net Savings (Therms)
SEEK Kit	Showerhead, 1.5 gpm	FALSE	Each	15,000	10.00	NO	16,187	16,187	16,187
	Kitchen Aerator, 1.5 gpm	FALSE	Each	4,500	10.00	NO	11,434	11,434	11,434
	Shower Timer	FALSE	Each	1,500	2.00	NO	7,104	7,104	7,104
	Weatherstripping	FALSE	Linear Feet	1,500	20.00	NO	4,699	4,699	4,699
	Door Sweep	FALSE	Each	1,500	20.00	NO	4,131	4,131	4,131
	1/2" Pipe Insulation	FALSE	Each	1,500	15.00	NO	2,664	2,664	2,664
	Outlet Gaskets	FALSE	Each	1,500	20.00	NO	2,138	2,138	2,138
	Bathroom Aerator, 1.0 gpm	FALSE	Each	1,500	10.00	NO	1,448	1,448	1,448
Nicor Gas-ComEd Joint IE Kits	Window Insulation Kit (5-pack)	FALSE	Each	5,076	1.00	NO	15,406	15,402	15,402
	Low Flow Showerheads	FALSE	Each	2,538	10.00	NO	14,190	14,190	14,190
	Closed Foam Weatherstripping (17' Roll)	FALSE	Linear Feet	2,538	20.00	NO	9,302	9,301	9,301
	Self-Adhesive Door Sweep	FALSE	Each	2,538	20.00	NO	8,203	8,202	8,202
	Shower Timer	FALSE	Each	2,538	2.00	NO	8,015	8,014	8,014
	Low Flow Aerators (Bathroom)	FALSE	Each	2,538	10.00	NO	2,279	2,281	2,281
	Low Flow Aerators (Kitchen)	FALSE	Each	2,538	10.00	NO	1,888	1,888	1,888
Temperature Setback Card	FALSE	Each	2,538	2.00	NO	302	535	535	
Nicor Gas-ComEd Joint MR Kits	Window Insulation Kit (5-pack)	FALSE	Each	9,292	1.0	NO	61,838	61,848	64,817
	Low Flow Showerheads	FALSE	Each	9,292	10.0	NO	51,952	51,952	54,446
	Closed Foam Weatherstripping (17' Roll)	FALSE	Linear Feet	9,292	20.0	NO	37,345	37,345	39,138
	Self-Adhesive Door Sweep	FALSE	Each	9,292	20.0	NO	32,940	32,940	34,521
	Shower Timer	FALSE	Each	9,292	2.0	NO	29,344	29,344	30,753

Program Path	Savings Category	DAC Project*	Units	Quantity	Effective Useful Life	Early Replacement Flag	Ex Ante Gross Savings (Therms)	Verified Gross Savings (Therms)	Verified Net Savings (Therms)
Nicor Gas Only Kits	Low Flow Aerators (Bathroom)	FALSE	Each	18,584	10.0	NO	8,344	8,344	8,745
	Low Flow Aerators (Kitchen)	FALSE	Each	9,292	10.0	NO	6,913	6,913	7,245
	Temperature Setback Card	FALSE	Each	9,292	2.0	NO	1,106	1,961	2,055
	Window Insulation Kit (5-pack)	FALSE	Each	431	1.0	NO	2,756	2,869	3,006
	Low Flow Showerheads	FALSE	Each	431	10.0	NO	3,769	2,410	2,526
	Shower Timer	FALSE	Each	431	2.0	NO	2,129	1,361	1,426
	Low Flow Aerators (Bathroom)	FALSE	Each	862	10.0	NO	605	387	406
	Low Flow Aerators (Kitchen)	FALSE	Each	431	10.0	NO	502	321	336
	Temperature Setback Card	FALSE	Each	431	2.0	NO	142	91	95
	Total or Weighted Average					9.7		346,326	347,712

* This program did not have DAC designated sites.
 Source: Evaluation team analysis.