Guidehouse

Memorandum

To: Peoples Gas (PGL) and North Shore Gas (NSG)

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Celia Johnson, Illinois Stakeholder Advisory Group

From: Charles Ampong, Yeab Lakew, Laura Agapay-Read, Jeff Erickson, Guidehouse,
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Date: September 7, 2025

Re: PGL and NSG 2024 Verified Energy Savings and Cost Effectiveness Summary - Final

This memo provides background material to support Guidehouse's summary reporting of verified energy savings and cost-effectiveness results for the Peoples Gas (PGL) and North Shore Gas (NSG) energy efficiency program portfolios for Gas Program Year 2024.[1] Guidehouse provides a brief annual summary reporting for each program year, 2022 through 2025, and will produce a final report summarizing the combined results for the four program years after the final 2025 summary reporting.

Summary of Results

Table 1 and Table 2 summarize net energy savings achieved in 2024 and the cost-effectiveness tests. The results are presented with and without non-energy impacts (NEI).

Table 1. PGL 2024 Verified Energy Savings and Cost Effectiveness Test Results

Program	Verified Net Savings (Therms)	TRC Test (w/ NEI)	TRC Test (w/o NEI)	PACT Test (w/ NEI)	PACT Test (w/o NEI)
Elementary Education Kits (EEE)	149,093	7.0	3.0	3.8	1.6
Home Energy Rebates - HVAC, Smart Thermostats, Weatherization	386,303	5.5	1.8	2.1	1.5
Multi-Family - DI, Prescriptive, Custom, PTA	818,498	5.8	1.5	1.3	1.2
Home Energy Jumpstart	39,842	3.2	1.8	2.2	0.6
C/I & PS Prescriptive	2,595,217	4.4	1.1	1.2	1.2
C/I & PS Custom	395,967	9.4	2.3	1.8	1.8

[1] Gas Program Year 2024 began January 1, 2024, and ended December 31, 2024.

Program	Verified Net Savings (Therms)	TRC Test (w/ NEI)	TRC Test (w/o NEI)	PACT Test (w/ NEI)	PACT Test (w/o NEI)
C/I Gas Optimization	5,045	0.4	0.1	0.1	0.1
C&I and PS Joint New Construction	33,729	3.8	1.0	10.3	10.3
C&I and PS Retro-Commissioning	419,647	23.1	5.8	5.0	5.0
Small Business	1,238,201	6.3	1.6	1.5	1.5
Strategic Energy Management*	-	-	-	-	-
Community Joint Kits	521,649	11.4	5.0	6.8	2.7
IE Elementary Education Kits (EEE)	250,140	6.7	2.9	4.1	1.7
Multi-Family - IHWAP, Retrofits, PTA	1,791,812	4.3	1.2	0.9	0.8
Public Housing Authority (PHES)	58,846	0.7	0.2	0.2	0.2
Single Family - IHWAP, Retrofits, HEA	349,154	2.0	0.6	0.4	0.4
Residential (Non-IE) Total	**1,393,736**	**5.6**	**1.8**	**1.8**	**1.3**
Business and Public Sector Total	**4,687,806**	**5.6**	**1.4**	**1.4**	**1.4**
Income Eligible Total	**2,971,600**	**4.1**	**1.3**	**1.1**	**0.8**
Portfolio Total	**9,053,143**	**4.6**	**1.4**	**1.2**	**1.0**
Portfolio Total, without Income Qualified (IE)	**6,081,543**	**5.2**	**1.4**	**1.4**	**1.2**

* There were no Strategic Energy Management program savings in 2024.
Source: Evaluation Research

Table 2. NSG 2024 Verified Energy Savings and Cost Effectiveness Test Results

Program	Verified Net Savings (Therms)	TRC Test (w/ NEI)	TRC Test (w/o NEI)	PACT Test (w/ NEI)	PACT Test (w/o NEI)
Elementary Education Kits (EEE)	42,716	7.6	3.8	4.8	1.8
Epic Savers Kit (ESK)	24,906	8.5	4.4	3.6	1.3
Home Energy Jumpstart	8,755	4.0	2.1	2.6	0.9
Home Energy Rebates - HVAC, Smart Thermostats, Weatherization	202,279	5.1	2.0	4.4	2.9
Multi-Family - DI, Prescriptive, Custom, PTA	3,505	1.4	0.4	0.3	0.3
C&I and PS Joint New Construction	10,817	26.2	7.5	8.4	8.4
C&I and PS Retro-Commissioning	245	0.4	0.1	5.6	5.6
C/I & PS Custom	19,230	3.0	0.9	0.7	0.7
C/I & PS Prescriptive	974,548	8.6	2.4	2.5	2.5
C/I Gas Optimization	80,745	9.9	2.8	2.0	2.0
Small and Midsize Business	235,423	7.1	2.1	1.9	1.7
Strategic Energy Management*	-	-	-	-	-
Community Joint Kits	48,966	9.4	4.0	4.1	2.1

Program	Verified Net Savings (Therms)	TRC Test (w/ NEI)	TRC Test (w/o NEI)	PACT Test (w/ NEI)	PACT Test (w/o NEI)
Single Family - IHWAP, Retrofits, HEA	17,345	1.5	0.4	0.3	0.3
Public Housing Energy Savings	1,549	0.2	0.1	0.1	0.1
IE Elementary Education Kits (EEE)	17,181	7.2	3.7	5.0	1.8
Multi-Family - IHWAP, Retrofits, PTA, Public Housing	82,211	3.4	1.0	0.8	0.8
Residential (Non-IE) Total	**239,446**	**5.3**	**2.2**	**3.9**	**2.2**
Business and Public Sector Total	**1,321,009**	**8.1**	**2.3**	**2.1**	**2.1**
Income Eligible Total	**209,968**	**3.5**	**1.2**	**1.0**	**0.8**
Portfolio Total	**1,770,423**	**5.6**	**1.9**	**2.0**	**1.6**
Portfolio Total, without Income Qualified (IE)	**1,560,455**	**6.4**	**2.1**	**2.4**	**2.0**

* There were no Strategic Energy Management program savings in 2024.
Source: Evaluation Research

The summary data is presented in two spreadsheet attachments with six tabs for each utility:

- Tab 1: Verified Program Energy Savings, Other Impacts, and Cost Summary
- Tab 2: High Impact Measures
- Tab 3 and Tab 4: Total Resource Cost Test (TRC) Cost-Effectiveness Results – Plan 4 Avoided Costs[2]
- Tab 5 and Tab 6: Program Administrator Cost Test (PACT) Cost-Effectiveness Results – Plan 4 Avoided Costs

Key background information on each attachment tab follows.

Tab 1: Verified Program Energy Savings, Other Impacts, and Cost Summary

Tab 1 provides a summary of the components of verified therm savings and utility program costs for the 2024 program portfolio. Results for Residential, Business and Public Sector, and Income Eligible are subtotaled separately. For all joint and coordinated programs with ComEd, the interactive energy effects (resulting in negative gas savings) due to ComEd's electricity saving measures are not included in the reported verified natural gas savings. Tab 1 also reports water savings and greenhouse gas (GHG) reductions.[3]

[2] Application pursuant to Section 8-104 of the Public Utilities Act for Consent to and Approval of an Energy Efficiency Plan, Case Details for ICC Docket P2021-0159 available at https://www.icc.illinois.gov/docket/P2021-0159.

[3] GHG reductions reported in metric tons CO2, based on EPA calculators available at https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator.

Tab 2: High Impact Measures

Tab 2 provides energy savings results for High Impact Measures (HIM) for the 2024 portfolio.

- Savings shown are verified gross therms.
- The Illinois Technical Reference Manual Version 12.0 (TRM v12) places some common-area multifamily measures in the C&I sector. For 2024, Guidehouse grouped common-area measures for Multi-Family, Public Housing, and Affordable Housing New Construction with the residential sector.
- The HIM savings summary is rolled up by measure and sector, without reference to program, to show the importance of individual measure technologies to the overall portfolio.

Tab 3 and Tab 4: TRC Cost-Effectiveness Results

Tab 3 and Tab 4 provide TRC cost-effectiveness results for the 2024 PGL and NSG portfolios. Results are provided by program and sector (Residential, Business and Public Sector, and Income Eligible). The portfolio-level TRC is provided with and without the Income Eligible programs. Tab 3 provides program and portfolio-level TRC with NEIs included. The NEI benefits account for water, electricity savings, additional quantifiable benefits (AQB), and carbon adders. Tab 4 provides program and portfolio-level TRC with measure-specific water and electricity benefits,[4] excluding the AQB and carbon adders. Portfolio-level TRC is provided with and without the Income Eligible programs. The TRC benefits leverage the avoided costs from the Plan 4 filing, updated with actual costs through 2024. A brief methodology and data discussion follow.

Tab 5 and Tab 6: PACT Cost-Effectiveness Results

Tab 5 and Tab 6 provide PACT cost-effectiveness results for the 2024 PGL and NSG portfolios. Tab 5 provides program and portfolio-level PACT with measure-specific NEIs (i.e., water and electricity benefits) defined in the Illinois TRM. The PACT does not include other societal benefits (i.e., AQB and carbon adders). Tab 6 provides program and portfolio-level PACT without NEIs included. Portfolio-level PACT is provided with and without the Income Eligible programs included. The PACT benefits leverage the avoided costs from the Plan 4 filing, updated with actual costs through 2024. A brief methodology and data discussion follow.

Cost-Effectiveness Methodology

As part of the evaluation of PGL and NSG energy efficiency programs for gas program year 2024, Guidehouse performed benefit-cost calculations based on a combination of data provided by PGL and NSG and evaluated program results, referencing the Illinois TRM or Guidehouse research. The focus of this review is on the basis and calculations used to conduct the Illinois TRC test. The Illinois TRC test is defined in 220 ILCS 5/8-104(b)[5] as follows:

[4] Defined in the Illinois TRM.

[5] Public Utilities Act, Illinois Compiled Statutes maintained by the Legislative Reference Bureau, http://www.ilga.gov/legislation/ilcs/fulltext.asp?DocName=022000050K8-104.

> *"Cost-effective" means that the measures satisfy the total resource cost test which, for purposes of this Section, means a standard that is met if, for an investment in energy efficiency, the benefit-cost ratio is greater than one. The benefit-cost ratio is the ratio of the net present value of the total benefits of the measures to the net present value of the total costs as calculated over the lifetime of the measures. The total resource cost test compares the sum of avoided natural gas utility costs, representing the benefits that accrue to the system and the participant in the delivery of those efficiency measures, as well as other quantifiable societal benefits, including avoided electric utility costs, to the sum of all incremental costs of end use measures (including both utility and participant contributions), plus costs to administer, deliver, and evaluate each demand-side measure, to quantify the net savings obtained by substituting demand-side measures for supply resources. In calculating avoided costs, reasonable estimates shall be included for financial costs likely to be imposed by future regulation of emissions of greenhouse gases. The low-income programs described in item (4) of subsection (f) of this Section shall not be required to meet the total resource cost test.*

The Illinois TRC test differs from a traditional TRC test in its requirement to include a reasonable estimate of the financial costs associated with future regulations and legislation on the emissions of greenhouse gases (GHG). Additional benefits included in the calculation are the non-energy benefits and water savings. This difference adds a benefit to investments in efficiency programs that typically are included in the Societal Cost Test in other jurisdictions.

The PACT approaches cost-effectiveness from the perspective of the utility as program administrator and determines whether the energy supply costs avoided by the utility exceed the overhead and cost outlays that the utility incurred to implement energy efficiency programs. Since the PACT is primarily focused on utility outlays, incentives paid by the utility to either participants or third-party implementers are included in the calculation, rather than incremental or participant costs. Additionally, measure-specific non-energy benefits (i.e., water and electricity benefits) defined in the Illinois TRM are included in the PACT formula.

Incremental Measure Cost Approach

Incremental measure cost means the difference between the cost of the efficient measure and the cost of the most relevant baseline measure that would have been installed (if any) in the absence of the efficiency program. The Illinois Energy Efficiency Policy Manual[6] instructs that installation costs (material and labor) and Operations and Maintenance (O&M) costs shall be included if there is a difference between the efficient measure and the baseline measure. In cases where the efficient measure has a significantly shorter or longer life than the relevant baseline measure, the avoided baseline replacement measure costs should be accounted for in the TRC analysis. The incremental cost input in the TRC analysis is not reduced by the amount of any incentives.

[6] Illinois Energy Efficiency Policy Manual, available at: https://www.ilsag.info/policy/

Data Assumptions in the Cost-Effectiveness Calculations

The data points needed to conduct the Illinois TRC test are identified in Table 3 and are divided into generic and program-specific categories. The program-specific data points are further subdivided into those (1) provided by the utility, (2) are a result of evaluation activities, and (3) from multiple sources.

Table 1. Data Points Needed to Conduct the Illinois TRC Test

Category	Data Point	Source
Generic	• Avoided Natural Gas Costs: Plan 3 and Plan 4 • Avoided Electricity Costs • Loss Factor (Unaccounted-for-Gas Factor) • Plan 3 Non-Energy Benefits (NEBs) Adder • Plan 4 Non-Energy Impacts Additional Quantifiable Benefit • Weighted Average Cost of Capital	PGL and NSG / ComEd
Generic	• Societal Discount Rate • Greenhouse Gas (GHG) Adder	Illinois TRM[7] and Energy Efficiency Stakeholders Advisory Group
Program Specific	• Verified Participants / Measure Count • Verified Gross and Net Energy Savings • Realization Rate • Net-to-Gross Ratio	Final Evaluation Reports[8]
	• Non-Incentive Costs • Utility Incentive Costs	PGL and NSG
	• Incremental Measure Costs • Measure Life • Water Savings in Gallons and Avoided Water Costs • Electric Savings in kWh and Avoided kWh Costs	PGL and NSG / Guidehouse Evaluation / Illinois TRM / Other

Source: Evaluation

Following is a summary of the values for the generic data points used in the cost-effectiveness calculations for all programs and the portfolio.

- For the TRC, a discount rate of 2.40% was applied based on guidance in Illinois TRM version 12.0.
- For the PACT, the discount rate was a weighted average cost of capital (WACC) for PGL (6.31%) and NSG (6.70%).

[7] Illinois Statewide Technical Reference Manual (Illinois TRM). Available at: https://www.ilsag.info/technical-reference-manual/

[8] Evaluation documents are available at: https://www.ilsag.info/evaluation-documents/final-evaluation-reports/

- Natural gas avoided costs are based on Plan 4 values provided by PGL and NSG. Actual avoided costs were used in 2024. The loss factor was 1.0276 for PGL and 1.0080 for NSG.

The following points are noted for the program-specific data used in the cost-benefit calculations.

Benefits

- Energy saving benefits represent natural gas only, from final evaluation verified results from 2024.

- A GHG adder of $0.280 per therm is included starting in 2024 and escalating thereafter. Additional Quantifiable Benefits (Non-Energy) are included based on research conducted by Guidehouse.[9]

- For all joint and coordinated programs with ComEd, the interactive energy effects (resulting in negative gas savings) and costs due to electricity saving measures were not included in the analysis. The impact of electric interactive savings effects and costs are analyzed separately and presented in a joint electric-gas TRC memo. Coordinated or joint programs in the 2024 Energy Efficiency Portfolio (EEP) include:

Table 2. Summary of Coordinated or Jointly Implemented 2024 EEP Programs

Program	ComEd	PGL and NSG
Income Eligible Programs, except LIHEAP Kits	√	√
Home Energy Assessment / Home Energy Jumpstart	√	√
Multi-Family Retrofit	√	√
Elementary Energy Education	√	√
Coordinated Retro-Commissioning	√	√
Coordinated Non-Residential New Construction	√	√
Strategic Energy Management	√	√
Commercial Food Service	√	√

Source: Guidehouse

- For programs that are not joint with ComEd, some measures implemented by PGL and NSG have electricity savings that are not claimed by ComEd. These electricity savings are credited to the gas company in the TRC cost-effectiveness calculation as an "Other Benefit." Most electric benefits are generated from thermostats rebated or installed through non-joint offerings, demand-controlled ventilation, non-joint kits, and weatherization measures. In 2024, PGL and NSG claimed electrification savings from thermostats and weatherization measures. The impact of this benefit in the 2024 TRC calculation result is small, increasing total benefits by 1% for PGL and 3% for NSG.

- For early replacement measures, Guidehouse calculated the savings for the remaining life of the existing equipment, the savings for the remaining measure life per the algorithms deemed in the TRM, and the future avoided replacement costs. This analysis is not included

[9] Guidehouse Societal NEI Estimates for the Illinois Stakeholder Advisory Group, October 1, 2024.

in the evaluation reports as these only list the first-year savings value for each measure. The dual baseline adjustment has a minor positive impact on the PGL and NSG TRC results.[10]

- Guidehouse also included secondary benefits from water saving measures. Water saving benefits from water saving measures rely upon the Illinois TRM to estimate gallons of water saved per device. Water avoided costs were estimated using evaluator assumptions developed for PGL and NSG based on secondary research. Water savings account for 3% (NSG) and 5% (PGL) of TRC benefits and increase the benefits and TRC for programs that include water saving measures prominently, such as kit and direct installation programs for the residential sector, and steam traps for the non-residential sector.

Costs

- Incentives and non-incentive program costs were provided by PGL and NSG. For some programs, incentive amounts are tracked by program path, while non-incentive costs are tracked and bundled to include multiple paths. The analysis presents results at the program path level by allocating bundled costs based on weighting by ex ante annual gross therm savings. While this approach may distort the costs and TRCs for individual program paths, the sector level costs and TRCs will be accurately represented.
- For joint programs with ComEd, the measure costs are the PGL and NSG share of full incremental costs. Incentives and non-incentive costs are the PGL and NSG share of costs.

- For incremental measure costs, in cases where PGL and NSG do not provide the installation costs or the data is not tracked, the analysis uses the Illinois TRM and other sources. Professional judgment was used for reviewing and identifying the appropriate incremental measure costs. For IHWAP programs, incremental measure costs are twice the utility incentive.

- For coordinated kit, new construction, and retrocommissioning programs, Guidehouse leveraged measure- or project-level incremental measure costs from ComEd and PGL and NSG project information to determine actual costs for 2024 measures or projects.

- Excess incentives are the amount that incentives are greater than estimated incremental measure costs and, if present, should be added to non-incentive costs. Since incremental measure costs are estimated using the Illinois TRM, planning, and secondary research, they estimates may not include all relevant and up-to-date installation and equipment costs for some programs. Guidehouse set incremental measure costs to be not less than incentives for programs (twice the incentive for IHWAP) if incentives were greater than the initial incremental measure cost estimate. Incentives are allocated to C&I and Public Sector programs by gross therms. Some programs appear to have excess incentives; however, overall incremental measure costs values are greater than overall incentives for C&I and PS programs prior to allocating.

[10] Future avoided costs result in lower net incremental costs, thus improving the TRC score.

- For early replacement measures, Guidehouse used the full measure installation cost for the first year incremental measure cost and calculated future avoided costs per the Illinois TRM. Future avoided replacement costs reduce net incremental costs for retrofit measures by a total of $0.1[11] million for the PGL portfolio and $0.1 million for NSG.

[11] Value in 2024 dollars. Deferred replacement costs were discounted using the societal discount rate.