

Home Energy Jumpstart Program Impact Evaluation Report

Energy Efficiency Plan: Program Year 2022 (1/1/2022-12/31/2022)

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) 2022 Home Energy Jumpstart (HEJ) program and presents a summary of the energy impacts for the total program and broken out by relevant measure and program structure details. The appendices present the impact analysis methodology, detailed engineering desk review results and Illinois total resource cost (TRC) inputs. Program year 2022 covers January 1, 2022, through December 31, 2022.

2. Program Description

The 2022 HEJ program is an assessment and direct install program jointly implemented by ComEd, Nicor Gas, PGL, and NSG. This report focuses solely on the program's natural gas savings. Electric measure savings are included in a separate evaluation report delivered to ComEd.

The HEJ program seeks to secure energy savings through direct installation (DI) of low-cost efficiency measures, including water efficient showerheads and faucet aerators, pipe insulation, electricity-saving devices, and programmable thermostats at eligible single-family (SF) residences, including condominiums. The program also secures energy savings through installation of advanced (smart) thermostats, which requires a participant co-payment. In addition, the program performs an assessment of the major retrofit opportunities (e.g., furnace, boiler, air conditioning, insulation, and air sealing) and heightens homeowner awareness about other available efficiency programs offered by ComEd, PGL, and NSG. A Virtual Home Assessment (VA) option was added in 2020 and continued in 2021 and 2022 to adapt to COVID restrictions. The program measures also include Leave-Behind Kits (Home Energy Assessment or HEA Kit), which include weatherstripping, door sweep, and shower timer measures.

The PGL program had 1,620 unique participants in 2022 and completed 3,565 projects as Table 2-1 shows. Typically, all virtual home assessment participants received HEA kits.

Table 2-1. 2022 Volumetric Summary for PGL

| Participation | Direct Install | Virtual Home Assessment | Total |
|----------------------|----------------|----------------------------|-------|
| Participants * | 1,620 | 115 | 1,620 |
| Installed Projects † | 3,324 | 242 | 3,565 |

^{*} Participants are defined as the number of distinct account numbers with realized gas savings. Guidehouse confirmed all the VHA participants were also DI participants.

Source: Peoples Gas tracking data and Guidehouse evaluation team analysis

[†] Installed projects are defined as the number of distinct measure IDs with realized gas savings.



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

Table 2-2, 2022 Installed Measure Quantities for PGL

| Program Path | Measure | Quantity Unit | Installed Quantity |
|---------------------------------|---|------------------|--------------------|
| | Advanced Thermostat (DI) - Blended | Each | 3 |
| | Advanced Thermostat (DI) – Manual | Each | 73 |
| | Advanced Thermostat (DI) - Programmable | Each | 119 |
| | Bathroom Aerator SF (DI) | Each | 409 |
| | Boiler Pipe Insulation | Linear Feet | 604 |
| | Domestic Hot Water (DHW) Pipe Insulation | Linear Feet | 2,392 |
| Direct Install (DI) | Handheld Showerhead (DI) SF | Each | 377 |
| | HEA Kit | Each | 1,528 |
| | Kitchen Aerator SF (DI) | Each | 129 |
| | Programmable Thermostat (DI) | Each | 159 |
| | Re-Program Thermostat (DI) | Each | 45 |
| | Showerhead (DI) SF | Each | 303 |
| | Bathroom Aerator SF (VA) | Each | 150 |
| | Handheld Showerhead (VA) SF - 1 Showerhead | Each | 53 |
| Virtual Home Assessment (VA) | Handheld Showerhead (VA) SF - 2 Showerheads | Each | 32 |
| | Kitchen Aerator SF (VA) | Each | 32 |
| | Showerhead (VA) SF - 1 Showerhead | Each | 56 |
| | Showerhead (VA) SF - 2 Showerheads | Each | 31 |

Source: Peoples Gas tracking data and Guidehouse evaluation team analysis

The NSG program had 512 participants in 2022 and completed 1,242 projects as Table 2-3 shows.

Table 2-3. 2022 Volumetric Summary for NSG

| Participation | Direct Install | Virtual Home Assessment | Total |
|----------------------|----------------|----------------------------|-------|
| Participants * | 512 | 52 | 512 |
| Installed Projects † | 1,130 | 112 | 1,242 |

^{*} Participants are defined as the number of distinct account numbers with realized gas savings. Guidehouse confirmed all the VHA participants were also DI participants.

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

Guidehouse Inc.

[†] Installed projects are defined as the number of distinct measure IDs with realized gas savings.



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

Table 2-4. 2022 Installed Measure Quantities for NSG

| Program Path | Measure | Quantity Unit | Installed Quantity |
|---------------------|---|------------------|--------------------|
| | Advanced Thermostat (DI) - Blended | Each | 4 |
| | Advanced Thermostat (DI) - Manual | Each | 29 |
| | Advanced Thermostat (DI) - Programmable | Each | 27 |
| | Bathroom Aerator SF (DI) | Each | 312 |
| | Boiler Pipe Insulation | Linear Feet | 213 |
| | Domestic Hot Water (DHW) Pipe Insulation | Linear Feet | 1,191 |
| Direct Install (DI) | Handheld Showerhead (DI) SF | Each | 93 |
| | HEA Kit | Each | 456 |
| | Kitchen Aerator SF (DI) | Each | 30 |
| | Programmable Thermostat (DI) | Each | 26 |
| | Re-Program Thermostat (DI) | Each | 13 |
| | Showerhead (DI) SF | Each | 162 |
| | Bathroom Aerator SF (VA) | Each | 113 |
| | Handheld Showerhead (VA) SF - 1 Showerhead | Each | 30 |
| Virtual Home | Handheld Showerhead (VA) SF - 2 Showerheads | Each | 27 |
| Assessment (VA) | Kitchen Aerator SF (VA) | Each | 12 |
| | Showerhead (VA) SF - 1 Showerhead | Each | 26 |
| | Showerhead (VA) SF - 2 Showerheads | Each | 13 |

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

3. Program Savings Detail

Table 3-1 summarizes the energy savings the PGL HEJ program achieved by path in 2022.

Table 3-1. 2022 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 | 59,462 | 100% | 59,455 | 0.89 | 52,911 |
| Virtual Home Assessment | 803 | 100% | 803 | 1.02 | 819 |
| Total or Weighted Average | 60,265 | 100% | 60,258 | | 53,730 |

^{*} Realization rate (RR) is the ratio of verified gross savings to ex ante gross savings based on evaluation research findings.

Source: Peoples Gas tracking data and Guidehouse evaluation team analysis

[†] Net-to-gross (NTG): A deemed value. Available on the Stakeholder Advisory Group (SAG) website: https://www.ilsag.info/evaluator-ntg-recommendations-for-2022.



Table 3-2 summarizes the energy savings the NSG HEJ program achieved by path in 2022.

Table 3-2. 2022 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 | 17,494 | 100% | 17,493 | 0.89 | 15,620 |
| Virtual Home Assessment | 429 | 100% | 429 | 1.02 | 438 |
| Total or Weighted Average | 17,923 | 100% | 17,922 | | 16,058 |

^{*} RR is the ratio of verified gross savings to ex ante gross savings based on evaluation research findings.

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

Guidehouse Inc.

[†] A deemed value. Available on the SAG website: https://www.ilsag.info/evaluator-ntg-recommendations-for-2022.



4. Program Savings by Measure

The PGL program includes 18 measures as Table 4-1 shows. The HEA kits and programmable thermostats contributed the most savings.

Table 4-1. 2022 Annual Energy Savings by Measure for PGL

| Program Path | Savings Category | Ex Ante Gross Savings (therms) | Verified Gross RR* | Verified Gross Savings (therms) | NTG† | Verified Net Savings (therms) |
|-----------------|--|---|--------------------------|--|------|--|
| | Advanced Thermostat (DI) - Blended‡ | 256 | 100% | 256 | 0.90 | 231 |
| | Advanced Thermostat (DI) - Manual | 7,483 | 100% | 7,483 | 0.90 | 6,735 |
| | Advanced Thermostat (DI) - Programmable | 8,491 | 100% | 8,491 | 0.90 | 7,642 |
| | Bathroom Aerator SF (DI) | 414 | 100% | 414 | 1.02 | 423 |
| | Boiler Pipe Insulation | 438 | 98% | 430 | 0.88 | 379 |
| Direct | DHW Pipe Insulation | 4,848 | 100% | 4,848 | 0.88 | 4,266 |
| Install (DI) | Handheld Showerhead (DI) SF | 1,159 | 100% | 1,159 | 1.02 | 1,182 |
| | HEA Kit | 19,605 | 100% | 19,605 | 0.88 | 17,252 |
| | Kitchen Aerator SF (DI) | 1,201 | 100% | 1,201 | 1.02 | 1,225 |
| | Programmable Thermostat (DI) | 11,475 | 100% | 11,475 | 0.88 | 10,098 |
| | Re-Program Thermostat (DI) | 3,162 | 100% | 3,162 | 0.80 | 2,529 |
| | Showerhead (DI) SF | 931 | 100% | 931 | 1.02 | 950 |
| | DI Subtotal | 59,462 | 100% | 59,455 | | 52,911 |
| | Bathroom Aerator SF (VA) | 125 | 100% | 125 | 1.02 | 127 |
| | Handheld Showerhead (VA) SF - 1 Showerhead | 133 | 100% | 133 | 1.02 | 136 |
| Virtual Home | Handheld Showerhead (VA) SF - 2 Showerheads | 83 | 100% | 83 | 1.02 | 85 |
| Assessmen | Kitchen Aerator SF (VA) | 240 | 100% | 240 | 1.02 | 245 |
| t (VA) | Showerhead (VA) SF - 1 Showerhead | 141 | 100% | 141 | 1.02 | 144 |
| | Showerhead (VA) SF - 2 Showerheads | 81 | 100% | 81 | 1.02 | 82 |
| | VA Subtotal | 803 | 100% | 803 | | 819 |
| | Total or Weighted Average | 60,265 | 100% | 60,258 | | 53,730 |

Note: Subtotals may not sum due to rounding.

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

^{*} 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 website: https://www.ilsag.info/evaluator-ntg-recommendations-for-2022.

[‡] Blended is a term used in the tracking data and TRM to describe thermostats that use a mix of the programmable and manual thermostat baseline types, synonymous with "unknown baseline" in the TRM v10.0.



The NSG program includes 18 measures as Table 4-2 shows. The HEA Kits and Advanced Manual Thermostats measures contributed the most savings.

Table 4-2. 2022 Annual Energy Savings by Measure for NSG

| | | ., | • | | | |
|---------------------|--|---|--------------------------|--|------|--|
| Program Category | Savings Category | Ex Ante Gross Savings (therms) | Verified Gross RR* | Verified Gross Savings (therms) | NTG† | Verified Net Savings (therms) |
| | Advanced Thermostat (DI) - Blended | 256 | 100% | 256 | 0.9 | 231 |
| | Advanced Thermostat (DI) - Manual | 2,973 | 100% | 2,973 | 0.9 | 2,676 |
| | Advanced Thermostat (DI) - Programmable | 1,927 | 100% | 1,927 | 0.9 | 1,734 |
| | Bathroom Aerator SF (DI) | 316 | 100% | 316 | 1.02 | 322 |
| | Boiler Pipe Insulation | 154 | 98% | 152 | 0.88 | 134 |
| Direct Install | DHW Pipe Insulation | 2,418 | 100% | 2,418 | 0.88 | 2,128 |
| (DI) | Handheld Showerhead (DI) SF | 286 | 100% | 286 | 1.02 | 292 |
| | HEA Kit | 5,837 | 100% | 5,837 | 0.88 | 5,137 |
| | Kitchen Aerator (DI) SF | 279 | 100% | 279 | 1.02 | 285 |
| | Programmable Thermostat (DI) | 1,680 | 100% | 1,680 | 0.88 | 1,479 |
| | Re-Program Thermostat (DI) | 870 | 100% | 870 | 0.8 | 696 |
| | Showerhead (DI) SF | 498 | 100% | 498 | 1.02 | 508 |
| | DI subtotal | 17,494 | 100% | 17,493 | | 15,620 |
| | Bathroom Aerator SF (VA) | 94 | 100% | 94 | 1.02 | 96 |
| | Handheld Showerhead (VA) SF - 1 Showerhead | 76 | 100% | 76 | 1.02 | 77 |
| Virtual Home | Handheld Showerhead (VA) SF - 2 Showerheads | 70 | 100% | 70 | 1.02 | 72 |
| Assessment | Kitchen Aerator SF (VA) | 90 | 100% | 90 | 1.02 | 92 |
| (VA) | Showerhead (VA) SF - 1 Showerhead | 65 | 100% | 65 | 1.02 | 67 |
| | Showerhead (VA) SF - 2 Showerheads | 34 | 100% | 34 | 1.02 | 34 |
| | VA Subtotal | 429 | 100% | 429 | | 438 |
| | Total or Weighted Average | 17,923 | 100% | 17,922 | | 16,058 |

Note: Subtotals may not sum due to rounding.

^{*} 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 website: https://www.ilsag.info/evaluator-ntg-recommendations-for-2022. 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 therms savings and realization rate (RR) findings by measure from the evaluation team's review. The RR is the ratio of the verified savings to the ex ante savings. Following Table 5-1 are findings and recommendations, including discussion of all measures with an RR above or below 100%. 5.3Appendix A 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) | RR | Data Source(s) |
|---|----------------|--------------------------------|--|--------|--|
| Advanced Thermostat (DI) - Blended | Each | 85.425 | 85.425 | 100% | Illinois TRM, v10.0,† Section 5.3.16MMDB, IC Calculator |
| Advanced Thermostat (DI) - Manual | Each | 102.51 | 102.51 | 100% | Illinois TRM, v10.0, Section 5.3.16, MMDB, IC Calculator |
| Advanced Thermostat (DI) - Programmable | Each | 71.355 | 71.355 | 100% | Illinois TRM, v10.0, Section 5.3.16, MMDB, IC Calculator |
| Bathroom Aerator SF (DI) | Each | 1.013 | 1.013 | 100% | Illinois TRM, v10.0, Section 5.4.4, MMDB, IC Calculator |
| Bathroom Aerator SF (VA) | Each | 0.832 | 0.832 | 100% | Illinois TRM, v10.0, Section 5.4.4, MMDB, IC Calculator |
| Boiler Pipe Insulation | Linear Feet | 0.712 or 0.748 | 0.712 or 0.748 or 1.19 or 1.50 or 2.24 or 4.49 | Varies | Illinois TRM, v10.0, Section 5.3.2, MMDB and PTD*, IC Calculator |
| DHW Pipe Insulation | Linear Feet | 2.016 or 2.12 | 2.016 or 2.12 | 100% | Illinois TRM, v10.0, Section 5.4.1, MMDB and PTD, IC Calculator |
| Handheld Showerhead (DI) SF | Each | 3.07 | 3.07 | 100% | Illinois TRM, v10.0, Section 5.4.5, MMDB, IC Calculator |
| Handheld Showerhead (VA) SF - 1 Showerhead | Each | 2.52 | 2.52 | 100% | Illinois TRM, v10.0, Section 5.4.5, MMDB, IC Calculator |
| Handheld Showerhead (VA) SF - 2 Showerheads | Each | 2.60 | 2.60 | 100% | Illinois TRM, v10.0, Section 5.4.5, MMDB, IC Calculator |
| HEA Kit (Electric heat, Gas DHW) | Each | 3.97 | 3.97 | 100% | Illinois TRM, v10.0, Section 5.4.9 & 5.6.1, 4.8.16, MMDB, IC Calculator, and PTD |



| Measure | Unit Basis | Ex Ante Gross (therms/unit) | Verified Gross (therms/unit) | RR | Data Source(s) |
|--|---------------|--------------------------------|---------------------------------|------|--|
| HEA Kit (Gas heat, Electric DHW) | Each | 8.93 | 8.93 | 100% | Illinois TRM, v10.0, Section 5.4.9 & 5.6.1, 4.8.16, MMDB, IC Calculator, and PTD |
| HEA Kit (Gas heat, Gas DHW) | Each | 12.91 | 12.91 | 100% | Illinois TRM, v10.0, Section 5.4.9 & 5.6.1, 4.8.16 MMDB, IC Calculator, and PTD |
| Kitchen Aerator SF (DI) | Each | 9.31 | 9.31 | 100% | Illinois TRM, v10.0, Section 5.4.4, MMDB, IC Calculator |
| Kitchen Aerator SF (VA) | Each | 7.50 | 7.50 | 100% | Illinois TRM, v10.0, Section 5.4.4, MMDB, IC Calculator |
| Programmable Thermostat (DI) – Furnace | Each | 62.31 | 62.31 | 100% | Illinois TRM, v10.0, Section 5.3.11,MMDB, and PTD, IC Calculator |
| Programmable Thermostat (DI) – Boiler | Each | 122.59 | 122.59 | 100% | Illinois TRM, v10.0, Section 5.3.11, MMDB, IC Calculator, and PTD |
| Re-Program Thermostat (DI) – Furnace | Each | 62.31 | 62.31 | 100% | Illinois TRM, v10.0, Section 5.3.11, MMDB, IC Calculator, and PTD |
| Re-Program Thermostat (DI) – Boiler | Each | 122.59 | 122.59 | 100% | Illinois TRM, v10.0, Section 5.3.11, MMDB, IC Calculator, and PTD |
| Showerhead (DI) SF | Each | 3.07 | 3.07 | 100% | Illinois TRM, v10.0, Section 5.4.5, IC Calculator |
| Showerhead (VA) SF - 1 Showerhead | Each | 2.52 | 2.52 | 100% | Illinois TRM, v10.0, Section 5.4.5, IC Calculator |
| Showerhead (VA) SF - 2 Showerheads | Each | 2.60 | 2.60 | 100% | Illinois TRM, v10.0, Section 5.4.5, IC Calculator |

Note: MMDB – Master Measure Database (which is the measure calculator received from program administrator). Evaluation referenced the implementer (IC) Calculators.

Source: Guidehouse evaluation team analysis

5.2 Findings and Recommendations

Finding 1. The evaluation team found five instances (MEA-2022.08.05-382009, MEA-2022.08.05-382010, MEA-2022.04.14-321569, MEA-2022.08.05-382011, MEA-2022.04.19-324318) of boiler pipe insulation ex ante per-unit savings that did not align with the approved calculator.

^{*} Program tracking data (PTD) provided by PGL and NSG, extracted on January 30, 2022.

[†] Illinois Statewide Technical Reference Manual (IL-TRM) version 10.0 from http://www.ilsag.info/technical-reference-manual.html.



Recommendation 1. Ensure quantities in tracking data accurately reflect the number of feet installed for each project. Per-unit savings should match workbook calculators provided to and approved by Guidehouse.

Finding 2. HEA Kit savings are determined by heating and domestic hot water (DHW) fuel types. Existing space heating system type is provided in the tracking data; however, DHW fuel type is not recorded. The evaluation team leveraged ComEd joint data to establish DHW fuel type and calculate the verified savings for each kit. All projects were found in the ComEd data except one, MEA-2022.06.30-361432. Guidehouse assumed this kit was installed with gas heating and gas DHW systems.

Recommendation 2. Track DHW fuel type to determine HEA Kit savings. Guidehouse acknowledge that as of 2023, the program began tracking DHW fuel type and other inputs to calculate savings.

5.3 Historical RR and NTG Values

Table 5-2. shows the historical gross RR and NTG values for the HEJ program. Beginning in 2018, 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 RR and NTG Values

| Program Year | PGL Verified Gross RR | NSG Verified Gross RR | PGL NTG | NSG NTG |
|--------------|--------------------------|-----------------------------|---------|---------|
| 2018 | 107% | 110% | 0.84 | 0.86 |
| 2019 | 98% | 98% | 0.89 | 0.91 |
| 2020 | 99% | 100% | 0.89 | 0.91 |
| 2021 | 100% | 100% | 0.88 | 0.90 |
| 2022 | 100% | 100% | 0.89 | 0.90 |

Source: Guidehouse evaluation research

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Appendix A. Impact Analysis Methodology

Guidehouse verified unit savings by using the impact algorithms in IL-TRM v10.0.¹ We reviewed the ex ante savings calculation approach from the MMDB and Resource Innovations calculation file.² In most cases, the TRM algorithms were correctly applied in the MMDB, but where evaluation found the need to adjust, we did so accordingly with the TRM guidelines.

Guidehouse calculated verified net energy savings by multiplying the verified gross savings estimates by the NTG ratio. In 2022, the NTG estimates used to calculate the net verified savings were based on past evaluation research and defined by a consensus process through the Illinois Stakeholder Advisory Group (SAG).

¹ Illinois Statewide Technical Reference Manual (IL-TRM) version 10.0 from http://www.ilsag.info/technical-reference-manual.html

² Franklin Energy Master Measure Database (MMDB - Res and MF, provided February 08, 2022). Excel file 2022_SFHU_Resource Innovations_Savings Calculator.



Appendix B. Program Specific Inputs for the Illinois TRC

Table B-1 and Table B-2 show the TRC cost-effectiveness analysis inputs available at the time of producing this impact evaluation report. Currently, additional required cost data (e.g., measure costs, program-level incentive and non-incentive costs) are not included in these tables 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 | Savings Category | Units | Quantity | Effective Useful Life | Ex Ante Gross Savings (therms) | Verified Gross Savings (therms) | Verified Net Savings (therms) |
|----------------------------|------------------------------------|----------------|----------|-----------------------------|---|--|-------------------------------|
| Direct Install | Advanced Thermostat | Each | 195 | 11.0 | 16,231 | 16,231 | 14,608 |
| | Boiler Pipe Insulation | Linear Feet | 604 | 15.0 | 438 | 430 | 379 |
| | Domestic Hot Water Pipe Insulation | Linear Feet | 2,392 | 15.0 | 4,848 | 4,848 | 4,266 |
| | HEA Kit | Each | 1,528 | 12.5 | 19,605 | 19,605 | 17,252 |
| | Low Flow Faucet Aerator | Linear Feet | 538 | 10.0 | 1,615 | 1,615 | 1,648 |
| | Low Flow Showerhead | Linear Feet | 680 | 10.0 | 2,090 | 2,090 | 2,132 |
| | Programmable Thermostat | Each | 159 | 8.0 | 11,475 | 11,475 | 10,098 |
| | Re-Program Thermostat | Each | 45 | 2.0 | 3,162 | 3,162 | 2,529 |
| Virtual Home Assessment | Low Flow Faucet Aerator | Each | 182 | 10.0 | 365 | 365 | 372 |
| | Low Flow Showerhead | Each | 172 | 10.0 | 438 | 438 | 447 |
| Total or Weighted Average | | 6,495 | 12.8 | 60,265 | 60,258 | 53,730 | |

Source: Peoples Gas tracking data and Guidehouse evaluation team analysis



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

| Program Path | Savings Category | Units | Quantity | Effective Useful Life | Ex Ante Gross Savings (therms) | Verified Gross Savings (therms) | Verified Net Savings (therms) |
|----------------------------|------------------------------------|----------------|----------|-----------------------------|---|--|--|
| Direct Install | Advanced Thermostat | Each | 60 | 11.0 | 5,156 | 5,156 | 4,640 |
| | Boiler Pipe Insulation | Linear Feet | 213 | 15.0 | 154 | 152 | 134 |
| | Domestic Hot Water Pipe Insulation | Linear Feet | 1,191 | 15.0 | 2,418 | 2,418 | 2,128 |
| | HEA Kit | Each | 456 | 12.5 | 5,837 | 5,837 | 5,137 |
| | Low Flow Faucet Aerator | Linear Feet | 342 | 10.0 | 595 | 595 | 607 |
| | Low Flow Showerhead | Linear Feet | 255 | 10.0 | 784 | 784 | 799 |
| | Programmable Thermostat | Each | 26 | 8.0 | 1,680 | 1,680 | 1,479 |
| | Re-Program Thermostat | Each | 13 | 2.0 | 870 | 870 | 696 |
| Virtual Home Assessment | Low Flow Faucet Aerator | Each | 125 | 10.0 | 184 | 184 | 188 |
| | Low Flow Showerhead | Each | 96 | 10.0 | 245 | 245 | 250 |
| Total or Weighted Average | | | 2,777 | 12.9 | 17,923 | 17,922 | 16,058 |

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