



# Home Energy Jumpstart Impact Evaluation Report

**Energy Efficiency Plan:  
Plan Year 2019  
(1/1/2019-12/31/2019)**

**Presented to  
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) 2019 Home Energy Jumpstart (HEJ) program. It presents a summary of the energy impacts for the total program and broken out by relevant measure and program structure details. The appendix presents the impact analysis methodology. Program year 2019 covers January 1, 2019 through December 31, 2019.

## 2. PROGRAM DESCRIPTION

The 2019 HEJ Program is an assessment and direct install program jointly implemented by ComEd and Peoples Gas and North Shore Gas (PGL and NSG) with Franklin Energy Services (Franklin Energy) operating as implementer of the program. This report focuses solely on the natural gas savings from the program. Savings from electric measures are included in a separate evaluation report delivered to ComEd.

The HEJ Program seeks to secure energy savings through direct installation of low-cost efficiency measures, such as: water efficient showerheads and faucet aerators, pipe insulation, electricity-saving devices, and programmable thermostats at eligible single-family (SF) residences including condominiums (Condo). The program also secures energy savings through installation of smart thermostats with co-pays. In addition, the program performs an assessment of the major retrofit opportunities (e.g., furnace, boiler, air conditioning, insulation, and air sealing) and heightens awareness of the homeowners about available additional efficiency programs offered by ComEd, Peoples Gas and North Shore Gas.

The PGL program had 5,122 participants in 2019 (including those that received an assessment or other program services but did not result in claimed natural gas energy savings) and completed gas energy saving projects for 4,178 unique accounts as shown in the following table.

**Table 2-1. 2019 Volumetric Summary for PGL**

Participation	Total
All Participants *	5,122
Participants with Gas Energy Saving Projects †	4,178
Total Projects ‡	4,370

\* Participants are defined as the number of unique account names, including accounts that received an assessment or other program services but did not have natural gas energy savings.

† Participants with gas energy saving projects are defined as unique account names with claimed natural gas energy savings.

‡ Projects are defined as the number of unique Project IDs.

Source: Peoples Gas tracking data and Guidehouse team analysis.

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

**Table 2-2. 2019 Installed Measure Quantities for PGL**

Measure	Quantity Unit	Installed Quantity
Boiler Pipe Insulation	Linear Feet	182
Faucet Aerator - Bathroom	Each	1,521
Faucet Aerator - Bathroom (Condo)	Each	206
Faucet Aerator - Kitchen	Each	1,074
Faucet Aerator - Kitchen (Condo)	Each	86
Pipe Insulation – Domestic Hot Water (DHW) Outlet	Linear Feet	3,621
Showerhead	Each	3,386
Showerhead (Condo)	Each	326
Smart Thermostat - Manual Baseline (Condo)	Each	20
Smart Thermostat - Manual Baseline (SF)	Each	176
Smart Thermostat - Programmable Baseline (Condo)	Each	38
Smart Thermostat - Programmable Baseline (SF)	Each	338
Thermostat - Programmable Boiler/Furnace	Each	914
Thermostat - Re-Program Boiler/Furnace	Each	1,279

Source: People Gas tracking data and Guidehouse team analysis.

The NSG program had 1,394 participants in 2019 (including those that received an assessment or other program services but did not result in claimed natural gas energy savings) and completed gas energy saving projects for 1,048 unique accounts as shown in the following table.

**Table 2-3. 2019 Volumetric Summary for NSG**

Participation	Total
All Participants *	1,394
Participants with Gas Energy Saving Projects †	1,048
Total Projects ‡	1,059

\* Participants are defined as the number of unique account names, including accounts that received an assessment or other program services but did not have natural gas energy savings.

† Participants with gas energy saving projects are defined as unique account names with claimed natural gas energy savings.

‡ Projects are defined as the number of unique Project IDs.

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

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

**Table 2-4. 2019 Installed Measure Quantities for NSG**

Measure	Quantity Unit	Installed Quantity
Boiler Pipe Insulation	Linear Feet	33
Faucet Aerator - Bathroom	Each	817
Faucet Aerator - Bathroom (Condo)	Each	18
Faucet Aerator - Kitchen	Each	103
Faucet Aerator - Kitchen (Condo)	Each	1
Pipe Insulation - DHW Outlet	Linear Feet	1,819
Showerhead	Each	1,193
Showerhead (Condo)	Each	17
Smart Thermostat - Manual Baseline (Condo)	Each	1
Smart Thermostat - Manual Baseline (SF)	Each	63
Smart Thermostat - Programmable Baseline (SF)	Each	116
Thermostat - Programmable Boiler/Furnace	Each	96
Thermostat - Re-Program Boiler/Furnace	Each	311

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



### 3. SAVINGS SUMMARY

Table 3-1 summarizes the energy savings the PGL HEJ program achieved in 2019. Thermostat measures accounted for most of the program savings.

**Table 3-1. 2019 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)
Re-program Thermostats	85,855	98%	84,359	0.80	67,487
Programmable Thermostats	62,330	97%	60,518	0.88	53,256
Pipe Insulation	3,655	100%	3,665	0.88	3,225
Advanced Thermostats	37,128	97%	36,054	NA§	36,054
Aerators, Showerheads	38,616	100%	38,613	1.02	39,386
<b>Total 2019</b>	<b>227,584</b>	<b>98%</b>	<b>223,209</b>	<b>NA</b>	<b>199,408</b>

\* Realization Rate (RR) is the ratio of verified gross savings to ex ante gross savings, based on evaluation research findings.

† Net-to-Gross (NTG) is the ratio of verified net savings to verified gross savings. The NTG is a deemed value. Source: PGL-NSG\_NTG\_History\_and\_2019\_Recommendations\_2018-10-01\_Final Faucet Aerator and Showerhead Correction 2019-04-12.xlsx, which is to be found on the Illinois SAG web site: <http://ilsag.info/net-to-gross-framework.html>.

§ The Illinois TRM version 7.0 algorithm for advanced thermostats calculates net savings – no further NTG adjustment is required. Source: Peoples Gas program tracking data and Guidehouse team analysis.

Table 3-2 summarizes the energy savings the NSG HEJ Program achieved in 2019. Thermostat measures accounted for most of the program savings.

**Table 3-2. 2019 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)
Re-program Thermostats	19,529	98%	19,164	0.80	15,331
Programmable Thermostats	6,370	96%	6,141	0.88	5,404
Pipe Insulation	1,812	100%	1,817	0.88	1,599
Advanced Thermostats	12,158	94%	11,454	NA§	11,454
Aerators, Showerheads	11,810	100%	11,813	1.02	12,049
<b>Total 2019</b>	<b>51,679</b>	<b>98%</b>	<b>50,389</b>	<b>NA</b>	<b>45,837</b>

\* Realization Rate (RR) is the ratio of verified gross savings to ex ante gross savings, based on evaluation research findings.

† Net-to-Gross (NTG) is the ratio of verified net savings to verified gross savings. The NTG is a deemed value. Source: PGL-NSG\_NTG\_History\_and\_2019\_Recommendations\_2018-10-01\_Final Faucet Aerator and Showerhead Correction 2019-04-12.xlsx, which is to be found on the Illinois SAG web site: <http://ilsag.info/net-to-gross-framework.html>.

§ The Illinois TRM version 7.0 algorithm for advanced thermostats calculates net savings – no further NTG adjustment is required. Source: North Shore Gas program tracking data and Guidehouse team analysis.



#### 4. PROGRAM SAVINGS BY MEASURE

The PGL program includes 14 measures as shown in the following table. The thermostat and showerhead measures contributed the most savings.

**Table 4-1. 2019 Annual Energy Savings by Measure for PGL**

Research Category	Ex Ante Gross Savings (Therms)	Verified Gross RR	Verified Gross Savings (Therms)	NTG†	Verified Net Savings (Therms)
Boiler Pipe Insulation	75	101%	76	0.88	67
Faucet Aerator - Bathroom	1,314	100%	1,315	1.02	1,341
Faucet Aerator - Bathroom (Condo)	324	99%	321	1.02	327
Faucet Aerator - Kitchen	2,997	100%	2,993	1.02	3,053
Faucet Aerator - Kitchen (Condo)	224	98%	220	1.02	224
Pipe Insulation - DHW Outlet	3,580	100%	3,589	0.88	3,159
Showerhead	30,066	100%	30,075	1.02	30,676
Showerhead (Condo)	3,691	100%	3,689	1.02	3,763
Smart Thermostat - Manual Baseline (Condo)	1,150	95%	1,092	NA§	1,092
Smart Thermostat - Manual Baseline (SF)	15,565	97%	15,167	NA§	15,167
Smart Thermostat - Programmable Baseline (Condo)	1,390	99%	1,372	NA§	1,372
Smart Thermostat - Programmable Baseline (SF)	19,023	97%	18,422	NA§	18,422
Thermostat - Programmable Boiler/Furnace	62,330	97%	60,518	0.88	53,256
Thermostat - Re-Program Boiler/Furnace	85,855	98%	84,359	0.80	67,487
<b>Total 2019</b>	<b>227,584</b>	<b>98%</b>	<b>223,209</b>	<b>NA</b>	<b>199,408</b>

Note: Sum of savings may not equal the total due to rounding.

\* Realization Rate (RR) is the ratio of verified gross savings to ex ante gross savings, based on evaluation research findings.

† Net-to-Gross (NTG) is the ratio of verified net savings to verified gross savings. The NTG is a deemed value. Source: PGL-NSG\_NTG\_History\_and\_2019\_Recommendations\_2018-10-01\_Final Faucet Aerator and Showerhead Correction 2019-04-12.xlsx, which is to be found on the Illinois SAG web site: <http://ilsag.info/net-to-gross-framework.html>.

§ The Illinois TRM version 7.0 algorithm for advanced thermostats calculates net savings – no further NTG adjustment is required.

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

The NSG program includes 13 measures as shown in the following table. The thermostat and showerhead measures contributed the most savings.



**Table 4-2. 2019 Annual Energy Savings by Measure for NSG**

Research Category	Ex Ante Gross Savings (Therms)	Verified Gross RR*	Verified Gross Savings (Therms)	NTG†	Verified Net Savings (Therms)
Boiler Pipe Insulation	14	100%	14	0.88	12
Faucet Aerator - Bathroom	706	100%	706	1.02	721
Faucet Aerator - Bathroom (Condo)	28	100%	28	1.02	29
Faucet Aerator - Kitchen	287	100%	287	1.02	293
Faucet Aerator - Kitchen (Condo)	3	100%	3	1.02	3
Pipe Insulation - DHW Outlet	1,798	100%	1,803	0.88	1,587
Showerhead	10,593	100%	10,596	1.02	10,808
Showerhead (Condo)	192	100%	192	1.02	196
Smart Thermostat - Manual Baseline (Condo)	57	100%	57	NA§	57
Smart Thermostat - Manual Baseline (SF)	5,572	93%	5,159	NA§	5,159
Smart Thermostat - Programmable Baseline (SF)	6,528	96%	6,238	NA§	6,238
Thermostat - Programmable Boiler/Furnace	6,370	96%	6,141	0.88	5,404
Thermostat - Re-Program Boiler/Furnace	19,529	98%	19,164	0.80	15,331
<b>Total 2019</b>	<b>51,679</b>	<b>98%</b>	<b>50,389</b>	<b>NA</b>	<b>45,837</b>

Note: Sum of savings may not equal the total due to rounding.

\* Realization Rate (RR) is the ratio of verified gross savings to ex ante gross savings, based on evaluation research findings.

† Net-to-Gross (NTG) is the ratio of verified net savings to verified gross savings. The NTG is a deemed value. Source: PGL-

NSG\_NTG\_History\_and\_2019\_Recommendations\_2018-10-01\_Final Faucet Aerator and Showerhead Correction 2019-04-12.xlsx, which is to be found on the Illinois SAG web site: <http://ilsag.info/net-to-gross-framework.html>.

§ The Illinois TRM version 7.0 algorithm for advanced thermostats calculates net

Source: North Shore Gas program 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 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 discussion of all measures with realization rates above or below 100 percent. Appendix 1 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)	Realization Rate	Data Source(s)
Boiler Pipe Insulation	Linear Feet	0.41	0.42	101%	Illinois TRM, v7.0*, Section 5.3.2 and PGL/NSG Program Tracking Data (PTD)†
Faucet Aerator - Bathroom	Each	0.86	0.86	100%	IL TRM v7.0 - Section 5.4.4 and PTD
Faucet Aerator - Bathroom (Condo)	Each	1.57	1.56	99%	IL TRM v7.0 - Section 5.4.4 and PTD
Faucet Aerator - Kitchen	Each	2.79	2.79	100%	IL TRM v7.0 - Section 5.4.4 and PTD
Faucet Aerator - Kitchen (Condo)	Each	2.61	2.55	98%	IL TRM v7.0 - Section 5.4.4 and PTD
Pipe Insulation - DHW Outlet	Linear Feet	0.99	0.99	100%	IL TRM v7.0 - Section 5.4.1 and PTD
Showerhead	Each	8.88	8.88	100%	IL TRM v7.0 - Section 5.4.5 and PTD
Showerhead (Condo)	Each	11.32	11.32	100%	IL TRM v7.0 - Section 5.4.5 and PTD
Smart Thermostat - Manual Baseline (Condo)	Each	57.49	57.49	100%‡	IL TRM v7.0 - Section 5.3.16 and PTD
Smart Thermostat - Manual Baseline (SF)	Each	88.44	88.44	100%‡	IL TRM v7.0 - Section 5.3.16 and PTD
Smart Thermostat - Programmable Baseline (Condo)	Each	36.58	36.58	100%‡	IL TRM v7.0 - Section 5.3.16 and PTD
Smart Thermostat - Programmable Baseline (SF)	Each	56.28	56.28	100%‡	IL TRM v7.0 - Section 5.3.16 and PTD
Thermostat - Programmable Boiler/Furnace	Each	68.04	68.02	97%	IL TRM v7.0 - Section 5.3.11 and PTD
Thermostat - Re-Program Boiler/Furnace	Each	66.29	66.28	98%	IL TRM v7.0 - Section 5.3.11 and PTD

\* State of Illinois Technical Reference Manual version 7.0 from <http://www.ilsag.info/technical-reference-manual.html>.

† Program Tracking Data (PTD) provided by Peoples Gas and North Shore Gas, extract dated January 30, 2020.

‡ Measures' unit savings realization rates for thermostat measures differ from total savings realization rates because Guidehouse did not allow a single home to claim savings for more than one thermostat measure. See "5.2.3 Thermostats" for details.

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



## 5.2 Other Findings and Recommendations

### 5.2.1 Boiler Pipe Insulation

The savings calculation method for boiler pipe insulation is shown in the equation below from IL TRM (v7.0) Section 5.3.2 Boiler Pipe Insulation:

$$\Delta\text{Therm} = (((1/R_{\text{exist}} * C_{\text{exist}}) - (1/R_{\text{new}} * C_{\text{new}})) * \text{FLH}_{\text{heat}} * L * \Delta T) / \eta_{\text{Boiler}} / 100,000$$

The MMDB estimates gross savings for Hot Water (HW) boiler-supply pipe insulation at 0.42 therms per linear feet but the gross savings value for HW boiler outlet pipe is 0.41 in the tracking data (0.3611 net therms in the tracking data / 0.88 NTG). Guidehouse estimated the verified savings as 0.42 therms per linear feet using the TRM (v7.0). The rounding difference results in a realization rate of 101 percent.

**Recommendation 1:** The finding was a minor change but Guidehouse recommends that Franklin Energy check the algorithm that feeds into the tracking data to ensure consistency of savings with the MMDB and the TRM.

### 5.2.2 Aerators

Guidehouse estimated 100% gross realization for the single-family bathroom and kitchen faucet aerators. The verified savings for multi-family (Condo) aerators was slightly below 100%. Table 5-2 shows the savings inputs and the difference between the verified and ex ante gross unit savings. The faucet aerator GPM\_base values (baseline gallons per minute) in TRM v7.0 are specified in a table as 1.53 GPM for bathroom and 1.63 GPM for kitchen aerators. These GPM values match the 2019 MMDB, however the tracking data for Condos was based on slightly higher non-rounded GPMs that were calculated from TRM v6.0 algorithms and were used in the 2018 MMDB. Guidehouse based 2019 verified savings for aerators on the GPM\_base values in TRM v7.0 and the 2019 MMDB. The impact on program-level verified savings was very small because relatively few aerators were installed in Condos.

Table 5-2. Verified Inputs and Savings for Aerator Measures

Measure_Name	GPM_base	GPM_low	L_base, L_low	House hold	DF	FPH	EPG_gas	ISR	Ex Ante Unit Therm Savings	Verified Unit Therm Savings	Gross RR
Aerator – Bathroom (SF)	1.53	0.969	1.60	2.56	0.90	2.83	0.00341	0.95	0.86	0.86	100%
Aerator - Bathroom – CONDO	1.53	0.969	1.60	2.10	0.90	1.50	0.00397	0.95	1.57	1.56	99%
Aerator – Kitchen (SF)	1.63	1.406	4.50	2.56	0.75	1.00	0.00415	0.95	2.79	2.79	100%
Aerator - Kitchen - CONDO	1.63	1.406	4.50	2.10	0.75	1.00	0.00484	0.91	2.61	2.55	98%

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

**Recommendation 2:** Guidehouse recommends that Franklin update the tracking system faucet aerator inputs for multifamily measures to correct the ex ante unit savings.



5.2.3 Thermostats

The per unit ex ante savings matched the per unit verified savings calculation for the thermostat measure types. Guidehouse found instances where a single "Account\_Name" and "Site\_Address" claimed savings for more than one thermostat. Per IL TRM v7.0, savings for only one thermostat can be claimed per household. This occurred in about five percent of projects, with 115 unique Project IDs. Example Project IDs include: 4837540, 4722240, 4946461, 4703840, 4884231, 4884223, 4096175.

In instances where a single "Account\_Name" and "Site\_Address" (household) claimed savings for more than one thermostat, Guidehouse divided the ex ante quantity of each thermostat type by the total quantity of thermostats installed at that household to average the savings. For example, if one household reports therms savings for 1 programmable thermostat and 1 advanced thermostat, each of these verified quantities will be weighted 0.5 for the household verified savings calculation. These ex ante and weighted verified quantities are provided in Table 5-3 and Table 5-4.

Table 5-3. Adjusted Quantities for Thermostat Measures for PGL

Measure_Name	Ex Ante Quantity	Weighted Verified Quantity
Tstat – Advanced/MANUAL	176	172
Tstat – Advanced/MANUAL - CONDO	20	19
Tstat – Advanced/PROGRAMMABLE	338	327
Tstat – Advanced/PROGRAMMABLE – CONDO	38	37.5
Tstat – Programmable Boiler	180	174
Tstat – Programmable Furnace	734	713
Tstat – Reprogram Boiler	206	203
Tstat – Reprogram Furnace	1,073	1,054

Source: Peoples Gas tracking data and Guidehouse team analysis.

Table 5-4. Adjusted Quantities for Thermostat Measures for NSG

Measure_Name	Ex Ante Quantity	Weighted Verified Quantity
Tstat – Advanced/MANUAL	63	58.3
Tstat – Advanced/MANUAL - CONDO	1	1
Tstat – Advanced/PROGRAMMABLE	116	111
Tstat – Programmable Boiler	13	12.3
Tstat – Programmable Furnace	83	80.3
Tstat – Reprogram Boiler	5	5
Tstat – Reprogram Furnace	306	300

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

**Recommendation 3:** Guidehouse recommends that Franklin Energy claim savings for only one programmable or one advanced thermostat per household or site.



### 5.3 Historical Realization Rates and NTG Values

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

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

Program Year	PGL Verified Gross RR	NSG Verified Gross RR	PGL NTG	NSG NTG
GPY1	100%	100%	0.90	0.90
GPY2	100%	98%	0.90	0.90
GPY3	100%	100%	0.90	0.90
GPY4	100%	102%	0.95	0.92
GPY5	103%	100%	0.95	0.95
GPY6	100%	100%	0.90	0.92
2018	107%	110%	0.84	0.86
2019	98%	98%	0.89	0.91

Source: Guidehouse evaluation research.



## 6. APPENDIX 1. IMPACT ANALYSIS METHODOLOGY

Guidehouse compared the savings calculation method in the 2019 tracking data to Franklin Energy’s “Master Measure Database” file (MMDB)<sup>1</sup>, which feeds into calculating the tracking data savings, and to IL TRM-based savings values. Guidehouse verified that the IL TRM algorithms were correctly applied in the MMDB. Guidehouse checked that measure inputs matched deemed IL TRM inputs and validated custom inputs. To be eligible, an IL TRM measure must meet the physical, operational, and baseline characteristics as defined in the applicable version of the IL TRM.<sup>2</sup>

Guidehouse reviewed the program tracking data drawn from a January 30, 2020 extract to substantiate the type and quantity of measures installed. Verified gross realization rates are calculated by dividing the verified gross savings by the ex ante gross savings.

When converting ex ante gross to ex ante net savings for tracking and reporting, Guidehouse used the following equations for HEJ in 2019:

2019 Ex Ante Net = Values reported in the 2019 program tracking data  
2019 Ex Ante Net = 2019 Ex Ante Gross \* 2019 Deemed Measure NTG  
2019 Ex Ante Gross = 2019 Ex Ante Net / 2019 Deemed Measure NTG

**Table 6-1. 2019 Measure-Level Net to Gross (NTG) Values**

Measure Category	NTG
Pipe Insulation	0.88
Faucet Aerator	1.02
Showerhead	1.02
Smart Thermostats	NA
Programmable Thermostat	0.88
Reprogram Thermostat	0.80

Source: PGL-NSG\_NTG\_History\_and\_2019\_Recommendations\_2018-10-01\_Final Faucet Aerator and Showerhead Correction 2019-04-12.xlsx which is to be found on the Illinois SAG web site: <http://ilsag.info/net-to-gross-framework.html>.

<sup>1</sup> File name: RESIDENTIAL MMDB PY8, produced by Franklin Energy.

<sup>2</sup> Illinois Statewide Technical Reference Manual for Energy Efficiency Version 7.0 from <http://www.ilsag.info/technical-reference-manual.html>



## 7. APPENDIX 2. PROGRAM-SPECIFIC INPUTS FOR THE ILLINOIS TRC

Table 7-1 and Table 7-2 show the Total Resource Cost (TRC) cost-effectiveness analysis inputs available at the time of drafting this impact evaluation report for Peoples Gas and North Shore Gas. 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.

**Table 7-1. Total Resource Cost Savings Summary for PGL**

Measure	Units	Quantity	Effective Useful Life	Ex Ante Gross Savings (Therms)	Verified Gross Savings (Therms)	Verified Net Savings (Therms)
Boiler Pipe Insulation	Lin. Feet	182	15	75	76	67
Faucet Aerator - Bathroom	Each	1,521	10	1,314	1,315	1,341
Faucet Aerator - Bathroom (Condo)	Each	206	10	324	321	327
Faucet Aerator - Kitchen	Each	1,074	10	2,997	2,993	3,053
Faucet Aerator - Kitchen (Condo)	Each	86	10	224	220	224
Pipe Insulation - DHW Outlet	Lin. Feet	3,621	15	3,580	3,589	3,159
Showerhead	Each	3,386	10	30,066	30,075	30,676
Showerhead (Condo)	Each	326	10	3,691	3,689	3,763
Smart Thermostat - Manual Baseline (Condo)	Each	20	10	1,150	1,092	1,092
Smart Thermostat - Manual Baseline (SF)	Each	176	10	15,565	15,167	15,167
Smart Thermostat - Programmable Baseline (Condo)	Each	38	10	1,390	1,372	1,372
Smart Thermostat - Programmable Baseline (SF)	Each	338	10	19,023	18,422	18,422
Thermostat - Programmable Boiler/Furnace	Each	914	5	62,330	60,518	53,256
Thermostat - Re-Program Boiler/Furnace	Each	1,279	2	85,855	84,359	67,487
<b>Total/Weighted Average</b>			<b>5.7</b>	<b>227,584</b>	<b>223,209</b>	<b>199,408</b>

Source: Peoples Gas tracking data and Guidehouse team analysis.

**Table 7-2. Total Resource Cost Savings Summary for NSG**

Measure	Units	Quantity	Effective Useful Life	Ex Ante Gross Savings (Therms)	Verified Gross Savings (Therms)	Verified Net Savings (Therms)
Boiler Pipe Insulation	Lin. Feet	33	15	14	14	12
Faucet Aerator - Bathroom	Each	817	10	706	706	721
Faucet Aerator - Bathroom (Condo)	Each	18	10	28	28	29
Faucet Aerator - Kitchen	Each	103	10	287	287	293
Faucet Aerator - Kitchen (Condo)	Each	1	10	3	3	3
Pipe Insulation - DHW Outlet	Lin. Feet	1,819	15	1,798	1,803	1,587
Showerhead	Each	1,193	10	10,593	10,596	10,808
Showerhead (Condo)	Each	17	10	192	192	196
Smart Thermostat - Manual Baseline (Condo)	Each	1	10	57	57	57
Smart Thermostat - Manual Baseline (SF)	Each	63	10	5,572	5,159	5,159
Smart Thermostat - Programmable Baseline (SF)	Each	116	10	6,528	6,238	6,238
Thermostat - Programmable Boiler/Furnace	Each	96	5	6,370	6,141	5,404
Thermostat - Re-Program Boiler/Furnace	Each	311	2	19,529	19,164	15,331
<b>Total/Weighted Average</b>			<b>6.5</b>	<b>51,679</b>	<b>50,389</b>	<b>45,837</b>

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