



# Home Energy Rebates 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 Rebate (HER) programs. 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 HER program provides rebates to PGL and NSG residential customers who make energy-saving improvements to their homes. The program is composed of two distinct offerings: 1) replacement of HVAC and other equipment, and 2) weatherization improvements. The HVAC and other equipment offering incentivizes customer-installed or contractor-installed energy efficient furnaces, boilers, and water heaters, as well as customer-installed programmable thermostats. The weatherization offering incentivizes trade ally installed home insulation measures, air sealing and duct sealing. Franklin Energy Services (Franklin Energy) implements both offerings for both utilities. In 2019, ComEd processed rebates for advanced thermostats and PGL and NSG reimbursed ComEd for the gas portion (“purchased therms”), removing the need for participants to complete separate rebate applications for gas and electric.

The PGL HER program had 13,971 participants in 2019 and completed 13,983 projects as shown in the following table.

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

Participation	HVAC	Weatherization	Total
Participants *	13,828	143	13,971
Installed Projects †	13,839	144	13,983
Count of Measure Types	7	6	13

\* Participants are defined as count of unique account numbers. HVAC participants may be double counted due to addition of purchased Smart Thermostats.

† Installed Projects are defined as count of unique project IDs in tracking data

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**

Program Path	Measure	Quantity Unit	Installed Quantity
HVAC	Gas Water Heater - Indirect	Each	1
	Gas Water Heater - Tankless Whole House	Each	68
	High Efficiency Boiler	MBH	5,049
	High Efficiency Boiler -Two-in-One	Each	40
	High Efficiency Furnace	Each	1,238
	Programmable Thermostat - Furnace	Each	5
	Smart Thermostat (ComEd Processed Rebate)	Each	12,527
Weatherization	Air Sealing	CFM	20,104
	Air Sealing with Attic Insulation	CFM	129,667
	Attic Insulation	Sq. Ft	112,818
	Duct Sealing	CFM	2,096
	Foundation Wall Insulation	Sq. Ft	462
	Wall Insulation	Sq. Ft	21,157

Source: People Gas tracking data and Guidehouse team analysis.

The NSG HER program had 3,523 participants in 2019 and completed 3,542 projects as shown in the following table.

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

Participation	HVAC	Weatherization	Total
Participants *	3,318	205	3,523
Installed Projects †	3,337	205	3,542
Count of Measure Types	6	6	12

\* Participants are defined as count of unique account numbers. HVAC participants may be double counted due to addition of purchased Smart Thermostats.

† Installed Projects are defined as count of unique project IDs in tracking data

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**

Program Path	Measure	Quantity Unit	Installed Quantity
HVAC	Gas Water Heater - Tankless Whole House	Each	37
	High Efficiency Boiler	MBH	5,632
	High Efficiency Boiler -Two-in-One	Each	14
	High Efficiency Furnace	Each	1,168
	Programmable Thermostat - Furnace	Each	6
	Smart Thermostat (ComEd Processed Rebate)	Each	2,183
	Weatherization	Air Sealing	CFM
Air Sealing with Attic Insulation		CFM	94,224
Attic Insulation		Sq. Ft	112,888
Duct Sealing		CFM	29,404
Foundation Wall Insulation		Sq. Ft	89
Wall Insulation	Sq. Ft	3,161	

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

### 3. SAVINGS SUMMARY

Table 3-1 summarizes the energy savings the PGL HER Program achieved by path in 2019.

**Table 3-1. 2019 Annual Energy Savings Summary for PGL**

Program	Ex Ante Gross Savings (Therms)	Verified Gross RR*	Verified Gross Savings (Therms)	NTG†	Verified Net Savings (Therms)
HVAC – Smart Thermostats	782,168	100%	784,718	NA§	784,718
HVAC – All Other Measures	281,940	100%	283,181	0.63	178,404
Weatherization	21,170	100%	21,161	1.00/ 0.75	19,631
<b>Total</b>	<b>1,085,278</b>	<b>100%</b>	<b>1,089,060</b>	<b>NA</b>	<b>982,753</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 tracking data and Guidehouse team analysis.

Table 3-2 summarizes the energy savings the NSG HER Program achieved by path in 2019.

**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)
HVAC – Smart Thermostats	146,540	100%	146,802	NA§	146,802
HVAC – All Other Measures	259,669	100%	260,014	0.63	163,810
Weatherization	43,310	101%	43,593	1.00/ 0.75	35,463
<b>Total</b>	<b>449,519</b>	<b>100%</b>	<b>450,409</b>	<b>NA</b>	<b>346,075</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\_Faucet\_Aerator\_Showerhead\_Correction\_2019-04-12.xlsx, which is to be found on the Illinois SAG web site: [https://www.ilsag.info/ntg\\_2019/](https://www.ilsag.info/ntg_2019/).

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



#### 4. PROGRAM SAVINGS BY MEASURE

The PGL HER Program includes 13 measures as shown in the following table. The Smart Thermostats and Furnaces contributed the most savings.

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

Program Path	Measure Category	Ex Ante Gross Savings (Therms)	Verified Gross RR*	Verified Gross Savings (Therms)	NTG†	Verified Net Savings (Therms)
HVAC	Gas Water Heater - Indirect	49	127%	62	0.63	39
	Gas Water Heater - Tankless Whole House	4,707	100%	4,708	0.63	2,966
	High Efficiency Boiler	8,653	100%	8,655	0.63	5,452
	High Efficiency Boiler -Two-in-One	9,949	113%	11,201	0.63	7,057
	High Efficiency Furnace	258,408	100%	258,381	0.63	162,780
	Programmable Thermostat - Furnace	174	100%	174	0.63	110
	Smart Thermostat	782,168	100%	784,718	NA§	784,718
	<b>HVAC Subtotal</b>	<b>1,064,108</b>	<b>100%</b>	<b>1,067,899</b>		<b>963,122</b>
Weatherization	Air Sealing	1,743	101%	1,754	0.75	1,315
	Air Sealing with Attic Insulation	8,167	100%	8,144	1.00	8,144
	Attic Insulation	6,912	100%	6,897	1.00	6,897
	Duct Sealing	1,478	101%	1,487	0.75	1,115
	Foundation Wall Insulation	338	100%	337	0.75	253
	Wall Insulation	2,532	100%	2,542	0.75	1,906
	<b>Weatherization Subtotal</b>	<b>21,170</b>	<b>100%</b>	<b>21,161</b>	<b>0.00</b>	<b>19,631</b>
<b>PGL Total 2019</b>		<b>1,085,278</b>	<b>100%</b>	<b>1,089,060</b>	<b>NA</b>	<b>982,753</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\_Faucet\_Aerator\_Showerhead\_Correction\_2019-04-12.xlsx, which is to be found on the Illinois SAG web site: [https://www.ilsag.info/ntg\\_2019/](https://www.ilsag.info/ntg_2019/).

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

Source: Peoples Gas tracking data and Guidehouse team analysis.

The NSG HER Program includes 13 measures, but received participation in 12, as shown in the following table. The Furnace and Smart Thermostat measures contributed the most savings.

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

Program Category	Research Category	Ex Ante Gross Savings (Therms)	Verified Gross RR*	Verified Gross Savings (Therms)	NTG†	Verified Net Savings (Therms)
HVAC	Gas Water Heater - Tankless Whole House	2,561	100%	2,561	0.63	1,614
	High Efficiency Boiler	9,620	100%	9,622	0.63	6,062
	High Efficiency Boiler -Two-in-One	3,482	113%	3,920	0.63	2,470
	High Efficiency Furnace	243,797	100%	243,771	0.63	153,576
	Programmable Thermostat - Furnace	209	67%	140	0.63	88
	Smart Thermostat	146,540	100%	146,802	NA§	146,802
	<b>HVAC Subtotal</b>	<b>406,209</b>	<b>100%</b>	<b>406,816</b>		<b>310,612</b>
Weatherization	Air Sealing	11,008	101%	11,074	0.75	8,305
	Air Sealing with Attic Insulation	5,935	100%	5,918	1.00	5,918
	Attic Insulation	5,078	102%	5,156	1.00	5,156
	Duct Sealing	20,738	101%	20,862	0.75	15,647
	Foundation Wall Insulation	65	100%	65	0.75	49
	Wall Insulation	486	107%	518	0.75	389
	<b>Weatherization subtotal</b>	<b>43,310</b>	<b>101%</b>	<b>43,593</b>		<b>35,463</b>
<b>NSG Total 2019</b>	<b>449,519</b>	<b>100%</b>	<b>450,409</b>	<b>NA</b>	<b>346,075</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\_Faucet\_Aerator\_Showerhead\_Correction\_2019-04-12.xlsx, which is to be found on the Illinois SAG web site: [https://www.ilsag.info/ntg\\_2019/](https://www.ilsag.info/ntg_2019/).

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

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 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)
Gas Water Heater - Indirect	Each	48.7	62.28	127%	Illinois TRM, v7.0†, Section 5.4.2, PGL/NSG Program Tracking Data (PTD*)
Gas Water Heater - Tankless Whole House	Each	69.22	69.23	100%	Illinois TRM, v7.0, Section 5.4.2 and PTD
High Efficiency Boiler	MBH	1.72	1.72	100%	Illinois TRM, v7.0, Section 5.3.6 and PTD
High Efficiency Boiler - Two-in-One	Each	248.73	280.02	113%	Illinois TRM, v7.0, Section 5.3.17 and PTD
High Efficiency Furnace	Each	208.73	208.71	100%	Illinois TRM, v7.0, Section 5.3.7 and PTD
Programmable Thermostat - Furnace	Each	34.89	34.89	100%	Illinois TRM, v7.0, Section 5.3.11 and PTD
Smart Thermostat	Each	Average 63.13	Average 63.13	100%	Illinois TRM, v7.0, Section 5.3.16 and PTD
Smart Thermostat – Simple Energy Smart Tstat Exception	Each	63.20	67.89	107%	Illinois TRM, v7.0, Section 5.3.16 and PTD
Air Sealing	CFM	0.09	0.09	101%	Illinois TRM, v7.0, Section 5.6.1 and PTD
Air Sealing with Attic Insulation	CFM	0.06	0.06	100%	Illinois TRM, v7.0, Section 5.6.1 and PTD
Attic Insulation	Sq. Ft	0.05	0.05	101%	Illinois TRM, v7.0, Section 5.6.5 and PTD
Duct Sealing	CFM	0.71	0.71	101%	Illinois TRM, v7.0, Section 5.3.4 and PTD
Foundation Wall Insulation	Sq. Ft	0.73	0.73	100%	Illinois TRM, v7.0, Section 5.6.3 and PTD
Wall Insulation	Sq. Ft	0.11	0.12	101%	Illinois TRM, v7.0, Section 5.6.4 and PTD

\* Program Tracking Data (PTD) provided by Peoples Gas and North Shore Gas, extract dated January 30, 2020, except Smart Thermostats data, which was provided March 5, 2020.

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

#### High Efficiency Two-in-One Boilers

The Two-in-One Boilers ex ante savings are different than verified savings. The 2019 Master Measure Database (MMDB) file used to calculate the ex ante savings for this measure is outdated based on evaluation recommended updates made during the 2019 mid-year review. The 2020 MMDB file has the updated algorithm that accounts for 93% time of sale – 7% early replacement split for the boiler portion of



the savings and applies an actual Input Capacity variable of 119,667 Btu/h, which is the average Input Capacity estimated from boilers installed in 2019. Guidehouse relied on this capacity value to calculate 2019 verified savings which produced a gross savings realization rate of 113% (the ex ante savings were based on the TRM default value of 100,000 Btu/h).

**Recommendation 1.** Guidehouse recommends that the implementer provide the boiler Input Capacity and model numbers in the data extract available for evaluation.

### **Indirect Water Heater**

There is only one indirect water heater measure installation in the tracking data. The HER program information shows a minimum Annual Fuel Utilization Efficiency (AFUE) requirement of 88% for this measure. The heat source for indirect water heaters is provided by gas-fired boilers, whose efficiency is measured in AFUE and not Uniform Energy Factor (UEF).

**Recommendation 2.** Guidehouse recommends that the implementer use the minimum AFUE required by the program for the efficient Uniform Energy Factor (UEF) input variable. These two values are not equal. We consider 88% to be a better estimate for efficiency than the 80% that the 2019 MMDB file uses. Guidehouse also recommends that the implementer use the baseline UEF of 0.563 as outlined in Illinois Technical Reference Manual v7.0 (Illinois TRM), Section 5.4.2.

### **Programmable Thermostat**

Only one programmable thermostat can be claimed per household per Illinois TRM, Section 5.3.11. There is one project reported (Project ID #3911565) in tracking data that claimed three programmable thermostats. Ex ante and verified *per unit* savings agree, but the total verified savings for that project was one-third of ex ante savings.

**Recommendation 3.** Guidehouse recommends that the implementer ensure not more than one thermostat is claimed for a single household.

### **Smart Thermostat**

The smart thermostat tracking data contained one type of "Product\_Type" classified as a "Simple Energy Smart Thermostats Exception" These rebates did not contain any data about the heating system type, household factor or baseline thermostat. The ex ante per unit savings was 63.2 therms, close to the MMDB value of 62.3 therms for programmable thermostats. Guidehouse defaulted to the TRM v7.0 inputs for "unknown" characteristics and calculated 67.89 gross therms per unit savings.

**Recommendation 4.** Guidehouse recommends that the implementer report the TRM algorithm data inputs for the "Simple Energy Smart Thermostat Exception" ex ante savings calculation.

Guidehouse found a small number of overlaps (around 20 thermostats out of 14,710 claimed by PGL and NSG) between PGL/NSG and Nicor Gas in the data records of advanced thermostats processed by ComEd. The overlap involved duplicate customer addresses and contact names that we identified by comparing PGL/NSG and Nicor Gas records of purchased therms and incentives. The following Record Locator IDs identify the projects associated with overlap: EA-0006069864-MLI-6164090, EA-0006072858-MLI-6167079, EA-0006068178-MLI-6162402. As noted in the 2018 report, overlap may occur, for example, if one applicant purchased two thermostats for use at two different sites, which was allowed in 2019. Nicor Gas and PGL/NSG were able to provide gas account numbers for their claimed



thermostats, and we did not remove overlaps from the PGL or NSG savings. ComEd is limiting rebates in 2020 to one per customer.

**Recommendation 5.** If available, also provide the electric account number associated with the address or unit where the thermostat is installed – this would allow Guidehouse to check the PGL/NSG and Nicor Gas utility datasets with ComEd data for duplicates.

**Air Sealing and Duct Sealing**

The tracking data has two ex ante values for the Air Sealing measure. Those values are 0.08724 and 0.086667 therms/CFM. Similarly, Air Sealing with Attic Insulation has two tracking ex ante savings values, 0.06281 and 0.0630 therms/CFM. The differences appear to be rounding. The verified savings were consistent with the latter estimates and had 100% gross realization rate for Air Sealing, and 101% for Air Sealing (with Attic Insulation).

Similarly, for Duct Sealing, there are two ex ante savings values, 0.704933 and 0.705333 therms/CFM. The verified savings value is 0.709501 therms/CFM. The difference is due to rounding.

**Recommendation 6.** Guidehouse recommends that the implementer use consistent savings values for the air sealing and duct sealing measures and review algorithm inputs.

**Attic Insulation**

The Attic Insulation ex ante per unit savings are based on a weighted average baseline insulation level calculated from the previous year’s projects based on number of houses with pre-attic insulation of such R values. For example, for a project with the measure name “Attic Insulation - Existing R-11-14 - Final R-49+,” the evaluation team cannot confirm from tracking data whether the project was R-11 to R-49, R-14 to R-49 or in between. Since the evaluation team is not able to verify individual project baselines from tracking data or the source of the weighting factors, the verified per unit savings were based on a simple average for baseline insulation within each measure bin. The verified savings values are consistent with the 2019 MMDb algorithm once the ADJ factor adjustment is changed from 60% to 72%.

The implementer concluded that the approach for 2020 will be to provide Guidehouse with the project-specific pre and post R value data set for evaluation, while continuing to use the weighted average method to estimate ex ante savings. If the project-specific R values are not tracked in 2020, verified savings will be calculated using a simple average, like 2019.

**Table 5-2. Comparing Attic Insulation Per Unit Savings Estimates**

Measure Name	Ex Ante Gross (Per Unit Therms)	Verified Gross (Per Unit Therms)	Gross RR
Attic Insulation - Existing R-0 - Final R-49+ -SF Wx 19	0.207	0.207	100%
Attic Insulation - Existing R-11-14 - Final R-49+ -SF Wx 19	0.048	0.044	92%
Attic Insulation - Existing R-1-3 - Final R-49+ -SF Wx 19	0.127	0.144	113%
Attic Insulation - Existing R-15-19 - Final R-49+ -SF Wx 19	0.029	0.031	107%
Attic Insulation - Existing R-4-6 - Final R-49+ -SF Wx 19	0.088	0.094	107%
Attic Insulation - Existing R-7-10 - Final R-49+ -SF Wx 19	0.063	0.064	102%

Source: Guidehouse evaluation research.



**Recommendation 7.** Guidehouse recommends that the implementer track the project-specific pre and post installation R-values in the database, and those will be used to calculate verified savings. If the project-specific R values are not tracked, a simple average will be used to calculate verified savings.

**Wall Insulation**

Wall Insulation has ex ante savings values that do not match the Illinois TRM or MMDB values. For example, the Wall Insulation - Existing R-0 - Final R-13-15 measure has a savings value 0.113333 therms/sq. ft. The 2019 MMDB value is 0.113510 therms/sq. ft. and the 2020 MMDB value is 0.113865 therms/sq. ft. The MMDB values are based on a weighted average of previous year’s projects. The verified savings value is 0.112949 which is consistent with the MMDB savings value using a simple average.

**Recommendation 8.** Guidehouse recommends that the implementer track the project-specific pre and post installation R-values in the database, and those will be used to calculate verified savings. If the project-specific R values are not tracked, a simple average will be used to calculate verified savings.

**5.2 Historical Realization Rates and NTG Values**

Table 5-3 below shows the historical gross realization rates and NTG values for the HER Program. Beginning in GPY1, the NTG values shown are a savings weighted average from the various measures and deemed NTGs that vary by measure and program path.

**Table 5-3. Historical Realization Rates and NTG Values**

Program Year	PGL Verified Gross RR	NSG Verified Gross RR	PGL NTG	NSG NTG
GPY1	100%	100%	0.72	0.67
GPY2	101%	102%	0.82	0.80
GPY3	100%	100%	0.82	0.80
GPY4	101%	100%	0.82	0.80
GPY5	99%	100%	0.81	0.81
GPY6	100%	100%	0.89	0.84
2018	101%	102%	0.92	0.86
2019	100%	100%	0.90	0.77

Source: Guidehouse evaluation research.



## **6. APPENDIX 1. IMPACT ANALYSIS METHODOLOGY**

The evaluation team conducted a tracking database review for the HER Program. The tracking data came in three separate files, one for HVAC measures, one for weatherization measures, and one for ComEd processed smart thermostats. The evaluation team reviewed the tracking data to verify the completeness and accuracy of the tracking system data to identify any issues that would affect the impact evaluation of the program. We compared the tracking system savings input assumptions to the MMDB<sup>1</sup> that documents the implementer's approach to compliance with the Illinois TRM. Guidehouse compared the final savings values with the TRM and cross referenced those numbers with the savings algorithms listed in the MMDB.

Guidehouse determined verified gross savings for each program measure by multiplying the verified per-unit savings value by the quantity reported in the tracking data, when applicable. Guidehouse calculated verified net energy savings by multiplying the verified gross savings estimates by a deemed net-to-gross (NTG) ratio. In 2019, the NTG estimates used to calculate the net verified savings were based on past evaluation research and deemed by a consensus process through the Illinois Stakeholder Advisory Group (SAG).

## **7. APPENDIX 3. 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. 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.

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<sup>1</sup> File name: RESIDENTIAL PG NSG MMDB PY8 2019-01-24, produced by Franklin Energy.

**Table 7-1. TRC Inputs for PGL**

Measure	Quantity Unit	Installed Quantity	Effective Useful Life	Ex Ante Gross Savings (Therms)	Verified Gross Savings (Therms)	Verified Net Savings (Therms)
Gas Water Heater - Indirect	Each	1	13	49	62	39
Gas Water Heater - Tankless Whole House	Each	68	13	4,707	4,708	2,966
High Efficiency Boiler	MBH	5,049	25	8,653	8,655	5,452
High Efficiency Boiler - Two-in-One	Each	40	21.5	9,949	11,201	7,057
High Efficiency Furnace	Each	1,238	20	258,408	258,381	162,780
Programmable Thermostat - Furnace	Each	5	18	174	174	110
Smart Thermostat (ComEd Processed Rebate)	Each	12,527	11	782,168	784,718	784,718
Air Sealing	CFM	20,104	20	1,743	1,754	1,315
Air Sealing with Attic Insulation	CFM	129,667	20	8,167	8,144	8,144
Attic Insulation	Sq. Ft	112,818	20	6,912	6,897	6,897
Duct Sealing	CFM	2,096	20	1,478	1,487	1,115
Foundation Wall Insulation	Sq. Ft	462	20	338	337	253
Wall Insulation	Sq. Ft	21,157	20	2,532	2,542	1,906
<b>Total</b>			<b>13.5</b>	<b>1,085,278</b>	<b>1,089,060</b>	<b>982,753</b>

Source: Peoples Gas tracking data and Guidehouse team analysis.

**Table 7-2. TRC Inputs for NSG**

Measure	Quantity Unit	Installed Quantity	Effective Useful Life	Ex Ante Gross Savings (Therms)	Verified Gross Savings (Therms)	Verified Net Savings (Therms)
Gas Water Heater - Tankless Whole House	Each	37	13	2,561	2,561	1,614
High Efficiency Boiler	MBH	5,632	25	9,620	9,622	6,062
High Efficiency Boiler -Two-in-One	Each	14	21.5	3,482	3,920	2,470
High Efficiency Furnace	Each	1,168	20	243,797	243,771	153,576
Programmable Thermostat - Furnace	Each	6	18	209	140	88
Smart Thermostat	Each	2,183	11	146,540	146,802	146,802
Air Sealing	CFM	126,942	20	11,008	11,074	8,305
Air Sealing with Attic Insulation	CFM	94,224	20	5,935	5,918	5,918
Attic Insulation	Sq. Ft	112,888	20	5,078	5,156	5,156
Duct Sealing	CFM	29,404	20	20,738	20,862	15,647
Foundation Wall Insulation	Sq. Ft	89	20	65	65	49
Wall Insulation	Sq. Ft	3,161	20	486	518	389
<b>Total</b>			<b>17.1</b>	<b>449,519</b>	<b>450,409</b>	<b>346,075</b>

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