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Business New Construction 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 Business New Construction (BNC) program. The appendix presents the impact analysis methodology, detailed engineering desk review results, and Illinois total resource cost (TRC) inputs. Program year (PY) 2023 covers January 1, 2023 through December 31, 2023.

2. Program Description

The BNC program is offered jointly to commercial and industrial (C&I) and public sector (PS) customers served by ComEd, Nicor Gas, PGL, and NSG. The program aims to capture immediate and long-term energy efficiency opportunities available during the design and construction of non-residential and multifamily buildings. The program covers new buildings, additions, and major renovations.

Slipstream (formerly Seventhwave) implements the program by reaching out to design professionals, commercial real estate developers, and customers at the beginning of the design process. The implementation team provides building design technical assistance to aid participants in reducing energy use beyond what is required by existing building codes and standards. The PGL and NSG BNC program coordinates with ComEd where their service areas overlap. PGL and NSG acquire therms savings from the program using a dollar per therm payment model on a project-by-project basis.

Overall, the program had 87 participants in 2023 and completed 87 projects. Of these projects, 77 included gas savings, 18 of which were served jointly by ComEd and PGL, as Table 2-1 shows.

Table 2-1. 2023 Volumetric Summary for PGL

Participation	ComEd (Overall with Gas Utilities)	Peoples Gas
Program 2023 Total		
Participants *	77	18
Installed Projects †	77	18
Measure Types Installed	Whole Building	Whole Building

* Participants are defined as completed C&I and PS new construction projects.
† Installed Projects are defined as completed C&I and PS new construction projects.
Source: Peoples Gas tracking data and Guidehouse evaluation team analysis.

The NSG program had five participants in 2023 and completed five projects jointly with ComEd, as shown in Table 2-2.

Table 2-2. 2023 Volumetric Summary for NSG

Participation	ComEd (Overall with Gas Utilities)	North Shore Gas
Program 2023 Total		
Participants *	77	5
Installed Projects †	77	5
Measure Types Installed	Whole Building	Whole Building

* Participants are defined as completed C&I and PS new construction projects.
† Installed Projects are defined as completed C&I and PS new construction projects.
Source: North Shore Gas tracking data and Guidehouse evaluation team analysis.

3. Program Savings Detail

Table 3-1 summarizes the energy savings the PGL BNC Program achieved in 2023. The PGL program had one project in a DAC area.

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

Savings Category	Program Path	Ex Ante Gross Savings (Therms)	Verified Gross RR*	Verified Gross Savings (Therms	NTG†	Verified Net Savings (Therms)
DAC Eligible Projects	Whole Building	3,920	0.94	3,689	1.00	3,689
DAC Ineligible Projects	Whole Building	278,943	0.94	262,484	0.43	112,868
Total or Weighted Average		**282,863**	**0.94**	**266,173**		**116,557**

Note: Totals may not sum due to rounding
* 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 based on zip codes used a NTG of 1.0.
Source: Peoples Gas tracking data and Guidehouse evaluation team analysis.

Table 3-2 summarizes the energy savings the NSG BNC Program achieved in 2023. The NSG program had one project in a DAC area.

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

Program Category	Program Path	Ex Ante Gross Savings (Therms)	Verified Gross RR*	Verified Gross Savings (Therms	NTG†	Verified Net Savings (Therms)
DAC Eligible Projects	Whole Building	9,374	0.94	8,821	1.00	8,821
DAC Ineligible Projects	Whole Building	20,940	0.94	19,704	0.43	8,473
Total or Weighted Average		**30,314**	**0.94**	**28,525**		**17,294**

Note: Totals may not sum due to rounding.
* 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 based on zip codes used a NTG of 1.0.
Source: North Shore Gas tracking data and Guidehouse evaluation team analysis.

4. Program Savings by Measure

The BNC program claims savings at the whole building level, so this report does not present measure-level savings. Evaluation-verified savings for the program are based on a random sample of projects and reported at the project level (whole building analysis). Appendix B provides more information about sampled project-level savings.

5. Impact Analysis Findings and Recommendations

5.1 Impact Parameter Estimates

BNC program participants completed 87 projects (77 with gas savings) in 2023. The evaluation team used a stratified random sampling approach to select 30 projects to receive an engineering desk review. Of the 30 sampled projects, 28 projects had gas savings. Of the 28 projects with gas savings, 9 were served jointly by ComEd and PGL, and one was served jointly by ComEd and NSG[1] (see Appendix A for more detail on the sampling approach). For about half of the projects, the desk reviews resulted in realization rates (RR) of 100% and therefore independently confirmed the ex ante savings and required no adjustments.

The evaluation team calculated RRs with and without interactive effects (see Appendix A for more detail on interactive effects). The final RRs for projects with gas savings were 94% for therms without interactive effects and 93% for therms with interactive effects.

The evaluation team calculated verified gross and net energy savings using participant-specific whole building energy models developed by the implementation team for baseline and projected design scenarios. For each participant, the design energy model estimates the proposed

[1] Two NSG projects received a desk review since NSG project CINC-1325 was selected in the sample. While that project's electricity savings were claimed by ComEd in PY2023, NSG elected to claim the gas savings in program year PY2024.

building's annual whole building energy consumption based on architecture; building envelope; heating, ventilation, and air conditioning (HVAC); lighting; and other parameters from the building design plans. The baseline energy model for a project estimates the counterfactual annual energy consumption the building would be expected to consume if it were built to meet the baseline energy performance standards. The estimated first-year savings are the difference in annual electricity and gas consumption between the two models. Most of the models were developed in the Sketchbox program, which utilizes the DOE2.2 engine. The evaluation team reviewed the models using Sketchbox or eQuest, which also utilizes the DOE2.2 engine.

Table 5-1 shows the parameters used in the verified gross and net savings calculations and indicates which were calculated through evaluation activities and which were deemed. Following Table 5-1, the report provides findings and recommendations, including a discussion of all measures with RRs above or below 100%. Appendix A provides a description of the impact analysis methodology.

Table 5-1. 2023 Verified Gross Savings Parameters

Gross Savings Input Parameters	Deemed or Evaluated?	Source
Program Model Inputs	Evaluated	Program-supplied building models and savings calculation spreadsheet‡
Evaluation Model Inputs	Mixture	Desk review of project documentation; Illinois TRM v11.0†, PTD
Evaluation Model Results	Evaluated	eQuest/DOE2.2/DOE2.1E/Project Calculations
Realization Rate - All Projects	Evaluated	Program savings and evaluated savings
NTG - Electricity and Gas	Deemed	Illinois SAG Consensus
EUL	Mixture	Illinois TRM v11.0† – Volume 4 Attachment B

* 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.ilsag.info/technical-reference-manual.html**.
‡ Project files and monthly billing data provided by Peoples Gas and North Shore Gas. When conducted, on-site and telephone interview data collected by Guidehouse.

5.2 Findings and Recommendations

The evaluation team developed several recommendations based on findings from the PY2023 evaluation of PGL and NSG projects.

5.2.1 PGL Findings and Recommendations

The factors that had the largest effect on adjusting ex ante gross savings were the use of an incorrect ventilation rate on a single large project; inconsistencies between installed equipment specifications and performance characteristics; and incorrect application of code requirements or baselines. The evaluation team developed several recommendations based on findings from the PY2023 evaluation.

Finding 1. The verified savings are different from ex ante savings due to installed equipment quantities or specifications being inconsistent with performance characteristics included in the building models or calculations:

- The evaluation team adjusted the installed lighting wattage for two projects (1249, 1250) due to changes to lighting counts or specifications. The adjustment to lighting wattage resulted in changes to modeled gas usage and changes to savings for gas efficiency measures.
- Based on supplied equipment specification sheets, the evaluation team adjusted the condensing boiler efficiency from 94.0% to 93.7% for project 915 and reduced the hot water heater efficiency from 98% to 95%.
- Based on supplied equipment specification sheets, the evaluation team adjusted the condensing boiler efficiency from 90.0% to 93.8% for project 1249 and reduced the snow-melt boiler efficiency from 94.6% to 93.5%.
- The evaluation team increased the furnace efficiency for project 952 from 96.0% to 96.1%.

Recommendation 1. Ensure installed equipment data are accurately sourced and entered into the building models.

Finding 2. The evaluation team reduced the savings for one project due to incorrect application of code requirements or baselines:

- Project 1249 utilized a 40% glazing area baseline to calculate a penalty for the above-code window area in the ex ante savings. However, the building is a low-rise building with less than required daylight zones. Therefore, the evaluation team reduced the baseline glazing area to 30%.

Recommendation 2. Increase QA/QC processes to ensure baselines for building simulations or savings calculations are consistent with applicable codes and standards for the equipment installed.

5.2.2 NSG Findings and Recommendations

The evaluation team increased the savings for the evaluated NSG projects.

Finding 1. The verified savings are different from ex ante savings due to installed equipment quantities or specifications being inconsistent with performance characteristics included in the building models or calculations:

- The ex ante savings for project 1034 used a window area in the building simulation that differed from the window area in the building plans. The evaluation team updated the simulation to reflect the window area from the supplied plans.

Recommendation 1. Ensure installed equipment data are accurately sourced and entered into the building models.

Finding 2. The evaluation team found discrepancies between the tracking data provided by ComEd and NSG for project 1034.

- The ex ante gas savings for project 1034 were not consistent across the utilities' tracking data. Project 1034 was part of the stratified random sample for CY2023 evaluation. The evaluation team was able to confirm the ex ante gross savings from the project files provided in the ComEd database. Details of the evaluation findings from these projects are provided in Appendix B.1.

Recommendation 2. Ensure project data provided to ComEd, Nicor Gas, PGL, and NSG are consistent across their respective tracking data submitted for evaluation. The data should clarify which projects the coordinated utilities are claiming savings for the program year under evaluation and clarify where there are cost or therms percentage allocations for specific projects and each respective utility.

Appendix A. Impact Analysis Methodology

A.1 Engineering Methodology

The description of building energy models used in the measurement and verification engineering analysis is included in **Error! Reference source not found.** The analysis included the following:

- Adjusting the model inputs in the executable files to match the as-built conditions identified in the evaluation team's review of the BNC program's project files and then rerunning the model.
- Quantifying impacts by comparing two simulations representing the projected design and baseline scenarios.

The baseline model is the Illinois Energy Conservation Code for Commercial Buildings, which references and incorporates the applicable International Energy Conservation Code (IECC). The Illinois Energy Conservation Code for Commercial Buildings explicitly allows for the use of American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 90.1 as an alternate compliance method.

The program assumes the appropriate baseline based on the program application date. Projects designed through PY2019 used IECC 2015 (based on ASHRAE 90.1-2013) with more recent projects using IECC 2018 (based on ASHRAE 90.1-2016). The evaluation team relied on the same software, methods, and approach to assigning baseline assumptions the program implementers used to estimate the ex ante models.

The team also calculated interactive effects for each fuel type, where applicable. Interactive effects are the resulting changes to savings that occur when the installation of one measure has a positive or negative effect on the consumption of another fuel type. Interactive effects are calculated in the model. For utilities' goal tracking, the evaluation team provides the savings without the penalties from interactive effects. The implementation team calculated savings for joint projects including interactive effects. However, the evaluation team calculated savings with and without interactive effects for reporting purposes. Unless noted, the results in this report exclude penalties from cross-fuel interactive effects.

The evaluation team calculated verified net therms savings by multiplying the verified gross savings estimates by a net-to-gross (NTG) ratio. In PY2023, the NTG values used to calculate the net verified savings were based on past evaluation research and approved by the Illinois Stakeholder Advisory Group (SAG). The evaluation team applied a NTG ratio of 1.0 to verified gross savings estimates corresponding to eligible projects under the NTG for Disadvantaged Areas Community (DAC) Policy. Eligible projects consisted of public projects in a disadvantaged municipality for the BNC program.

The evaluation team selected a stratified random sample for the BNC program to support the engineering desk reviews. The team designed the sample to provide 90/10 confidence and precision for evaluated therms savings estimates.

A.2 Sampling Approach

Consistent with previous evaluations, the evaluation team developed a MMBtu stratified random sample of projects to support the engineering desk reviews. This approach focused on electricity and gas savings. The team designed the sample to provide 90/10 precision for evaluated kW, kWh, and therms savings, considering savings with and without interactive effects. This approach also targeted 90/10 precision at the MMBtu level.

The team sampled PY2023 projects in two waves. The Wave 1 sample frame contained all 23 projects with electricity or gas savings completed as of June 30, 2023. The Wave 2 sample frame contained the remaining 64 projects completed between July 1, 2023, and December 31, 2023. For each wave, the evaluation team divided the sample frame into strata based on the overall MMBtu savings of each project and randomly selected projects within those strata. After completing the desk reviews and calculating project-specific RRs, the team developed case weights to extrapolate the results to similar projects, ensuring the engineering results represent the population of PY2023 participants. Table A 1 shows the MMBtu profile of the sample selection. Table A-2 shows the profile of the sample for therms savings and roll up gross RR and precision estimate.

Table A 1. 2023 Profile of Gross Impact Sample for Projects (MMBtu)

	Population Summary*†			Sample Summary*		
Program	Sampling Strata	Number of Projects (N)	Ex Ante Gross Savings (MMBtu)	n	Ex Ante Gross Savings (MMBtu)	Sampled % of Population (% MMBtu)
Coordinated Non-Residential Business New Construction	1	38	17,076	7	3,580	21%
	2	32	52,655	13	22,500	43%
	3	17	75,830	10	49,963	66%
TOTAL		**87**	**145,561**	**30**	**76,043**	**52%**

*The gross impact population and sample include MMBtu savings for PGL and NSG, as well as Nicor Gas and ComEd.
†One PGL project (CINC-1457) and one NSG project (CINC-1325) were included in the population during sampling, with CINC-1325 being selected. While electricity savings were claimed by ComEd, PGL, and NSG elected to claim the respective gas savings in PY2024.
Source: Guidehouse evaluation team analysis.

Table A-2. 2023 Profile of Gross Impact Sample for Projects and Realization Rate

Population Summary*†				Sample Summary*			Statistical Verification Results	
Program	Sampling Strata	Number of Projects (N)	Ex Ante Gross Savings (Therms)	n	Ex Ante Gross Savings (Therms)	Sampled % of Population (% Therms)	RR	Precision
Coordinated Non-Residential Business New Construction	1	40	110,950	11	35,822	32%		
	2	25	270,530	9	96,469	36%		
	3	12	374,494	8	261,642	70%		
TOTAL		**77**	**755,974**	**28**	**393,933**	**52%**	**94%**	**3.4%**

*The gross impact population and sample included combined projects and therms savings for PGL and NSG projects, as well as Nicor Gas and ComEd projects for a combined sample design and roll up of the program verified gross realization estimate.
† One PGL project (CINC-1457) and one NSG project (CINC-1325) were included in the population during sampling, with CINC-1325 being selected. While electricity savings were claimed by ComEd, PGL, and NSG elected to claim the respective gas savings in program year 2024.
Source: Guidehouse evaluation team analysis.

Appendix B. Impact Analysis Supplemental Information

B.1 Engineering Desk Review Results

Error! Reference source not found. shows the results of the engineering desk review for PGL projects and

Table B-1 shows the results for the engineering desk review for NSG projects, including the ex ante savings, verified savings, and the resulting RR for each project in the desk review sample. The tables also include, where applicable, a narrative describing the reasons for any discrepancies between ex ante and verified savings. A RR less than 1.00 indicates that a project received a downward adjustment to energy savings, while a RR more than 1.00 indicates that a project received an upward adjustment to energy savings. All energy savings exclude interactive effects.

Table B-1. 2023 Researched Gross Savings for Sampled Projects for PGL

		Ex Ante		Verified		Realization Rate	
Project ID	Gas Utility	Electricity Savings (kWh/yr)	Gas Savings (therm/yr)	Electricity Savings (kWh/yr)	Gas Savings (therm/yr)	Electricity (kWh) Savings Realization Rate	Gas (therm) Savings Realization Rate
CINC-1347	Peoples Gas	604,357	18,697	604,357	18,697	1.00	1.00
	No changes were made						
CINC-0915	Peoples Gas	510,435	34,505	468,934	32,705	0.92	0.95
	The evaluation team conducted multiple changes to the analysis. The most significant change to the ex ante savings estimates was due to changes to the glazing area. Based on a review of the building plans, the evaluation team changed the installed glazing area from 58.0% to 62.4%. Additional changes: -The evaluation team changed the baseline and achieved EER values for the water source heat pumps based on reweighting the average EER values based on the quantities provided in the refrigeration schedule in the drawings. The evaluation team changed the baseline from an EER of 12.4 to an EER of 12.3 and changed the achieved EER from 14.5 to 15.0. -The evaluation team changed the achieved condensing boiler efficiency from 94.0% to 93.7%. -The evaluation team changed the DHW heater achieved efficiency from 98% to 95%, based on information included in the verification photos.						
CINC-0952	Peoples Gas	113,610	15,711	89,844	15,520	0.79	0.99
	The most significant change was to the savings for the variable refrigerant flow system savings. Specifically, the VRF measure appeared to include savings for both the VRF as well as savings for a furnace/AC parametric run. The furnace/AC parametric run was not listed in the claimed savings. However, the savings for the efficient AC units appeared to be included in the VRF measure. The evaluation team deleted the parametric component instead of just unchecking it in the parametric run, and the savings for the VRF measure were significantly reduced. Additional changes: -The evaluation team adjusted the split system installed efficiency from the claimed 18 SEER to 17 SEER per specifications sheet. -The evaluation team increased the furnace efficiency from 96.0% to 96.1% per specifications sheet.						

		Ex Ante		Verified		Realization Rate	
Project ID	Gas Utility	Electricity Savings (kWh/yr)	Gas Savings (therm/yr)	Electricity Savings (kWh/yr)	Gas Savings (therm/yr)	Electricity (kWh) Savings Realization Rate	Gas (therm) Savings Realization Rate
	- The evaluation team adjusted the quantity of ENERGY STAR dishwashers from 100 to 80 (20 installed in ADA-accessible units were NOT Energy Star Rated).						
CINC-1105	Peoples Gas	382,633	27,445	422,709	27,445	1.10	1.00
	The evaluation team increased the efficiency of the WSHP compared to the ex ante model. The ex ante savings used an equivalent EER of 11.54 for the WSHP cooling efficiency for the as-built building. The project documentation indicated that the installed unit had an EER of 12.88. To account for this value, the verified savings reduced the cooling electric input ratio (EIR) from 2.35 to 2.15 in the model, and the evaluation team recalculated the savings.						
CINC-1249	Peoples Gas	102,178	3,920	147,337	3,429	1.44	0.87
	The most significant changes were due to the glazing area. Specifically, the claimed baseline glazing area was 40%. Based on IECC 2018, this building does not have enough daylight zone area to qualify for the higher 40% glazing baseline, thus the evaluation team changed the baseline from 40% to 30%. Additionally, the evaluation team adjusted the as-built glazing area. The ex ante savings overcounted the punched opening window quantity, so the evaluation team decreased the installed glazing area from 52% to 40%. Additional changes: -The evaluation team changed the installed LPD from 0.46 W/sf to 0.41 W/sf. - The evaluation team updated the baseline gym LPD using a weighted average to adjust the baseline gym LPD from 0.59 W/sf to 0.606 W/sf by weighting the gymnasium LPD and exercise center LPD allowances. - The evaluation team changed the achieved gym LPD from 0.55 W/ sf to 0.56 W/sf. - The evaluation team changed the condensing boiler achieved efficiency from 90.0% to 93.8%. The new value is a weighted average for the three boilers (one snowmelt and two reheat boilers). Specifications found online indicate the gross thermal efficiency of the snowmelt boiler is 94.6%, and 93.5% for the reheat boilers. While the evaluation team did not change the spandrel u-value measure, the documentation for this measure was insufficient to verify the listed assumptions.						
CINC-1250	Peoples Gas	39,646	5,031	54,467	4,142	1.37	0.82
	The evaluation team adjusted the savings due to changes to the lighting measure. The evaluation team recalculated the lighting power density for the warehouse space based on installed fixtures. Specifically, the evaluation team changed the fixture wattage from 315W to 289.2W resulting in a change from 0.36W/sf to 0.2854W/sf. Additionally, it should be noted that the evaluation team reduced the gas savings due to HVAC interactive effects not being included in the tracking system savings estimates, even though they were calculated correctly within the project calculations. It should be noted that the evaluation team did not adjust the exterior lighting savings, but the information provided was insufficient to evaluate this measure.						
CINC-1319	Peoples Gas	1,175,294	45,307	1,175,294	45,307	1.00	1.00
	No changes were made						
CINC-1331	Peoples Gas	174,719	5,879	174,719	5,879	1.00	1.00
	No changes were made						
CINC-1387	Peoples Gas	241,762	15,629	241,762	15,629	1.00	1.00
	No changes were made						

Source: ComEd, PGL, and NSG tracking data and evaluation team analysis

DHW – Domestic Hot Water
LPD – Lighting Power Density
IPLV – Integrated Part Load Values
GPM – Gallons Per Minute
HP – Horsepower
DCV – Demand Controlled Ventilation
CFM – Cubic Feet per Minute
VFD – Variable Frequency Drives
EIR – Electric Input ratio
VRF – Variable Refrigerant Flow

Table B-1. 2023 Researched Gross Savings for Sampled Projects for NSG

		Ex Ante		Verified		Realization Rate	
Project ID	Gas Utility	Electricity Savings (kWh/yr)	Gas Savings (therm/yr)	Electricity Savings (kWh/yr)	Gas Savings (therm/yr)	Electricity (kWh) Savings Realization Rate	Gas (therm) Savings Realization Rate
CINC-1034	North Shore Gas	235,547	9,374	269,848	10,204	1.15	1.09
	Based on a review of the supplied building plans, the window area does not exceed 40% of the sides of the building, thus nullifying the penalty measure.						

Source: ComEd, PGL, and NSG tracking data and evaluation team analysis

DHW – Domestic Hot Water
LPD – Lighting Power Density
IPLV – Integrated Part Load Values
GPM – Gallons Per Minute
HP – Horsepower
DCV – Demand Controlled Ventilation
CFM – Cubic Feet per Minute
VFD – Variable Frequency Drives

Appendix C. Program Specific Inputs for the Illinois TRC

Error! Reference source not found. and Table C-2 show the TRC cost-effectiveness analysis inputs available at the time of producing this impact evaluation report for PGL and NSG respectively. Additional required cost data (e.g., measure costs, program-level incentive, and non-incentive costs) are not included in **Error! Reference source not found.** and Table C-2 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. 2023 Verified Cost Effectiveness Inputs – PGL

Program Path	Savings Category	Units	Quantity	Effective Useful Life	Ex Ante Gross Savings (Therms)	Verified Gross Savings (Therms)	Gross Heating Penalty (Therms)	Verified Net Savings (Therms)	Net Heating Penalty (Therms)
Whole Building	DAC Eligible Projects	Project	1	20.6	3,920	3,689	-3,689	3,689	-3,689
Whole Building	DAC Ineligible Projects	Project	17	20.6	278,943	262,484	-79,970	112,868	-34,387
			18		**282,863**	**266,173**	**-83,658**	**116,557**	**-38,076**

Note: Totals may not sum due to rounding.

Source: Peoples Gas tracking data and Guidehouse evaluation team analysis

Table C-2. 2023 Verified Cost Effectiveness Inputs – NSG

Program Path	Savings Category	Units	Quantity	Effective Useful Life	Ex Ante Gross Savings (Therms)	Verified Gross Savings (Therms)	Gross Heating Penalty (Therms)	Verified Net Savings (Therms)	Net Heating Penalty (Therms)
Whole Building	DAC Eligible Projects	Project	1	20.6	9,374	8,821	-399	8,821	-399
Whole Building	DAC Ineligible Projects	Project	4	20.6	20,940	19,704	-7,276	8,473	-3,129
			5		**30,314**	**28,525**	**-7,675**	**17,294**	**-3,528**

Note: Totals may not sum due to rounding.

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