



Income Eligible Gas Kits ISR Special Study Results

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

**Presented to
Peoples Gas**

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1. INTRODUCTION

This report presents the results of the participant survey of the Peoples Gas (PG) 2019 Income Eligible Gas Kits mail distribution offering sent to approximately 5,000 participants. The objective of the survey was to provide in-service rate (ISR) results for Weatherization Kit measures. The survey also assessed program awareness and customer satisfaction.

1.1 Summary of Volume and Energy Saving Impacts

In November 2019, Peoples Gas began mail distribution of a free kit of self-installation energy saving measures. Contents of the kit include a showerhead, faucet aerators, weatherstripping, switch and outlet gaskets, water heater setback instructions, shower timer, window film kits, and water heater pipe insulation. The kits are being distributed to customers that have been verified as LIHEAP grant recipients and therefore validated as Income Eligible. The offer will continue in 2020.

The PG Program had 4,946 participants in 2019 and distributed 4,946 kits in four mailing waves as shown in the following table. The kits in all four waves of distribution had the same contents.

Table 1-1. 2019 Volumetric Summary for PG

| Kit Distribution Wave | Distributed Quantity | Measure Composition |
|-----------------------|----------------------|-------------------------------------------------------------------------------|
| Kit Distribution 1 | 495 | |
| Kit Distribution 2 | 1,480 | 1 KA, 1 BA, 1 SH, 1 ST, 2x3 ft PI, 17 ft WX, 20 GA, 75 sq. ft WK, 1 WHTS Card |
| Kit Distribution 3 | 1,487 | |
| Kit Distribution 4 | 1,484 | |
| Total | 4,946 | |

KA = Kitchen Aerator, BA = bathroom aerator, SH = showerhead, ST = shower timer, PI = pipe insulation, WX = weatherstripping, GA = outlet and switch gaskets, WK = window kit, WHTS = water heater temperature setback.
Source: Peoples Gas tracking data and Guidehouse team analysis.

Table 1-2 summarizes the distributed measure quantities that are the basis for verified energy savings.

**Table 1-2. 2019 Distributed Measure Quantities for PG**

| Measure | Unit of Quantity | Distributed Quantity |
|----------------------------------|------------------|----------------------|
| Low-Flow Kitchen Aerator | Unit | 4,946 |
| Low-Flow Bathroom Aerator | Unit | 4,946 |
| Low-Flow Showerhead | Unit | 4,946 |
| Shower Timer | Unit | 4,946 |
| Pipe Insulation | Linear Feet | 29,676 |
| Weather-stripping | Linear Feet | 84,082 |
| Outlet and Switch Gaskets | Unit | 98,920 |
| Window Kit | Square Feet | 370,950 |
| Water Heater Temperature Setback | Card | 4,946 |

Source: Peoples Gas tracking data and Guidehouse team analysis.

The 2019 verified impact results for the program were reported separately.¹ The PGL Program includes nine measures as shown in the following table. The Window Kit and Weather-stripping measures contributed the most savings. The realization rates of 100% in the final 2019 impact report reflect agreement with a mid-year 2019 review that established TRM compliant in-service rates and per unit savings prior to launch of the offering in November 2019. In-service rate results from the survey conducted in 2020 on 2019 participants was not used for the 2019 impact evaluation, but results may be submitted for consideration as future TRM updates.

Table 1-3. 2019 Annual Energy Savings by Measure for Peoples Gas

| Research Category | Ex Ante Gross Savings (Therms) | Verified Gross RR* | Verified Gross Savings (Therms) | NTG† | Verified Net Savings (Therms) |
|----------------------------------|--------------------------------|--------------------|---------------------------------|-------------|-------------------------------|
| Low-Flow Kitchen Aerator | 6,431 | 100% | 6,431 | 1.00 | 6,431 |
| Low-Flow Bathroom Aerator | 2,773 | 100% | 2,773 | 1.00 | 2,773 |
| Low-Flow Showerhead | 29,073 | 100% | 29,073 | 1.00 | 29,073 |
| Shower Timer | 15,299 | 100% | 15,299 | 1.00 | 15,299 |
| Pipe Insulation | 5,903 | 100% | 5,903 | 1.00 | 5,903 |
| Weather-stripping | 35,698 | 100% | 35,698 | 1.00 | 35,698 |
| Outlet and Switch Gaskets | 32,359 | 100% | 32,359 | 1.00 | 32,359 |
| Window Kit | 47,247 | 100% | 47,247 | 1.00 | 47,247 |
| Water Heater Temperature Setback | 4,102 | 100% | 4,102 | 1.00 | 4,102 |
| Total | 178,897‡ | 100% | 178,884 | 1.00 | 178,884 |

* Realization Rate (RR) is the ratio of verified gross savings to ex ante gross savings, based on implementer and evaluation research conducted during 2019 to establish TRM compliant in-service rates and per unit savings prior to launch of the offering.

† 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 sum of ex ante gross measure savings does not equal the ex ante total savings because Peoples Gas reports energy savings per kit, not measure. The reported savings value per kit is rounded to two decimal places and causes a slight discrepancy compared with calculations at the measure level. These rounding differences caused very minor differences in total therms for the program (178,897 therms versus 178,884 therms produced a difference of 13 therms). The verified gross savings was 178,884 therms.

Source: Peoples Gas tracking data and Guidehouse team analysis.

¹ Guidehouse, *Income Eligible Gas Kits Impact Evaluation Report, Final Report*, April 14, 2020.



Table 1-4 shows the in-service rates and per unit therm savings by measure from our review conducted mid-year in 2019 that were also used in the final 2019 impact report. The in-service rates shown in Table 1-4 are the current TRM-compliant and custom values from previous research. In-service rate results from the 2020 survey conducted on 2019 participants may be submitted for consideration as future TRM updates.

Table 1-4. 2019 Impact Evaluation In-Service Rates and Verified Gross Savings Parameters

| Measure | Unit Basis | 2019 TRM-Compliant In-Service Rates | 2019 Verified Gross (therms/unit) | 2019 Data Source(s) |
|----------------------------------|------------|-------------------------------------|-----------------------------------|-----------------------------------------------------------------------|
| Low-Flow Kitchen Aerator | Each | 0.58 | 1.30 | PGL Program Tracking Data (PTD*), Illinois TRM, v7.0†, Section 5.4.4 |
| Low-Flow Bathroom Aerator | Each | 0.61 | 0.56 | Illinois TRM, v7.0†, Section 5.4.4 and PTD |
| Low-Flow Showerhead | Each | 0.62 | 5.88 | Illinois TRM, v7.0, Section 5.4.5 and PTD |
| Shower Timer | Each | 0.34 | 3.09 | Illinois TRM, v7.0, Section 5.4.9 and PTD |
| Pipe Insulation | LN FT | 0.41 | 0.20 | Illinois TRM, v7.0, Section 5.4.1 and PTD; ISR is custom value. |
| Weather-stripping | LN FT | 0.87 | 0.42 | Illinois TRM, v7.0, Section 5.6.1 and PTD. ISR from Illinois TRM v8. |
| Outlet and Switch Gaskets | Each | 0.87 | 0.33 | Illinois TRM, v7.0, Section 5.6.1 and PTD. ISR from Illinois TRM v8. |
| Window Kit | SQ FT | 0.87 | 0.13 | Illinois TRM, v8.0‡, Section 5.6.1 and PTD. ISR from Illinois TRM v8. |
| Water Heater Temperature Setback | Each | 0.27 | 0.83 | Illinois TRM, v7.0, Section 5.4.6 and PTD. ISR is custom value. |

* Program Tracking Data (PTD) provided by Peoples Gas, extract dated January 30, 2020.

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

‡ State of Illinois Technical Reference Manual version 8.0 from <http://www.ilsag.info/technical-reference-manual.html>.

1.2 Participant Survey

The participant survey was fielded from February 4th to April 8th of 2020. All 2019 participants were sent an online survey link via a postcard invitation. The postcard and survey were offered in English and Spanish language versions. Participants were offered a \$10 gift card to complete the survey. Table 1-5 summarizes the survey disposition.

The global pandemic Covid-19 and related social distancing efforts occurred in the middle of fielding. While the Covid-19 pandemic did not appear to impact response rates, the fact that many customers may have been unexpectedly homebound could certainly have affected in-service results.



Table 1-5. 2019 IE Weatherization Kit Survey Disposition

| Category | Disposition Quantity | Disposition Percent |
|-------------------------------------------|----------------------|---------------------|
| Invited to Take Survey* | 4,946 | 100% |
| <i>Total Opened Link</i> | 191 | 4% |
| <i>Screened Out</i> | 15 | 0.3% |
| <i>Dropped Out</i> | 14 | 0.3% |
| <i>Total Respondents</i> | 162 | 3% |
| Respondents by Language | 162 | 100% |
| <i>English Language</i> | 156 | 96% |
| <i>Spanish Language</i> | 6 | 4% |
| Respondents by Level of Completion | 162 | 100% |
| <i>Completed ISR</i> | 162 | 100% |
| <i>Completed Awareness</i> | 117 | 72% |
| <i>Completed Satisfaction</i> | 117 | 72% |
| <i>Completed Demographics</i> | 117 | 72% |

* All 2019 customers that were mailed a kit, minus returned kits, were mailed a postcard invitation to take the survey. The sample population represents the number of kits that were distributed in 2019 minus returns.

Source: Survey response data and Guidehouse analysis.

2. IN-SERVICE RATE RESULTS

Based on survey results, the in-service rates for kit measures ranged from 51% for outlet and switch gaskets to 63% for weather-stripping. As seen in Table 2-1, one quarter to a third of respondents state they plan to install the items, and additional survey responses not shown indicate the stated time range for doing so averages from 0.5 months for pipe insulation to within 3 months for weather stripping. The researched in-service rate results in Table 2-1 may be submitted for consideration as future TRM updates.



Table 2-1. Kits In-Service Rate Results Collected from 2019 Recipients that may be Submitted for Future TRM Updates

| Kit Measure | Respondents | Researched In-Service Rate* | Installed (and still installed) | Installed (but removed) | Plan to Install | Do not plan to Install | Gave it away |
|---------------------------|-------------|-----------------------------|---------------------------------|-------------------------|-----------------|------------------------|--------------|
| Low-Flow Kitchen Aerator | 162 | 55% | 55% | 4% | 33% | 4% | 4% |
| Low-Flow Bathroom Aerator | 162 | 57% | 57% | 2% | 31% | 6% | 4% |
| Low-Flow Showerhead | 162 | 57% | 57% | 2% | 31% | 3% | 6% |
| Weather-stripping | 162 | 63% | 63% | 2% | 28% | 4% | 2% |
| Outlet and Switch Gaskets | 162 | 51% | 51% | 1% | 34% | 7% | 7% |
| Window Kit | 162 | 57% | 57% | 6% | 24% | 9% | 5% |
| Pipe Insulation | 162 | 56% | 56% | 1% | 25% | 14% | 6% |

* The In-Service Rate is a Guidehouse estimate based on survey data – the ISR is equal to the percentage of respondents that reported installing the measure and indicated that it was still installed. The estimated ISR should be applied to the number of kits sent, minus any returns.

Source: Survey response data and Guidehouse analysis.

Table 2-2 provides the TRM-compliant in-service rates used for 2019 impact evaluation and the 2020 research values that may be submitted for consideration as future TRM updates. The water-saving ISRs are comparable between 2019 TRM-compliant and 2020 researched results, while the 2020 researched weatherization ISRs are substantially lower than 2019 values. Shower timers and water heating setback ISR questions were not included in the 2020 research due to survey complexity. The pipe insulation 2019 ISR was an estimate from secondary research (the ISR was not in the 2019 TRM) while the researched value is substantially higher.

Table 2-2. 2019 TRM-Compliant and 2020 Researched In-Service Rates Comparison

| Measure | Unit Basis | 2019 TRM-Compliant In-Service Rates† | 2020 Researched In-Service Rates* |
|----------------------------------|------------|--------------------------------------|-----------------------------------|
| Low-Flow Kitchen Aerator | Each | 0.58 | 0.55 |
| Low-Flow Bathroom Aerator | Each | 0.61 | 0.57 |
| Low-Flow Showerhead | Each | 0.62 | 0.57 |
| Shower Timer | Each | 0.34 | NA |
| Pipe Insulation | LN FT | 0.41 | 0.56 |
| Weather-stripping | LN FT | 0.87 | 0.63 |
| Outlet and Switch Gaskets | Each | 0.87 | 0.51 |
| Window Kit | SQ FT | 0.87 | 0.57 |
| Water Heater Temperature Setback | Each | 0.27 | NA |

* Guidehouse, 2020 survey research.

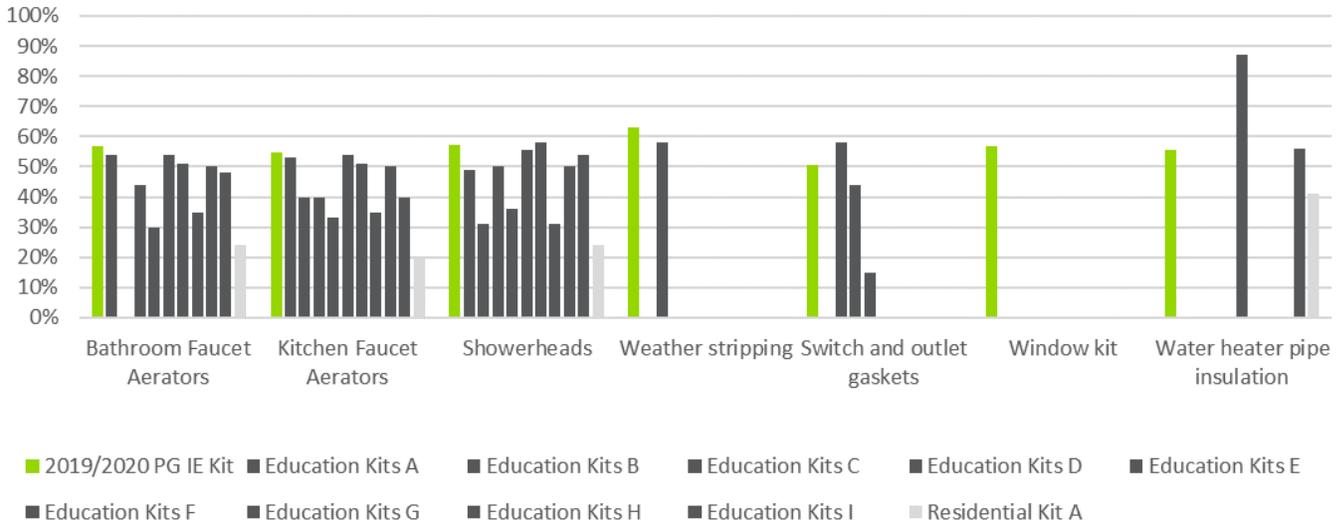
† State of Illinois Technical Reference Manual version 7.0 and 8.0 from <http://www.ilsag.info/technical-reference-manual.html>.

Figure 2-1 below shows the comparative ISR for the Peoples Gas income eligible kit compared to kits distributed through school education programs, and one residential delivery offering. Data is more available for showerheads and aerators whereas comparative data is relatively sparse for the remaining kit measures. This data is pulled from the following jurisdictions: CO, IN, KY, OH, MA, MO, NC, and SC, with source details in the appendix.



Peoples Gas income-eligible kits in-service rates are among the highest in the country when compared to education kit in service rates (Figure 2-1) in other jurisdictions. This is a notable accomplishment, as higher in-service rates are typical for kits distributed in conjunction with education curriculum and instruction as opposed to a doorstep surprise. In-service rate research recently conducted by Guidehouse for another utility that offered both the education kit program and a free residential energy efficiency kit delivered to the homes of appliance recycling participants indicated that the education kits achieved a 15-30% higher in-service rate compared to the free residential kit.

Figure 2-1. Kit Product In Service Rates Compared to the PG IE Kit

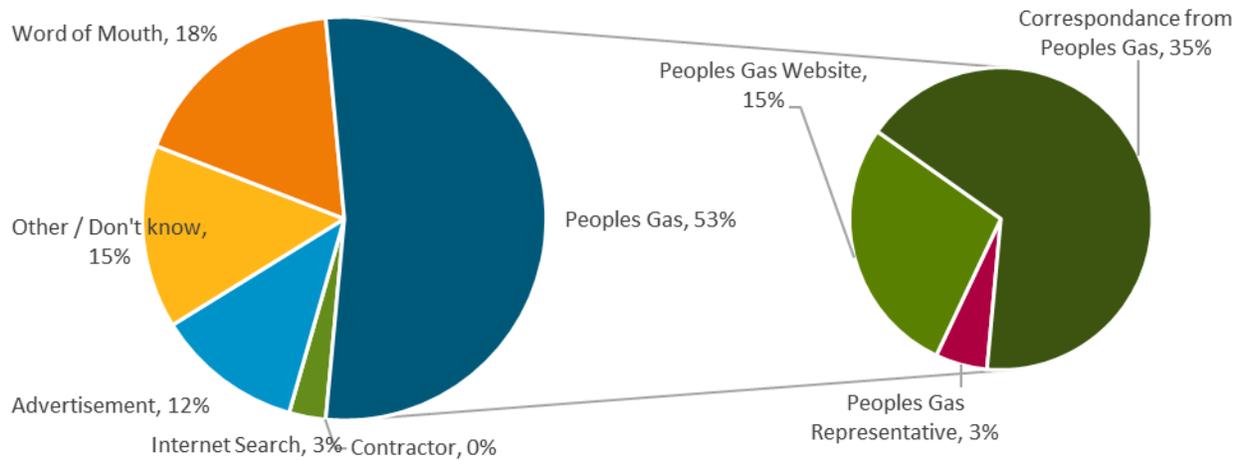


Source: Guidehouse analysis of PG survey responses and secondary research.

3. PROGRAM AWARENESS

Of the 117 respondents, 83 or 71% stated they were not aware of the existence of the Peoples Gas Energy Efficiency program prior to receiving the kit, indicating that **distributing kits to income eligible customers may be an effective outreach strategy to this population**. The 34 respondents that stated they were previously aware of the People Gas Energy Efficiency program primarily heard of the offering through Peoples Gas (53%), followed by word of mouth (18%) or an advertisement (12%), as shown in Figure 3-1.

Figure 3-1. How Customers Aware of the Peoples Gas Energy Efficiency Program First Heard of it (n=34)

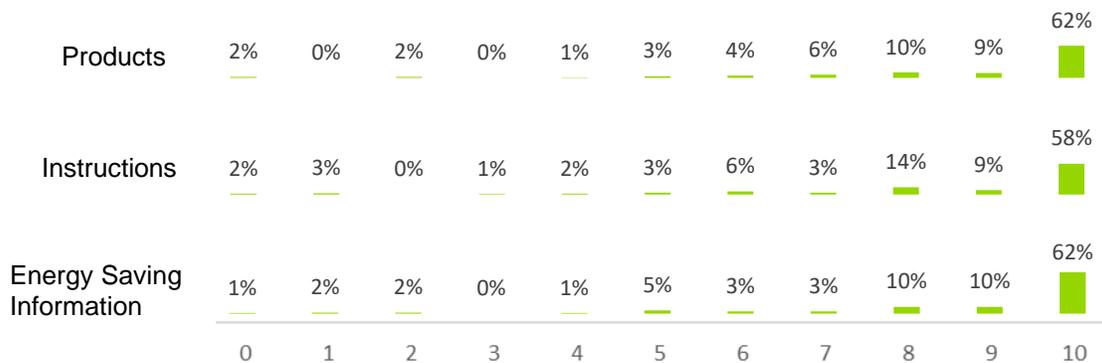


Source: Guidehouse analysis of PG survey responses.

4. PROGRAM SATISFACTION

Customers are satisfied with the kits, as shown in Figure 4-1, with over 80% giving their satisfaction with the components an 8, 9, or 10 in each category². Only 5 respondents gave a written explanation when they gave a low satisfaction score. Three of these did not know what to do with some of the products, and one was dissatisfied with the resulting low flow rate of their fixture.

Figure 4-1. Satisfaction with the Energy Efficiency Kit* (n=117)



Source: Guidehouse analysis of PG survey responses

² Customers were asked to rate their satisfaction on a 0-10 scale where 0 indicated "Not at all satisfied" and 10 "Very satisfied".

5. DEMOGRAPHICS

As shown in Table 5-1 and Table 5-2, we collected the following two demographic variables: housing type and number of occupants. Respondents represent diverse housing types with 44% living in single family detached homes, and 43% in apartments or condominiums. Most homes contained one to four year round residents, with 7% each having five or six residents.

Table 5-1. Respondent Housing Type

| Housing Type | % of Respondents |
|------------------------------------------------------|------------------|
| Single Family Detached Home | 44% |
| Apartment or Condominium | 43% |
| Single Family Attached Home (townhouse or row house) | 13% |

Source: Guidehouse analysis of PG survey responses.

Table 5-2. Year Round Home Residents

| Count of Residents | % of Respondents |
|--------------------|------------------|
| 1 | 24% |
| 2 | 30% |
| 3 | 17% |
| 4 | 15% |
| 5 | 7% |
| 6 | 7% |

Source: Guidehouse analysis of PG survey responses.



6. APPENDIX: ISR BENCHMARK SOURCES

Table 6-1. ISR Benchmark Sources

| Benchmark Item | Utility or Region | Year | Source |
|-------------------|---------------------------------------------------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Education Kits A | Vectren/Dayton Ohio | 2016 | https://illumeadvising.com/files/2016/08/KitsWhitePaper_Final.pdf |
| Education Kits B | AEP Ohio | 2016 | |
| Education Kits C | Duke KY | 2016 | |
| Education Kits D | IN, OH, NC, SC, KY (Regional Education Kits Program) | 2015 | https://dms.psc.sc.gov/Attachments/Matter/ab859368-1ab3-44e5-ad5d-d6a9fb6ba2f5 |
| Education Kits E | IN | 2012 | https://www.aceee.org/files/pdf/2012-indiana-emv-report.pdf |
| Education Kits F | CO | 2012 | https://www.xcelenergy.com/staticfiles/xcel/Regulatory/Regulatory%20PDFs/CO-DSM/CO-2012-Energy-Savings-Kits-Final-Evaluation.pdf |
| Education Kits G | PA | 2018 | https://www.pplelectric.com/-/media/PPLElectric/Save-Energy-and-Money/Docs/Act129 |
| Education Kits H | MA TRM | 2019 | https://etrm.anbetrack.com/#/workarea/trm/MADPU/RES-O-EK/2019-2021 Plan TRM/version/1?measureName=Behavior%20-%20Education%20Kit |
| Education Kits I | South Central U.S. | 2019 | Guidehouse Research, Unpublished |
| Residential Kit A | South Central U.S. | 2019 | Guidehouse Research, Unpublished |

Source: Guidehouse research.