



Community Joint Kits Program Impact Evaluation Report

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

Prepared for:

Peoples Gas and North Shore Gas

FINAL

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1. Introduction

This report presents the results of the impact evaluation of the Peoples Gas (PGL) and North Shore Gas (NSG) 2023 Community Joint Kits program. It 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 (PY) 2023 covers January 1, 2023 through December 31, 2023.

2. Program Description

The Community Joint Kits program involves mail distribution of a free self-installation energy saving kit. The contents of the kit include a showerhead, faucet aerators, weatherstripping, switch and outlet gaskets, window film kits, door sweeps, rope caulk, and shower timer. The program distributes kits to customers verified as Low-Income Home Energy Assistance Program (LIHEAP) grant recipients and, therefore, validated as income eligible. The program is implemented jointly with ComEd.

The PGL program distributed 21,479 kits in 2023 and included eleven different types of measures, as shown in the following table.

Table 2-1. 2023 Volumetric Summary for PGL

Participation	Income Eligible
Number of Kits Distributed (eleven measures per kit)	21,479

Distributed measures refer to the total quantity of measures distributed within the kits.

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

Table 2-2 summarizes the distributed measure quantities for the eleven measures that are the basis for verified energy savings.

Table 2-2. 2023 Installed Measure Quantities for PGL

Measure	Quantity Unit	Quantity per Kit	Total Quantity Distributed
Rope Caulk (30')	Ln Ft	30	644,370
Low Flow Showerheads	Each	1	21,479
V-Seal Weatherstripping Roll (17')	Ln Ft	17	365,143
Closed Foam Weatherstripping (17' Roll)	Ln Ft	17	365,143
Window Insulation Kit	Sq Ft	56	1,202,824
Shower Timer	Each	1	21,479
Self-Adhesive Door Sweep	Each	1	21,479
Low Flow Aerators (Bathroom)	Each	2	42,958
Low Flow Aerators (Kitchen)	Each	1	21,479
Outlet Gasket	Each	4	85,916
Switch Gasket	Each	4	85,916

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

The NSG program distributed 1,268 kits in 2023 and included eleven different types of measures, as shown in the following table.

Table 2-3. 2023 Volumetric Summary for NSG

Participation	Total
Number of Kits Distributed (eleven measures per kit)	1,268

Distributed measures refer to the total quantity of measures distributed within the kits.

Source: North Shore Gas tracking data and Guidehouse evaluation team analysis.

Table 2-4 summarizes the distributed measure quantities for the eleven measures that are the basis for verified energy savings.

Table 2-4. 2023 Installed Measure Quantities for NSG

Measure	Quantity Unit	Quantity per Kit	Installed Quantity
Low Flow Showerheads	Each	1	1,268
Rope Caulk (30')	Ln Ft	30	38,040
V-Seal Weatherstripping Roll (17')	Ln Ft	17	21,556
Closed Foam Weatherstripping (17' Roll)	Ln Ft	17	21,556
Window Insulation Kit	Sq Ft	56	71,008
Shower Timer	Each	1	1,268
Self-Adhesive Door Sweep	Each	1	1,268
Low Flow Aerators (Bathroom)	Each	2	2,536
Low Flow Aerators (Kitchen)	Each	1	1,268
Outlet Gasket	Each	4	5,072
Switch Gasket	Each	4	5,072

Source: North Shore Gas tracking data and Guidehouse evaluation team analysis.

3. Program Savings Detail

Table 3-1 summarizes the energy savings the PGL Program achieved in 2023.

Table 3-1. 2023 Annual Energy Savings Summary for PGL

Program Category	Ex Ante Gross Savings (Therms)	Verified Gross RR*	Verified Gross Savings (Therms)	NTG†	Verified Net Savings (Therms)
PGL Community Joint Kits	548,595	100%	548,595	1.00	548,595
Total or Weighted Average	548,595	100%	548,595	1.00	548,595

* 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/>. Disadvantaged communities (DAC) designated sites are income eligible households and used NTG of 1.0.

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

Table 3-2 summarizes the energy savings the NSG Program achieved in 2023.

Table 3-2. 2023 Annual Energy Savings Summary for NSG

Program Category	Ex Ante Gross Savings (Therms)	Verified Gross RR*	Verified Gross Savings (Therms)	NTG†	Verified Net Savings (Therms)
NSG Community Joint Kits	36,638	100%	36,638	1.00	36,638
Total or Weighted Average	36,638	100%	36,638	1.00	36,638

* 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/>. Disadvantaged communities (DAC) designated sites are income eligible households and used NTG of 1.0.

Source: North Shore Gas tracking data and Guidehouse evaluation team analysis.

4. Program Savings by Measure

The PGL program includes eleven measures as shown in the following table. The rope caulk (30') and low flow showerheads measures contributed the most savings.

Table 4-1. 2023 Annual Energy Savings by Measure for PGL

Savings Category	Ex Ante Gross Savings (Therms)	Verified Gross RR*	Verified Gross Savings (Therms)	NTG†	Verified Net Savings (Therms)
Rope Caulk (30')	89,009	100%	89,009	1.00	89,009
Low Flow Showerheads	83,553	100%	83,553	1.00	83,553
V-Seal Weatherstripping Roll (17')	79,086	100%	79,086	1.00	79,086
Closed Foam Weatherstripping (17' Roll)	79,086	100%	79,086	1.00	79,086
Window Insulation Kit	71,074	100%	71,074	1.00	71,074
Shower Timer	56,425	100%	56,425	1.00	56,425
Self-Adhesive Door Sweep	45,385	100%	45,385	1.00	45,385
Low Flow Aerators (Bathroom)	14,649	100%	14,649	1.00	14,649
Low Flow Aerators (Kitchen)	12,114	100%	12,114	1.00	12,114
Outlet Gasket	9,107	100%	9,107	1.00	9,107
Switch Gasket	9,107	100%	9,107	1.00	9,107
Total or Weighted Average	548,595	100%	548,595	1.00	548,595

* 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/>.

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

The NSG program includes eleven measures as shown in the following table. The low flow showerheads and rope caulk (30') measures contributed the most savings.

Table 4-2. 2023 Annual Energy Savings by Measure for NSG

Savings Category	Ex Ante Gross Savings (Therms)	Verified Gross RR*	Verified Gross Savings (Therms)	NTG†	Verified Net Savings (Therms)
Low Flow Showerheads	5,929	100%	5,929	1.00	5,929
Rope Caulk (30')	5,781	100%	5,781	1.00	5,781
V-Seal Weatherstripping Roll (17')	5,137	100%	5,137	1.00	5,137
Closed Foam Weatherstripping (17' Roll)	5,137	100%	5,137	1.00	5,137
Window Insulation Kit	4,618	100%	4,618	1.00	4,618
Shower Timer	4,004	100%	4,004	1.00	4,004
Self-Adhesive Door Sweep	2,948	100%	2,948	1.00	2,948
Low Flow Aerators (Bathroom)	1,037	100%	1,037	1.00	1,037
Low Flow Aerators (Kitchen)	860	100%	860	1.00	860
Outlet Gasket	593	100%	593	1.00	593
Switch Gasket	593	100%	593	1.00	593
Total or Weighted Average	36,638	100%	36,638	1.00	36,638

* 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/>.

Source: North Shore Gas tracking data and Guidehouse evaluation team analysis.

5. Impact Analysis Findings and Recommendations

The Community Joint Kits program achieved a 100% realization rate (RR) for PY2023. The ex ante savings matched the verified savings for each measure and the entire kit.

5.1 Impact Parameter Estimates

Table 5-1 shows the therm savings and RR findings by measure from our review. Following the table, we provide findings and recommendations. 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)	RR	Data Source(s)
PGL Community Joint Kits					
Rope Caulk (30')	Ln Ft	4.14	4.14	100%	Illinois TRM† Section 5.6.1, PTD*
Low Flow Showerheads	Each	3.89	3.89	100%	Illinois TRM Section 5.4.5, PTD
V-Seal Weatherstripping Roll (17')	Ln Ft	3.68	3.68	100%	Illinois TRM Section 5.6.1, PTD

Measure	Unit Basis	Ex Ante Gross (therms/unit)	Verified Gross (therms/unit)	RR	Data Source(s)
Closed Foam Weatherstripping (17' Roll)	Ln Ft	3.68	3.68	100%	Illinois TRM Section 5.6.1, PTD
Window Insulation Kit	Sq Ft	3.31	3.31	100%	Illinois TRM Section 5.6.1, PTD
Shower Timer	Each	2.63	2.63	100%	Illinois TRM Section 5.4.9, PTD
Self-Adhesive Door Sweep	Each	2.11	2.11	100%	Illinois TRM Section 5.6.1, PTD
Low Flow Aerators (Bathroom)	Each	0.34	0.34	100%	Illinois TRM Section 5.4.4, PTD
Low Flow Aerators (Kitchen)	Each	0.56	0.56	100%	Illinois TRM Section 5.4.4, PTD
Outlet Gasket	Each	0.11	0.11	100%	Illinois TRM Section 5.6.1, PTD
Switch Gasket	Each	0.11	0.11	100%	Illinois TRM Section 5.6.1, PTD
NSG Community Joint Kits					
Low Flow Showerheads	Each	4.68	4.68	100%	Illinois TRM Section 5.4.5, PTD
Rope Caulk (30')	Ln Ft	4.56	4.56	100%	Illinois TRM Section 5.6.1, PTD
V-Seal Weatherstripping Roll (17')	Ln Ft	4.05	4.05	100%	Illinois TRM Section 5.6.1, PTD
Closed Foam Weatherstripping (17' Roll)	Ln Ft	4.05	4.05	100%	Illinois TRM Section 5.6.1, PTD
Window Insulation Kit	Sq Ft	3.64	3.64	100%	Illinois TRM Section 5.6.1, PTD
Shower Timer	Each	3.16	3.16	100%	Illinois TRM Section 5.4.9, PTD
Self-Adhesive Door Sweep	Each	2.33	2.33	100%	Illinois TRM Section 5.6.1, PTD
Low Flow Aerators (Bathroom)	Each	0.41	0.41	100%	Illinois TRM Section 5.4.4, PTD
Low Flow Aerators (Kitchen)	Each	0.68	0.68	100%	Illinois TRM Section 5.4.4, PTD
Outlet Gasket	Each	0.12	0.12	100%	Illinois TRM Section 5.6.1, PTD
Switch Gasket	Each	0.12	0.12	100%	Illinois TRM Section 5.6.1, PTD

* Program Tracking Data (PTD) provided by Peoples Gas and North Shore Gas; extract dated January 30, 2024.

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

Source: Guidehouse evaluation team analysis

5.2 Findings and Recommendations

The overall RR for therms savings was 100%. Guidehouse verified all measure savings and did not find any discrepancies with the savings for both PGL and NSG programs. 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).¹ 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)	ADJRxAirsealing, ISR, %FossilHeat, Δ therms_wx, %SF, %MF	IL-TRM, v11.0, Section 5.6.1
V-Seal Weatherstripping Roll (17')	ADJRxAirsealing, ISR, %FossilHeat, Δ therms_wx, %SF, %MF	IL-TRM, v11.0, Section 5.6.1
Self-Adhesive Door Sweep	ADJRxAirsealing, ISR, %FossilHeat, Δ therms_sweep, %SF, %MF	IL-TRM, v11.0, Section 5.6.1
Rope Caulk (30')	ADJRxAirsealing, ISR, %FossilHeat, Δ therms_sealing, %SF, %MF	IL-TRM, v11.0, Section 5.6.1
Window Insulation Kit	ADJRxAirsealing, ISR, %FossilHeat, Δ therms_windows, %SF, %MF	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
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
Outlet Gasket	ADJ_RxAirsealing, ISR, Δ thermsgasket, %FossilHeat, %SF, %MF	IL-TRM, v11.0, Section 5.6.1
Switch Gasket	ADJ_RxAirsealing, ISR, Δ thermsgasket, %FossilHeat, %SF, %MF	IL-TRM, v11.0, Section 5.6.1

* State of Illinois Technical Reference Manual version 11.0 from <http://www.ilsaq.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.

¹ In this report, unless stated otherwise, IL-TRM refers to version 11.0 (v11.0).

Appendix B. Program Specific Inputs for the Illinois TRC

Table B-1 and Table B-2 show the Total Resource Cost (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 – PGL

Savings Category	Units	Quantity	Effective Useful Life	Ex Ante Gross Savings (Therms)	Verified Gross Savings (Therms)	Verified Net Savings (Therms)
Rope Caulk (30')	Ln Ft	644,370	20	89,009	89,009	89,009
Low Flow Showerheads	Each	21,479	10	83,553	83,553	83,553
V-Seal Weatherstripping Roll (17')	Ln Ft	365,143	20	79,086	79,086	79,086
Closed Foam Weatherstripping (17' Roll)	Ln Ft	365,143	20	79,086	79,086	79,086
Window Insulation Kit	Sq Ft	1,202,824	1	71,074	71,074	71,074
Shower Timer	Each	21,479	2	56,425	56,425	56,425
Self-Adhesive Door Sweep	Each	21,479	20	45,385	45,385	45,385
Low Flow Aerators (Bathroom)	Each	42,958	10	14,649	14,649	14,649
Low Flow Aerators (Kitchen)	Each	21,479	10	12,114	12,114	12,114
Outlet Gasket	Each	85,916	20	9,107	9,107	9,107
Switch Gasket	Each	85,916	20	9,107	9,107	9,107
Total or Weighted Average		2,878,186	13.7	548,595	548,595	548,595

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

Table B-2. Verified Cost Effectiveness Inputs – NSG

Savings Category	Units	Quantity	Effective Useful Life	Ex Ante Gross Savings (Therms)	Verified Gross Savings (Therms)	Verified Net Savings (Therms)
Low Flow Showerheads	Each	1,268	10	5,929	5,929	5,929
Rope Caulk (30')	Ln Ft	38,040	20	5,781	5,781	5,781
V-Seal Weatherstripping Roll (17')	Ln Ft	21,556	20	5,137	5,137	5,137
Closed Foam Weatherstripping (17' Roll)	Ln Ft	21,556	20	5,137	5,137	5,137
Window Insulation Kit	Sq Ft	71,008	1	4,618	4,618	4,618
Shower Timer	Each	1,268	2	4,004	4,004	4,004
Self-Adhesive Door Sweep	Each	1,268	20	2,948	2,948	2,948
Low Flow Aerators (Bathroom)	Each	2,536	10	1,037	1,037	1,037
Low Flow Aerators (Kitchen)	Each	1,268	10	860	860	860
Outlet Gasket	Each	5,072	20	593	593	593
Switch Gasket	Each	5,072	20	593	593	593
Total or Weighted Average		169,912	13.5	36,638	36,638	36,638

Source: North Shore Gas tracking data and Guidehouse evaluation team analysis.