



# Small and Midsize Business Impact Evaluation Report

Energy Efficiency Plan: Plan Year 2021  
(1/1/2021-12/31/2021)

**Prepared for:**

**Peoples Gas and North Shore Gas**

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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) 2021 Small and Midsize Business (SMB) Program. It presents a summary of the energy impacts for the total program and broken out by relevant measure and program structure details. Appendix A presents the impact analysis methodology. Program year 2021 covers January 1, 2021 through December 31, 2021.

## 2. Program Description

The 2021 SMB Program is offered by Peoples Gas and North Shore Gas (PGL and NSG) with Franklin Energy operating as the program implementer. The SMB Program seeks to secure energy savings through direct installation of low-cost efficiency measures, rebates for the installation of prescriptive retrofit measures, and custom rebates for non-prescriptive upgrades. A network of partner trade allies (PTA) promotes measures and assists in engaging customers to participate in site assessments to identify savings opportunities. To serve as a PTA, participation and customer satisfaction goals must be achieved. Customers using a PTA will be eligible for enhanced rebate levels. The small business direct install delivery path included kits for restaurant and grocery businesses. The kits were distributed to each business with attached labels on all the kits, along with an informational letter for each kit, and installation instructions.

The PGL program had 304 participants in 2021 and completed 346 projects, as shown in Table 2-1.

**Table 2-1. 2021 Volumetric Summary for PGL**

Participation	Direct Install / Kits	Prescriptive / PTA	Custom	Total
Participants *	148	154	2	304
Installed Projects †	183	161	2	346
Measure Types Installed	1	25	4	30

\* Participants are defined as unique number of project site addresses.

† Installed Projects are defined as the unique number of Project IDs.

PTA – Partner Trade Ally.

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

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

**Table 2-2. 2021 Measure Quantities for PGL**

Program Path	Measure	Quantity Unit	Installed or Distributed* Quantity	
Direct Install / Kits	Kit	Each	183	
	Boiler Reset Controls	MBH	400	
	Boiler Tune Up - Process	MBH	14,163	
	Boiler Tune Up - Space Heating	MBH	58,225	
	Condensing Unit Heater	MBH	1,150	
	Demand Controlled Ventilation (DCV) - Gas Heating	Square Feet	247,467	
	DCV - Kitchen	HP	3	
	DHW Storage Tank Insulation	Square Feet	187	
	Direct Fired Heaters	MBH	2,332	
	Energy Star Fryer	Each	13	
Prescriptive / PTA	Energy Star Dishwasher - Single Door (High Temp)	Each	1	
	High Efficiency Boiler	MBH	12,866	
	High Efficiency Furnace	Each	16	
	High Speed Washer	lbs-capacity	2,660	
	Large Gas Water Heater	MBH	597.9	
	Linkageless Controls	MBH	56,600	
	Modulating Dryers	Each	33	
	Pipe Insulation	Linear Feet	4,420	
	Prescriptive Change Steam Trap	Project	2	
	Programmable Thermostat	Each	9	
	Smart Thermostat	Each	50	
	Steam Traps - Dry Cleaner	Each	336	
	Steam Traps - HVAC Repair/Rep	Each	969	
	Steam Traps - Industrial Rep	Each	8	
	Boiler Chemical Descaling LP	MBH	16,800	
	Ozone Laundry	lbs-capacity	1,020	
	Custom	Boiler Combustion Controls	Each	1
		Space Conditioning Controls	Each	1
		Demand Controlled Ventilation	Each	1
		HVAC - Other	Each	1

\* Volume for kits is the quantity distributed.

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



The NSG program had 110 participants in 2021 and completed 115 projects, as shown in Table 2-3.

**Table 2-3. 2021 Volumetric Summary for NSG**

Participation	Direct Install / Kits	Prescriptive / PTA	Custom	Total
Participants*	15	89	6	110
Installed Projects †	15	94	6	115
Measure Types Installed	2	15	3	20

\* Participants are defined as unique number of project site addresses. A project site may participate in multiple paths, so total count may not equal sum of the path counts.

† Installed Projects are defined as the unique number of Project IDs.

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

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

**Table 2-4. 2021 Measure Quantities for NSG**

Program Path	Measure	Quantity Unit	Installed or Distributed* Quantity
Direct Install / Kits	Kit	Each	16
	Pre Rinse Sprayer	Each	2
	Boiler Reset Controls	MBH	1,056
	Boiler Tune Up - Process	MBH	9,217
	Boiler Tune Up - Space Heating	MBH	1,056
	Furnace Tune-up	MBH	1,930
	DHW Storage Tank Insulation	Square Feet	101
Prescriptive / PTA	Energy Star Fryer	Each	11
	High Efficiency Boiler	MBH	1,701
	High Efficiency Furnace	Each	2
	Large Gas Water Heater	MBH	200
	Pipe Insulation	Linear Feet	11,208
	Programmable Thermostat	Each	2
	Smart Thermostat	Each	16
	Steam Traps - Dry Cleaner	Each	214
Custom	Steam Traps - Industrial Rep	Each	5
	Process - Insulation	Each	8
	Process - Other	Each	1

\* Volume for kits is the quantity distributed.

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



### 3. Savings Summary

Table 3-1. summarizes the energy savings the PGL program achieved by path in 2021.

**Table 3-1. 2021 Annual Energy Savings Summary for PGL**

Program Path	Ex Ante Gross Savings (Therms)	Verified Gross RR*	Verified Gross Savings (Therms)	NTG†	Verified Net Savings (Therms)
Direct Install / Kits	19,185	100%	19,184	0.95	18,225
Prescriptive / PTA	844,310	100%	844,268	0.92/ 0.96	777,191
Custom	43,202	101%	43,432	0.92	39,958
<b>Total or Weighted Average</b>	<b>906,698</b>	<b>100%</b>	<b>906,884</b>	<b>0.92</b>	<b>835,373</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/ntg\\_2021](https://www.ilsag.info/ntg_2021).

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

Table 3-2 summarizes the energy savings the NSG program achieved by path in 2021.

**Table 3-2. 2021 Annual Energy Savings Summary for NSG**

Program Path	Ex Ante Gross Savings (Therms)	Verified Gross RR*	Verified Gross Savings (Therms)	NTG†	Verified Net Savings (Therms)
Direct Install / Kits	2,168	100%	2,168	0.95	2,059
Prescriptive / PTA	245,224	100%	245,219	0.92/ 0.96	225,743
Custom	180,536	108%	194,870	0.92	179,281
<b>Total or Weighted Average</b>	<b>427,928</b>	<b>103%</b>	<b>442,257</b>	<b>0.92</b>	<b>407,083</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/ntg\\_2021](https://www.ilsag.info/ntg_2021).

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



## 4. Program Savings by Measure

The PGL program includes 30 measures, as shown in Table 4-1. The steam traps, boiler tune-ups, and pipe insulation contributed the most savings.

**Table 4-1. 2021 Annual Energy Savings by Measure for PGL**

Program Path	Research Category	Ex Ante Gross Savings (Therms)	Verified Gross RR	Verified Gross Savings (Therms)	NTG	Verified Net Savings (Therms)
<b>Direct Install / Kits</b>	Kit	19,185	100%	19,184	0.95	18,225
	Boiler Reset Controls	537	100%	537	0.92	494
	Boiler Tune Up - Process	14,485	100%	14,485	0.92	13,326
	Boiler Tune Up - Space Heating	27,575	100%	27,572	0.92	25,366
	Condensing Unit Heater	2,039	100%	2,039	0.92	1,876
	DCV - Gas Heating	16,828	100%	16,828	0.92	15,482
	DCV - Kitchen	2,322	100%	2,322	0.92	2,136
	DHW Storage Tank Insulation	1,001	100%	1,001	0.92	921
	Direct Fired Heaters	5,871	100%	5,870	0.92	5,400
	Energy Star Fryer	6,603	100%	6,603	0.92	6,074
<b>Prescriptive / PTA</b>	Energy Star Dishwasher - Single Door (High Temp)	294	100%	294	0.92	270
	High Efficiency Boiler	10,505	100%	10,505	0.92	9,665
	High Efficiency Furnace	3,953	100%	3,953	0.92	3,637
	High Speed Washer	12,366	100%	12,365	0.92	11,376
	Large Gas Water Heater	430	100%	430	0.92	396
	Linkageless Controls	31,850	100%	31,853	0.92	29,305
	Modulating Dryers	7,594	100%	7,594	0.92	6,987
	Pipe Insulation	35,370	100%	35,368	0.92	32,539
	Prescriptive Change Steam Trap	14,691	100%	14,691	0.92	13,516
	Programmable Thermostat	1,803	100%	1,802	0.96	1,730
	Smart Thermostat	9,813	100%	9,813	0.96	9,421
	Steam Traps - Dry Cleaner	217,743	100%	217,732	0.92	200,314
	Steam Traps - HVAC Repair/Rep	367,143	100%	367,107	0.92	337,739
	Steam Traps - Industrial Rep	15,117	100%	15,116	0.92	13,907
	Boiler Chemical Descaling LP	7,047	100%	7,048	0.92	6,484



Program Path	Research Category	Ex Ante Gross Savings (Therms)	Verified Gross RR	Verified Gross Savings (Therms)	NTG	Verified Net Savings (Therms)
<b>Custom</b>	Ozone Laundry	31,332	100%	31,337	0.92	28,830
	Boiler Combustion Controls	7,055	100%	7,055	0.92	6,491
	Demand Control Ventilation	4,408	100%	4,408	0.92	4,055
	HVAC - Other	22,007	101%	22,166	0.92	20,393
	Space Conditioning Controls	9,733	101%	9,803	0.92	9,019
<b>Total or Weighted Average</b>		<b>906,698</b>	<b>100%</b>	<b>906,884</b>	<b>0.92</b>	<b>835,373</b>

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

The NSG program includes 20 measures as shown in the following table. The custom measures, steam traps, and pipe insulation contributed the most savings.

**Table 4-2. 2021 Annual Energy Savings by Measure for NSG**

Program Path	Research Category	Ex Ante Gross Savings (Therms)	Verified Gross RR	Verified Gross Savings (Therms)	NTG	Verified Net Savings (Therms)
<b>Direct Install / Kits</b>	Kit	1,677	100%	1,677	0.95	1,593
	Pre Rinse Sprayer	490	100%	490	0.95	466
<b>Prescriptive / PTA</b>	Boiler Reset Controls	1,418	100%	1,418	0.92	1,304
	Boiler Tune Up - Process	9,426	100%	9,427	0.92	8,672
	Boiler Tune Up - Space Heating	500	100%	500	0.92	460
	Business Furnace Tune	692	100%	692	0.92	636
	DHW Storage Tank Insulation	541	100%	541	0.92	498
	Energy Star Fryer	5,587	100%	5,587	0.92	5,140
	High Efficiency Boiler	867	100%	867	0.92	798
	High Efficiency Furnace	494	100%	494	0.92	455
	Large Gas Water Heater	144	100%	144	0.92	132
	Modulating Dryers	10,125	100%	10,126	0.92	9,316
	Pipe Insulation	36,534	100%	36,535	0.92	33,612
	Programmable Thermostat	401	100%	401	0.96	385
	Smart Thermostat	3,140	100%	3,140	0.96	3,014
	Steam Traps - Dry Cleaner	138,681	100%	138,675	0.92	127,581
	Steam Traps - Industrial Rep	36,674	100%	36,674	0.92	33,740
<b>Custom</b>	Process - Insulation	134,182	111%	148,515	0.92	136,634
	Process - Other	46,355	100%	46,355	0.92	42,646
<b>Total or Weighted Average</b>		<b>427,928</b>	<b>103%</b>	<b>442,257</b>	<b>0.92</b>	<b>407,083</b>

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



## 5. Impact Analysis Findings and Recommendations

### 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 the table, we provide findings and recommendations, including discussion of all measures with realization rates above or below 100 percent. Appendix A provides a description of the impact analysis methodology. Appendix B provides the Total Resource Cost (TRC) cost-effectiveness analysis inputs available at the time of producing this impact evaluation report.

**Table 5-1. Verified Gross Savings Parameters**

Measure	Unit Basis	Ex Ante Gross (therms/unit)	Verified Gross (therms/unit)	Realization Rate	Data Source(s)*
Boiler Reset Controls	MBH	1.34	1.34	100%	TRM v9.0†, Section 4.4.4
Boiler Tune Up - Process	MBH	1.02	1.02	100%	TRM v9.0, Section 4.4.3
Boiler Tune Up - Space Heating	MBH	0.47	0.47	100%	TRM v9.0, Section 4.4.2
Condensate Tank Insulation	Sq. Ft.	1.77	1.77	100%	SMB Tracking Data*
DCV - Gas Heating	Sq. Ft.	0.07	0.07	100%	TRM v9.0, Section 4.4.19
DCV - Kitchen	HP	774.02	774.02	100%	TRM v9.0, Section 4.2.16
DHW Storage Tank Insulation	Sq. Ft.	5.35	5.35	100%	SMB Tracking Data
Direct Fired Heaters	MBH	2.52	2.52	100%	TRM v9.0, Section 4.2.6
Fryer	Each	507.93	507.90	100%	TRM v9.0, Section 4.2.7
High Efficiency Boiler	MBH	0.57	0.57	100%	TRM v9.0, Section 4.4.10
High Efficiency Furnace	Each	247.07	247.09	100%	TRM v9.0, Section 4.4.11
High Speed Washer	lbs-capacity	4.65	4.65	100%	TRM v9.0, Section 4.8.5
Kits	Each	104.84	104.83	100%	TRM v9.0, SMB Tracking Data, 2021 MMDB
Large Gas Water Heater	MBH	0.72	0.72	100%	TRM v9.0, Section 4.3.1
Linkageless Controls	MBH	0.56	0.56	100%	TRM v9.0, Section 4.4.21
Pipe Insulation	Lin. Ft.	230.11	230.13	100%	TRM v9.0, Section 4.4.14
Pre Rinse Sprayer	Each	7.60	8.03	107%	TRM v9.0, Section 4.2.11
Prescriptive Change	Each	237.37	237.41	100%	SMB Tracking Data
Programmable Thermostat	Each	1.00	1.00	100%	TRM v9.0, Section 4.4.48
Smart Thermostat	Each	200.31	200.27	100%	TRM v9.0, Section 4.4.48
Steam Traps - Dry Cleaner	Each	196.25	196.26	100%	TRM v9.0, Section 4.4.16



Measure	Unit Basis	Ex Ante Gross (therms/unit)	Verified Gross (therms/unit)	Realization Rate	Data Source(s)*
Steam Traps - HVAC Repair/Rep	Each	648.04	648.01	100%	TRM v9.0, Section 4.4.16
Steam Traps - Industrial Rep	Each	376.02	375.98	100%	TRM v9.0, Section 4.4.16
Boiler Chemical Descaling LP	MBH	0.42	0.42	100%	SMB Tracking Data*
Ozone Laundry	lbs-capacity	30.72	30.72	100%	TRM v9.0, Section 4.3.6
Energy Star Dishwasher - Single Door (High Temp)	Each	294	294	100%	TRM v9.0, Section 4.2.6
Business Furnace Tune-up	MBH	0.358	0.358	100%	TRM v9.0, Section 4.4.31
Custom Measures	Each	Vary	Vary	107%	Project File Review, Monthly Billing Data, Phone Interview‡

\* SMB Program Tracking Data (PTD) provided by Peoples Gas and North Shore Gas; extract dated February 1, 2022.

† State of Illinois Technical Reference Manual version 9.0 from <http://www.ilsag.info/technical-reference-manual.html>.

‡ Project files and monthly billing data provided by Peoples Gas and North Shore Gas, including telephone interview data collected by Guidehouse.

## 5.2 Kits Findings and Recommendations

**Finding 1.** The ex ante net savings in the tracking data used a net-to-gross (NTG) of 0.92. The 2021 deemed NTG for Assessment/Direct Install is 0.95 to calculate the verified net savings. The measure has a 100% verified gross realization rate, but the verified net savings is higher than the tracked savings.

**Recommendation 1.** Update the ex ante net savings in the tracking data to use the deemed direct install NTG in effect for the program year to calculate the net savings for all the kits.

## 5.3 Custom Findings and Recommendations

Evaluation project reviews were conducted for two sampling waves during calendar year 2021, and in one final sample drawn from end of program year final data.

**Finding 2.** Rooftop pipe insulation thickness for process insulation projects (4975560 and 7758665) did not follow the sizes from the invoices found in contractor notes. Guidehouse adjusted insulation thickness according to contractor notes. We also determined operating hours were 8,766 hours year-round.

**Recommendation 2.** Use contractor notes, when available, to evaluate the thickness of rooftop pipe insulation. For year-round operations, use 8,766 hours of operation.



**Finding 3.** Boiler efficiencies for process insulation project (7363467) used a custom value that did not follow the known equipment specifications or the TRM v9. Guidehouse adjusted the efficient boiler efficiency to follow the specs provided, 94.6%. The evaluation team could not determine the pipe/fitting quantity and nominal pipe sizes from the Mechanical Room Piping Layout Schematic or documentation found in the tracking system.

**Recommendation 3.** Use primary data or actual installed equipment specifications to calculate savings when possible.

**Recommendation 4.** Ensure tracked project documentation captures details of pipe/fitting quantity, nominal pipe size, and other material characteristics.

**Finding 4.** Project 7578014 upgraded the existing building automation system (BAS), improved space-conditioning controls and included demand control ventilation. The project documentation did not provide primary data on building area and zone occupancy. The evaluation team used heating efficiency based on the Initial Application (85% for boiler #1 and 86% for boiler #2). The adjusted values result in a realization rate of 101%.

**Recommendation 5.** Ensure primary data on building area and zone occupancy are provided in project documentation.

### 5.4 Historical Realization Rates and Net-to-Gross (NTG) Values

Table 5-2 shows the historical gross realization rates and NTG values for the Small Business Program. Beginning in GPY4 (2015), the NTG values shown are a savings weighted average from the various measures and deemed NTGs that vary by measure and program path.

**Table 5-2. Historical Realization Rates and NTG Values**

Program Year	PGL Verified Gross RR	NSG Verified Gross RR	PGL NTG	NSG NTG
GPY1 (2011-12)	99%	99%	0.99	0.99
GPY2 (2012-13)	102%	102%	0.99	0.99
GPY3 (2013-14)	100%	102%	0.99	0.99
GPY4 (2014-15)	106%	102%	0.94	0.99
GPY5 (2015-16)	98%	100%	0.93	0.93
GPY6 (2016-2017)	112%	153%	0.93	0.93
2018	101%	100%	0.82	0.92
2019	100%	100%	0.92	0.93
2020	100%	99%	0.92	0.92
2021	100%	103%	0.92	0.92

Source: Guidehouse evaluation research.

## Appendix A. Impact Analysis Methodology

Guidehouse determined verified gross savings for each program measure by:

1. Reviewing the savings algorithm inputs in the 2021 MMDB, wherever necessary, for agreement with TRM v9.0<sup>1</sup> or evaluation research for non-deemed measures.
2. Validating that the savings algorithm was applied correctly.
3. Cross-checking per-unit savings values in the tracking data with the verified values in the measure workbook, or in Guidehouse's calculations if the workbook did not agree with the TRM.
4. Multiplying the verified per-unit savings value by the quantity reported in the tracking data.
5. Conducting engineering file review of custom projects.

### Engineering Review of Project Files

For custom projects, an in-depth application review is performed to assess the engineering methods, parameters and assumptions used to generate all ex ante impact estimates. For each measure in the sampled project, engineers estimated verified gross savings based on their review of documentation and engineering analysis.

To support this review, the implementation contractor provided project documentation in electronic format for each sampled project. Documentation included some or all scanned files of hardcopy application forms and supporting documentation from the applicant (invoices, measure specification sheets, and vendor proposals), pre-inspection reports and photos, post inspection reports and photos, and calculation spreadsheets.

A census of Custom projects was reviewed for 2021.

Table A-1 summarizes the results of evaluation verification of custom projects from 2021.

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<sup>1</sup> Because the Illinois TRM provides multiple options for selecting input assumptions, Franklin Energy produces a "Master Measure Database" spreadsheet that documents their approach to compliance with the Illinois TRM.

**Table A-1. Summary of Custom Project M&V Results**

Project ID	Utility	Measure Description	Gross RR	Evaluation Wave	Summary of Adjustments
4101065	PGL	Boiler Combustion Controls	100%	1	OK
7578014	PGL	Demand Control Ventilation	100%	Final Data	Evaluator used heating efficiency based on Initial Application.
7578014	PGL	HVAC - Other	101%	Final Data	
7578014	PGL	Space Conditioning Controls	101%	Final Data	
4975560	NSG	Process - Insulation >212 F (&100-212 F)	118%	Final Data	Updated city water temperature to 54.1°F based on TRM value. Rooftop piping insulation thickness was revised based on contractor invoice.
6503667	NSG	Process - Insulation >212 F (&100-212 F)	100%	1	OK
7363467	NSG	Process - Insulation 100-212 F	88%	Final Data	Implementer used default equipment efficiency when actual equipment specs were known.
7529657	NSG	Process - Insulation >212 F	100%	Final Data	OK
7758665	NSG	Process - Insulation >212 F (&100-212 F)	110%	1	Use TRM default efficiency value for steam boilers = 80.7%. Updated city water temperature to 54.1°F based on TRM value. Rooftop piping insulation thickness was revised based on contractor invoice. Equivalent Length revised based on TRM v9
7284107	NSG	Process - Other	100%	Final Data	OK

Source: PGL and NSG tracking data and Guidehouse team analysis.



## 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. 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**

Program Path	Research Category	Units	Quantity	Effective Useful Life	Ex Ante Gross Savings (Therms)	Verified Gross Savings (Therms)	Verified Net Savings (Therms)
Direct Install / Kits	Kit	Each	183	5.0	19,185	19,184	18,225
	Boiler Reset Controls	MBH	400	20.0	537	537	494
	Boiler Tune Up - Process	MBH	14,163	3.0	14,485	14,485	13,326
	Boiler Tune Up - Space Heating	MBH	58,225	3.0	27,575	27,572	25,366
	Condensing Unit Heater	MBH	1,150	12.0	2,039	2,039	1,876
	DCV - Gas Heating	Square Feet	247,467	10.0	16,828	16,828	15,482
	DCV - Kitchen	HP	3	15.0	2,322	2,322	2,136
	DHW Storage Tank Insulation	Square Feet	187	15.0	1,001	1,001	921
	Direct Fired Heaters	MBH	2,332	15.0	5,871	5,870	5,400
	Prescriptive / PTA	Energy Star Fryer	Each	13	15.0	6,603	6,603
Energy Star Dishwasher - Single Door (High Temp)		Each	1	15.0	294	294	270
High Efficiency Boiler		MBH	12,866	25.0	10,505	10,505	9,665
High Efficiency Furnace		Each	16	16.5	3,953	3,953	3,637
High Speed Washer		lbs-capacity	2,660	7.0	12,366	12,365	11,376
Large Gas Water Heater		MBH	598	15.0	430	430	396
Linkageless Controls		MBH	56,600	16.0	31,850	31,853	29,305
Modulating Dryers		Each	33	14.0	7,594	7,594	6,987
Pipe Insulation	Linear Feet	4,420	15.0	35,370	35,368	32,539	



Program Path	Research Category	Units	Quantity	Effective Useful Life	Ex Ante Gross Savings (Therms)	Verified Gross Savings (Therms)	Verified Net Savings (Therms)
	Prescriptive Change Steam Trap	Project	2	6.0	14,691	14,691	13,516
	Programmable Thermostat	Each	9	11.0	1,803	1,802	1,730
	Smart Thermostat	Each	50	11.0	9,813	9,813	9,421
	Steam Traps - Dry Cleaner	Each	336	6.0	217,743	217,732	200,314
	Steam Traps - HVAC Repair/Rep	Each	969	6.0	367,143	367,107	337,739
	Steam Traps - Industrial Rep	Each	8	6.0	15,117	15,116	13,907
	Boiler Chemical Descaling LP	MBH	16,800	6.0	7,047	7,048	6,484
	Ozone Laundry	CFM	1,020	10.0	31,332	31,337	28,830
Custom	Boiler Combustion Controls	Project	1	18.0	7,055	7,055	6,491
	Demand Control Ventilation	Project	1	15.0	4,408	4,408	4,055
	HVAC - Other	Project	1	15.0	22,007	22,166	20,393
	Space Conditioning Controls	Project	1	15.0	9,733	9,803	9,019
<b>Total or Weighted Average</b>				<b>7.8</b>	<b>906,698</b>	<b>906,884</b>	<b>835,373</b>

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



**Table B-2. Verified Cost Effectiveness Inputs – NSG**

Program Path	Research Category	Units	Quantity	Effective Useful Life	Ex Ante Gross Savings (Therms)	Verified Gross Savings (Therms)	Verified Net Savings (Therms)
Direct Install / Kits	Kits	Each	16	5.0	1,677	1,677	1,593
	Pre Rinse Sprayer	Each	2	5.0	475	475	437
	Pre Rinse Sprayer	Each	2	5.0	490	490	466
	Boiler Reset Controls	MBH	1,056	20.0	1,418	1,418	1,304
	Boiler Tune Up - Process	MBH	9,217	3.0	9,426	9,427	8,672
	Boiler Tune Up - Space Heating	MBH	1,056	3.0	500	500	460
	Business Furnace Tune-up	MBH	1,930	3.0	692	692	636
	DHW Storage Tank Insulation	Square Feet	101	15.0	541	541	498
	Energy Star Fryer	Each	11	15.0	5,587	5,587	5,140
Prescriptive / PTA	High Efficiency Boiler	MBH	1,701	25.0	867	867	798
	High Efficiency Furnace	Each	2	16.5	494	494	455
	Large Gas Water Heater	MBH	200	15.0	144	144	132
	Modulating Dryers	Each	44	14.0	10,125	10,126	9,316
	Pipe Insulation	Linear Feet	11,208	15.0	36,534	36,535	33,612
	Programmable Thermostat	Each	2	11.0	401	401	385
	Smart Thermostat	Each	16	11.0	3,140	3,140	3,014
	Steam Traps - Dry Cleaner	Each	214	6.0	138,681	138,675	127,581
	Steam Traps - Industrial Rep	Each	5	6.0	36,674	36,674	33,740
	Custom	Process - Insulation	Project	8	15.0	134,182	148,515
Process - Other		Project	1	15.0	46,355	46,355	42,646
<b>Total or Weighted Average</b>				<b>11.1</b>	<b>427,928</b>	<b>442,257</b>	<b>407,083</b>

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