NYSEG/RG&E Evaluation Report

Impact Evaluation for the Smart Solutions Program
Q1 – Q2 2024 Program Year

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Glossary

Measurement and Verification (M&V): The process of planning, measuring, collecting, and analyzing data for the purpose of verifying and reporting energy savings from the implementation of energy conservation measures.

Gross Savings/Reported Savings (GS): Energy savings that result directly from program-related actions taken by participants in an energy efficiency program, regardless of why they participated and unadjusted by any significant factors. This is sometimes referred to as program-reported savings and may include some level of refinement such as modeling or adjustments for QA/QC to address sources of uncertainties in Planned Savings, including baseline assumptions or deemed values. Gross Savings is determined prior to an independent evaluation. The term "gross" can be applied to Annual Savings as well as Lifetime Savings.

Gross Savings Analysis (GSA): The analysis performed by an independent evaluator to determine whether reported Gross Savings have been realized. Gross Savings Analysis methods should be consistent with industry standards and best practices.

Verified Gross Savings (VGS): VGS is the value reported by an independent evaluator as energy efficiency program activities and Gross Savings Analysis are complete. VGS is distinct from GS in two ways: 1) it is the product of a complete Gross Savings analysis using methods consistent with industry standard best practices, and 2) it is produced by an independent evaluator.

VGS Realization Rate (VGS RR): The ratio of VGS to GS, expressed as a decimal; indicates the performance of a program's reported GS relative to actual realized savings.

Alternative Prospective Realization Rate (AP RR): A ratio, expressed as a decimal, developed by an independent evaluator, representing the expected realization rate a program would experience from the program administrator implementing recommended actions detailed in the Gross Savings Analysis.

Benefit-Cost Analysis (BCA): Analysis to estimate the value of the program against the cost of the program. New York State acknowledges the BCA algorithms of Societal Cost Test and Utility Cost Test.

Societal Cost Test (SCT): A benefit-cost analysis that considers the economic advantages and disadvantages which includes societal externalities such as environmental concerns. The key question answered is whether the utility, state, or nation is better off as a whole. A score greater than 1 indicates the program provides more benefits than costs.

Utility Cost Test (UCT): A benefit-cost analysis measuring the benefits of a program with respect to the cost of achieving those benefits from the perspective of the program, as a resource, for the utility. A score greater than 1 indicates the program provides more benefits than costs.

In-Service Rate (ISR): The ratio of participants claimed installations versus expected installations.

1. Executive Summary

ADM Associates, Inc. (the Evaluator) was contracted by New York State Electric & Gas Corporation (NYSEG) and Rochester Gas and Electric Corporation (RG&E) to provide evaluation services for their commercial, industrial, and residential energy efficiency programs. This report describes the impact evaluation of the Smart Solutions Program for Q1 – Q2 of program year (PY) 2024, defined January 2024 through June 2024.

The impact evaluation consists of a Gross Savings analysis determining Verified Gross Savings (VGS) results to be reported as an alternative prospective realization rates (AP RRs). This AP RR is to replace the Verified Gross Savings Realization Rate (VGS RR) determined through evaluation of Q1-Q3 2023 program year.

1.1 Objectives

The primary evaluation goals are:

- Determine Verified Gross Savings (VGS) for Q1 – Q2 2024 Smart Solutions Program through measurement and verification (M&V). VGS includes annual fuel savings (VGS Fuel Therms), annual electric energy savings (VGS kWh) and summer electric peak demand reduction (VGS kW).
- Perform a billing data regression analysis on programmable and connected thermostats offered from the 2022 program year to determine verified energy savings and validate assumptions from the New York State Technical Reference Manual (NY TRM).[1]
- Update the electric annual energy savings, fuel annual energy savings, and electric summer peak demand reduction realization rates for new alternative prospective realization rates (AP RR) due to significant changes to the energy efficiency measures offered in the program. Updated AP RRs are necessary for the following reasons:
- Additional evaluation tasks based on previous evaluation findings (large impact of programmable and smart thermostats as well as additional primary data collection through surveying)
- Evaluation of new energy efficiency measures (weatherization measures, room air conditioners, and smart plugs)
- Removal of energy efficiency measures (lighting)

[1] 2022 Program data is used to ensure sufficient post-installation billing data is available for analysis per industry standard practices.

- NY TRM updates
- Provide recommendations for program improvements and NY TRM improvements.
- Perform Benefit-Cost Analysis (BCA) to determine Societal Cost Test (SCT) score and Utility Cost Test (UCT) score.

1.2 Methodology

Verified energy savings were determined through two methods, depending on the measure type. Most measures had verified energy savings determined by reviewing the NY TRM and scorecard data provided by NYSEG/RG&E. Supplemental TRM algorithm input information and installation rate data was collected through the program participant survey conducted in 2023 and additional questions added to the attribution study conducted in 2024. For some measures, a different approach focusing on electric and fuel consumption was needed to determine savings. Verified energy savings were determined through a billing data regression analysis. The impact evaluation steps included:

- Review of tracking data and deemed savings calculations.
- Verification of product eligibility for inclusion in the program.
- Participant surveys for verification of measure installation.
- Measurement of key parameters that inform partially deemed savings estimations through surveys.
- A billing regression analysis to determine energy savings for programmable and connected thermostats.

A detailed explanation of the evaluation methodologies can be found in Appendix A.

1.3 Verified Gross Savings and Impact Evaluation Findings

The PY2024 impact evaluation resulted in a 68% verified gross summer peak demand reduction realization rate (VGS kW RR), a 42% verified gross annual energy savings realization rate (VGS kWh RR), and a 32% verified gross fuel therms realization rate (VGS Fuel therms RR).

- The largest measure contributing to electric kWh and fuel therm savings are programmable and connected thermostats. Thermostats accounted for 92% of gross fuel savings and 79% of electric energy savings. The thermostat realization rates determined via a billing analysis impact the program's overall RRs heavily.
- For the other measures, VGS results were most impacted by installation rates (ISR) values but also impacted by savings algorithm input assumptions such as fuel

sources and measure installation locations. Detailed differences between VGS and GS calculations are described in Section 3.5.

Prospective Verified Gross Savings and AP RRs for the program are shown in Table 1-1.

Table 1-1: Prospective VGS Realization Rate Summary

Savings	Electric Peak Demand Savings (kW)	Electric Annual Energy Savings (kWh)	Natural Gas and Delivered Fuel Annual Energy Savings (Fuel Therms)
Gross Savings	22.02	993,099	108,558.84
Verified Gross Savings	15.04	420,388	34,732.69
AP RR	68%	42%	32%

Verified Gross Savings results and provided program costs were used to determine cost-effectiveness scores for the Utility Cost Test (UCT) and the Societal Cost Test (SCT). The inputs and algorithms used to determine cost-effectiveness are consistent with Version 4 of the Benefit-Cost Handbook. Results are shown in Table 1-2.

Table 1-2: Benefit-Cost Results

Program Administrator	UCT	SCT
NYSEG	1.22	2.72
RG&E	0.63	1.33

1.4 Conclusions

The following are conclusions based on findings from the impact evaluation.

- Several weatherization measures have been added to the Smart Solutions measure mix in 2024, however, most electric and fuel savings in Q1 and Q2 of 2024 for both NYSEG and RG&E were from thermostats.
- The PY2024 impact evaluation resulted in an overall 32% fuel alternative prospective realization rate, a 42% electric alternative prospective realization rate (AP kWh RR), and a 68% electric summer peak demand reduction alternative prospective realization rate (AP kW RR).

- The largest measure contributing to electric kWh and fuel therm savings are thermostats. The thermostat realization rates determined via a billing analysis have the largest impact on the program's overall RRs.
- For the other measures, VGS results were most impacted by installation rates (ISR) values but also impacted by savings algorithm input assumptions such as fuel sources and measure installation locations. Detailed differences between VGS and GS calculations are described in Section 3.5.

1.5 Recommendations

Evaluation findings led to the following recommendations:

- Incorporate program AP RRs developed in this report for Q4 of 2024 onwards.
- Re-evaluate the program in 2025 for updated AP RRs based on:
    - Adoption of recommendations from this evaluation
    - Program changes
    - Enhanced thermostat billing analysis
    - NY TRM updates
- Update all instances of APS (standalone and in kits) to incorporate connected equipment splits and updated baselines.
- Record water heating fuel type for pipe insulation purchases.
- Update Gross Savings calculator to properly incorporate fuel type from marketplace report for Window Film Kits and Weatherization Kits. This will allow savings to be adjusted for scenarios where the heating fuel type is known and no longer has to rely on unknown fuel type splits.
- Update the aerator location splits and efficient GPM for the Energy Saving Kit Plus in the Gross Savings calculator to more accurately determine savings where customers install aerators in both the kitchen and bathroom.
- Update the Gross Savings calculator for pipe insulation savings. Currently, the Gross Savings calculator is misaligned on pipe diameter and thickness. The calculator assumes that pipe insulation will either be a diameter of 0.75 in and a thickness of 0.5 or a diameter of 0.75 and a thickness of 0.75. However, there are three different combinations of thickness and diameter that are possible.

2. Introduction

This section provides background information on the Smart Solutions Program.

2.1 Program Description

The Smart Solutions Program (previously known as Energy Marketplace or Online Marketplace) provides incentives to customers purchasing energy-efficient products through the following utility-managed websites.

- nysegsmartsolutions.com
- rgesmartsolutions.com

The Smart Solutions Program offers rebates for the following energy-efficient equipment: advanced power strips (APS), air purifiers, smart plugs, thermostats, window air conditioners, water-saving measures, such as faucet aerators, low-flow showerheads, and thermostatic shower restriction valve (TSVs), and weatherization measures such as door sweeps, foam sealant, pipe insulation, window film kits, and weather strips. Also offered are a variety of kits. The different kits provided, as well as their contents, are provided in Table 2-1. Many of these kits include a variety of LED lightbulbs or products, however, as of 2024, LEDs are no longer rebated through the program, and therefore no savings are claimed. Electric customers are eligible to receive rebates on electric efficiency measures and natural gas customers are eligible for rebates on gas-saving measures.

Table 2-1: Kit Measures and Contents Offered in Smart Solutions

PY2024 Measures	Rebate Contents
Energy Saving Kit	aerator, showerhead, advanced power strips (APS)
Energy Saving Kit Plus	APS, kitchen aerator, faucet aerator, showerhead
Electric Savings Kit	APS
Water Conservation Kit	Faucet aerator, kitchen aerator, showerhead
Weatherization Kit	Door sweep, corner doorjamb pads, rope caulk, window film kit, switch and outlet gaskets, weather strips, pipe insulation

In the fall of 2019, the Companies added a residential insulation and sealing package financing option to the websites—the Sealed Comfort Package. For this program, the Companies have partnered with Sealed to enable qualified customers to get insulation and other smart home technologies installed in their homes with no or limited upfront costs.

The Companies offer two programs on the websites through Sealed, Inc., the Climate Control Plan, which offers financing for air source heat pump installations, and the Comfort Plan which allows customers to pay for qualifying insulation and sealing projects through energy savings obtained from the upgrades. The Sealed programs are market-based offers and do not require any dedicated program budget from NYSEG/RG&E. Sealed's business model is premised on homeowner savings being realized over time. Sealed funds the marketing efforts and provides all the necessary capital for sales, operations, and project finance.

2.2 Impact Evaluation

The impact evaluation consisted of a Gross Savings analysis calculating Verified Gross Savings (VGS) results to determine alternative prospective realization rates (AP RRs). The formulation of these AP RRs is predicated on the analysis of data provided during the first and second quarters of 2024 (Q1 and Q2). This report includes a list of adjustments and recommendations to be implemented in the Gross Savings calculations for improved AP RRs in 2025.

2.3 Program Participation

The number of purchases on the Smart Solution websites in the first half of PY2024 for each measure by utility is shown in Table 2-2.

Table 2-2: Q1-Q2 PY2024 Smart Solutions Measure Quantity

PY2024 Measures	NYSEG Count	RG&E Count	Total Count
Advanced Power Strip	936	257	1,193
Air Purifier	405	146	551
Room AC	9	0	9
Pipe Insulation	17	0	17
Smart Plug	8	0	8
Sealed	5	1	6
Thermostat	1,632	889	2,521
Kit Measures			
Water Conservation Kit	8	9	17
Electric Savings Kit	11	4	15
Energy Saving Kit	51	36	87
Energy Saving Kit Plus	9	1	10
Weatherization Kit	94	48	142

PY2024 Measures	NYSEG Count	RG&E Count	Total Count
Window Film Kit	6	10	16
Water Savings Measures			
Aerator	19	3	22
Showerhead	48	63	111
Showerhead and TSV	1	1	2
TSV	4	1	5
Weatherization Measures			
Door Sweep	2	0	2
Foam Sealant	57	11	68
Weather Strip	3	0	3
Total	3,325	1,480	4,805

The reported annual Gross Savings for each utility are shown in Table 2-3.

Table 2-3: Q1-Q2 PY2024 Smart Solutions Reported Annual Savings

Utility	PY2024 Measures	Gross Demand Savings (kW)	Gross Electric Savings (kWh)	Gross Fuel Savings (Therms)
NYSEG	Advanced Power Strip	6.06	55,848	0.00
	Air Purifier	5.83	50,851	0.00
	Room AC	0.75	606	0.00
	Pipe Insulation	0.13	1,107	0.00
	Smart Plug	0.05	374	0.00
	Sealed	0.00	791	885.60
	Thermostat	0.00	596,646	51,494.62
	Kit Measures			
	Water Conservation Kit	0.00	3,375	40.01
	Electric Savings Kit	0.07	633	0.00
	Energy Saving Kit	0.32	14,560	165.90
	Energy Saving Kit Plus	0.06	2,192	70.85
	Weatherization Kit	3.08	13,246	1,264.92
	Window Film Kit	0.00	145	0.00

Utility	PY2024 Measures	Gross Demand Savings (kW)	Gross Electric Savings (kWh)	Gross Fuel Savings (Therms)
	Water Savings Measures			
	Aerator	0.00	387	12.72
	Showerhead	0.00	2,816	254.90
	Showerhead and TSV	0.00	208	0.00
	TSV	0.00	274	5.40
	Weatherization Measures			
	Door Sweep	0.00	3	0.00
	Foam Sealant	0.00	1,601	462.25
	Weather Strip	0.00	10	0.00
	Subtotal	16.34	745,672	54,657.16
RG&E	Advanced Power Strip	1.70	15,690	0.00
	Air Purifier	2.02	17,592	0.00
	Room AC	0.00	0	0.00
	Pipe Insulation	0.00	0	0.00
	Smart Plug	0.00	0	0.00
	Sealed	0.00	0	0.00
	Thermostat	0.00	190,851	50,408.42
	Kit Measures			
	Water Conservation Kit	0.00	5,048	159.58
	Electric Savings Kit	0.03	230	0.00
	Energy Saving Kit	0.23	10,111	228.62
	Energy Saving Kit Plus	0.01	237	9.76
	Weatherization Kit	1.71	6,184	2,184.40
	Window Film Kit	0.00	231	136.65
	Water Savings Measures			
	Aerator	0.00	0	5.83
	Showerhead	0.00	1,065	543.21
	Showerhead and TSV	0.00	0	11.29
	TSV	0.00	0	5.20
	Weatherization Measures			
	Door Sweep	0.00	0	0.00
	Foam Sealant	0.00	187	208.72

Utility	PY2024 Measures	Gross Demand Savings (kW)	Gross Electric Savings (kWh)	Gross Fuel Savings (Therms)
	Weather Strip	0.00	0	0.00
	Subtotal	5.68	247,426	53,901.68
Total		22.02	993,099	108,558.84

3. Evaluation

The goal of the impact evaluation was to determine VGS such that new AP RRs can be applied for current and future annual fuel savings, energy savings, and summer peak demand reduction estimates. Additional calculations are conducted to determine lifetime energy savings and program cost-effectiveness. The impact evaluation consisted of a review of program data, primary data collection through a participant survey, and the calculation of verified savings results. Details on the evaluation methodologies can be found in Appendix A. The participant survey questions can be found in Appendix B.

3.1 Data Review

Provided program data was reviewed for completeness, systematic issues, and inconsistencies before any evaluation work. No issues were found with the provided data.

3.2 2023 Survey

Data collection for verification of savings algorithm inputs was conducted through a participant survey administered in 2023. The survey was conducted online and sent to 2,694 customers, of which 190 customers completed it (customers may have purchased more than one measure, leading to a larger number of completes on a measure level). The survey included questions used to determine ISR and variables influencing NY TRM algorithms for annual fuel, electric, and demand savings for each measure.

3.2.1 Sample Design

A sample of customers was used to recruit survey respondents such that the number of respondents represented the population within 10% precision at a 90% confidence interval. Table 3-1 shows the participant survey sample design and response goal. Due to the small number of Sealed participants, they were excluded from the survey.

Table 3-1: Sample Design

Measure(s)	Rebate Quantity	Population (incl. returns)	Population (excl. returns)	Design Sample Size	Response Goal
Advanced Power Strip	2,250	1,323	1,306	636	60
Air Purifier	227	211	210	210	15
LED	31,802	1,823	1,411	758	67
Thermostat	5,229	4,380	4,151	835	67

Measure(s)	Rebate Quantity	Population (incl. returns)	Population (excl. returns)	Design Sample Size	Response Goal
Kit Measures					
Water Conservation Kit	157	127	127	127	60
Electric Savings Kit	3	3	3	3	
Energy Saving Kit	519	418	417	417	
Weatherization Kit	118	98	98	98	
Window Film Kit	136	60	60	60	
Water Savings Measures					
Aerator	51	30	30	30	35
Showerhead	270	211	209	209	
Showerhead and TSV	35	30	30	30	
TSV	12	8	8	8	
Total	40,809	8,725	8,063	3,421	304

3.2.2 Survey Results

The response rate for the survey was 7%. Table 3-2 summarizes the response results by measure group from the survey.

Table 3-2: Survey Results

Measure	Population	Response Goal	Completed Responses	% Completes
Advanced Power Strip	2,250	60	70	117%
Air Purifier	227	15	11	73%
LED	31,802	67	952	1421%
Thermostat	5,229	67	62	93%
Water Conservation Kit	157	60	16	113%
Electric Savings Kit	3		0	
Energy Saving Kit	519		35	
Weatherization Kit	118		9	
Window Film Kit	136		8	
Aerator	51	35	9	126%
Showerhead	270		28	
Showerhead and TSV	35		7	
TSV	12		0	
Total	40,809	304	1,207	397%

3.3 2024 Attribution Survey

Some of the measures in the 2023 survey did not receive enough responses to accurately determine ISRs and other information for calculating savings. Therefore, the 2024 attribution survey was expanded to include the necessary questions to determine ISRs and evaluate savings. Questions regarding weatherization measures installation and fuel types were included in the attribution survey that was administered in Q2 of 2024. The survey was conducted online and included questions used to determine ISR and variables influencing NY TRM algorithms for annual fuel, electric, and demand savings for each measure.

Information was gathered from the survey including installation rates for the Weatherization Kit. Results for this measure can be found in the table below (Table 3-3).

Table 3-3: Weatherization Kit survey results

Measure(s)	Survey	Rebate Quantity	Sample	Completed Responses	% Completes
Weatherization Kit	2024 Attribution Study	142	138	25	18%

3.3.1 Additional Sources

A few measures had minimal or no responses from the survey efforts, or were new measures incorporated into the program after the survey efforts were completed. The Illinois TRM v12 was utilized to determine ISRs and energy savings for these measures. See section 3.5.1 for details.

Additionally, a few measures did not have EUL values listed in the NY TRM v11. For these measures, the most recent PA TRM was utilized. These measures include:

- Self-stick door sweeps
- Corner doorjamb pads
- Rope door and window caulk
- Switch and outlet gaskets
- Adhesive weather strips

3.4 PY2023 Impact Evaluation Findings

Verified Gross Savings were determined for all measures, excluding thermostats, based on an engineering analysis using algorithms in the NY TRM and a participant survey. Verified Gross Savings for programmable and controlled thermostats were determined through a billing regression analysis. The methodology used for this analysis can be found in Appendix A. This section presents evaluation findings for Verified Gross Savings at the program level.

3.4.1 Q1-Q2 PY2024 Program Verified Gross Savings

Q1-Q2 PY2024 Verified Gross Savings are summarized in Table 3-4 through Table 3-6 for annual fuel savings, annual electric savings, and electric peak demand reduction.

Table 3-4: Q1-Q2 PY2024 Verified Gross Savings Summary – Fuel (Therms)

Utility	Measure	Gross Savings (Therms)	Verified Gross Savings (Therms)	Realization Rate (Therms)
NYSEG	Advanced Power Strip	NA	NA	NA
	Air Purifier	NA	NA	NA
	Room AC	NA	NA	NA
	Pipe Insulation	NA	6.04	NA
	Smart Plug	NA	NA	NA
	Sealed	885.60	1,216.91	137%
	Thermostat - Programmable	7,497.72	1,466.74	20%

Utility	Measure	Gross Savings (Therms)	Verified Gross Savings (Therms)	Realization Rate (Therms)
	Thermostat - Smart/Connected	43,996.90	13,796.08	31%
	Kit Measures			
	Water Conservation Kit	40.01	25.14	63%
	Electric Savings Kit	NA	NA	NA
	Energy Saving Kit	165.90	72.76	44%
	Energy Saving Kit Plus	70.85	48.05	68%
	Weatherization Kit	1,264.92	594.14	47%
	Window Film Kit	NA	NA	-
	Water Savings Measures			
	Aerator	12.72	12.72	100%
	Showerhead	254.90	194.65	76%
	Showerhead and TSV	NA	NA	NA
	TSV	5.40	4.32	80%
	Weatherization Measures			
	Door Sweep	NA	12.30	NA
	Foam Sealant	462.25	286.99	62%
	Weather Strip	NA	13.67	-
	Subtotal	54,657.16	17,750.51	32%
RG&E	Advanced Power Strip	NA	NA	NA
	Air Purifier	NA	NA	NA
	Room AC	NA	NA	NA
	Pipe Insulation	NA	NA	NA
	Smart Plug	NA	NA	NA
	Sealed	NA	NA	NA
	Thermostat - Programmable	4,397.69	807.95	18%
	Thermostat - Smart/Connected	46,010.74	14,358.76	31%
	Kit Measure			
	Water Conservation Kit	159.58	96.89	61%
	Electric Savings Kit	NA	NA	NA
	Energy Saving Kit	228.62	100.36	44%
	Energy Saving Kit Plus	9.76	6.61	68%
	Weatherization Kit	2,184.40	989.27	45%
	Window Film Kit	136.65	84.81	62%
	Water Savings Measures			

Utility	Measure	Gross Savings (Therms)	Verified Gross Savings (Therms)	Realization Rate (Therms)
	Aerator	5.83	5.83	100%
	Showerhead	543.21	397.55	73%
	Showerhead and TSV	11.29	9.03	80%
	TSV	5.20	4.16	0%
	Weatherization Measures			
	Door Sweep	NA	NA	NA
	Foam Sealant	208.72	120.97	58%
	Weather Strip	NA	NA	NA
	Subtotal	53,901.68	16,982.18	32%
Total		108,558.84	34,732.69	32%

Table 3-5: Q1-Q2 PY2024 Verified Gross Savings Summary – Electric (kWh)

Utility	Measure	Gross Savings (kWh)	Verified Gross Savings (kWh)	Realization Rate (kWh)
NYSEG	Advanced Power Strip	55,848	35,243	63%
	Air Purifier	50,851	50,851	100%
	Room AC	606	606	100%
	Pipe Insulation	1,107	782	71%
	Smart Plug	374	320	86%
	Sealed	791	917	116%
	Thermostat - Programmable	51,743	57,271	111%
	Thermostat - Smart/Connected	544,902	113,334	21%
	Kit Measures			
	Water Conservation Kit	3,375	2,116	63%
	Electric Savings Kit	633	457	72%
	Energy Saving Kit	14,560	7,220	50%
	Energy Saving Kit Plus	2,192	2,179	99%
	Weatherization Kit	13,246	8,397	63%
	Window Film Kit	145	100	69%
	Water Savings Measures			
	Aerator	387	408	105%
	Showerhead	2,816	2,255	80%
	Showerhead and TSV	208	167	80%
	TSV	274	219	80%
	Weatherization Measures			

Utility	Measure	Gross Savings (kWh)	Verified Gross Savings (kWh)	Realization Rate (kWh)
	Door Sweep	3	0	0%
	Foam Sealant	1,601	1,936	121%
	Weather Strip	10	10	100%
	Subtotal	745,672	284,789	38%
RG&E	Advanced Power Strip	15,690	10,137	65%
	Air Purifier	17,592	17,592	100%
	Room AC	NA	NA	100%
	Pipe Insulation	NA	NA	100%
	Smart Plug	NA	NA	100%
	Sealed	NA	NA	100%
	Thermostat - Programmable	23,254	21,246	91%
	Thermostat - Smart/Connected	167,597	72,538	43%
	Kit Measure			
	Water Conservation Kit	5,048	3,071	61%
	Electric Savings Kit	230	166	72%
	Energy Saving Kit	10,111	5,025	50%
	Energy Saving Kit Plus	237	235	99%
	Weatherization Kit	6,184	4,154	67%
	Window Film Kit	231	227	98%
	Water Savings Measures			
	Aerator	NA	NA	-
	Showerhead	1,065	852	80%
	Showerhead and TSV	NA	NA	-
	TSV	NA	NA	-
	Weatherization Measures			
	Door Sweep	NA	NA	-
	Foam Sealant	187	355	189%
	Weather Strip	NA	NA	-
	Subtotal	247,426	135,599	55%
Total		993,099	420,388	42%

Table 3-6: Q1-Q2 PY2024 Verified Gross Savings Summary – Summer Peak Demand Reduction (kW)

Utility	Measure	Gross Savings (kW)	Verified Gross Savings (kW)	Realization Rate (kW)
NYSEG	Advanced Power Strip	6.06	3.81	63%
	Air Purifier	5.83	5.83	100%
	Room AC	0.75	0.75	100%
	Pipe Insulation	0.13	0.09	71%
	Smart Plug	0.05	0.04	86%
	Sealed	NA	NA	100%
	Thermostat - Programmable	NA	NA	100%
	Thermostat - Smart/Connected	NA	NA	100%
	Kit Measures			
	Water Conservation Kit	NA	NA	100%
	Electric Savings Kit	0.07	0.05	72%
	Energy Saving Kit	0.32	0.23	72%
	Energy Saving Kit Plus	0.06	0.04	72%
	Weatherization Kit	3.08	0.60	19%
	Window Film Kit	NA	NA	100%
	Water Savings Measures			
	Aerator	NA	NA	100%
	Showerhead	NA	NA	100%
	Showerhead and TSV	NA	NA	100%
	TSV	NA	NA	100%
	Weatherization Measures			
	Door Sweep	NA	NA	100%
	Foam Sealant	NA	NA	100%
	Weather Strip	NA	NA	100%
	Subtotal	16.34	11.45	70%
RG&E	Advanced Power Strip	1.70	1.09	64%
	Air Purifier	2.02	2.02	100%
	Room AC	NA	NA	100%
	Pipe Insulation	NA	NA	100%
	Smart Plug	NA	NA	100%
	Sealed	NA	NA	100%
	Thermostat - Programmable	NA	NA	100%

Utility	Measure	Gross Savings (kW)	Verified Gross Savings (kW)	Realization Rate (kW)
	Thermostat - Smart/Connected	NA	NA	100%
	Kit Measure			
	Water Conservation Kit	NA	NA	100%
	Electric Savings Kit	0.03	0.02	63%
	Energy Saving Kit	0.23	0.16	72%
	Energy Saving Kit Plus	0.01	0.00	72%
	Weatherization Kit	1.71	0.30	18%
	Window Film Kit	NA	NA	100%
	Water Savings Measures			
	Aerator	NA	NA	100%
	Showerhead	NA	NA	100%
	Showerhead and TSV	NA	NA	100%
	TSV	NA	NA	100%
	Weatherization Measures			
	Door Sweep	NA	NA	100%
	Foam Sealant	NA	NA	100%
	Weather Strip	NA	NA	100%
	Subtotal	5.68	3.60	63%
Total		22.02	15.04	68%

Lifetime Verified Gross Savings were calculated by multiplying Verified Gross Savings by the effective useful life (EUL). Lifetime savings results are shown in Table 3-7.

Table 3-7: Lifetime Energy Savings

Measure(s)	EUL	Lifetime VGS (Fuel Therms)	Lifetime VGS (kWh)
Advanced Power Strip	8	NA	363,044
Air Purifier	9	NA	615,989
Room AC	12	NA	7,268
Pipe Insulation	15	NA	49,128
Smart Plug	7	NA	2,238
Sealed	17	20,687.50	15,592
Thermostat - Programmable	11	25,021.59	863,688

Measure(s)	EUL	Lifetime VGS (Fuel Therms)	Lifetime VGS (kWh)
Thermostat - Smart/Connected	11	309,703.24	2,044,596
Kit Measures			
Water Conservation Kit	10	1,220.25	51,876
Electric Savings Kit	8	0.00	4,352
Energy Saving Kit	9.14	1,731.22	86,313
Energy Saving Kit Plus	9.52	546.56	23,620
Weatherization Kit	13.62	43,730.13	137,832
Window Film Kit	1	84.81	326
Water Savings Measures			
Aerator	10	185.45	4,083
Showerhead	10	5,921.94	31,077
Showerhead and TSV	10	90.32	1,666
TSV	10	84.80	2,192
Weatherization Measures			
Door Sweep	15	184.50	NA
Foam Sealant	15	6,119.46	34,159
Weather Strip	15	205.00	146
Total		416,045	4,335,362

3.5 VGS Attributes & Realization Rate Factors

In the participant survey, VGS attributes such as space heating fuel, DHW heating fuel, and in-service rate (ISR) information from recipients were collected. This information was combined with engineering assumptions to calculate VGS savings. The sections below present findings and their impacts on VGS.

3.5.1 ISRs

Due to low participation and low response rates in the participant survey, the IL TRM v12 was utilized for some In-Service Rate (ISR) values. Table 3-8 summarizes the measure ISRs and source for each. Additionally, ISR values were grouped for similar measures. For example, Showerheads + TSVs and TSVs were grouped with standalone showerheads.

Table 3-8: Measure ISRs and Sources

Measure	Kit Measures	ISR	Source
Aerator	NA	100%	2023 Participant Survey
Air Purifier	NA	100%	2023 Participant Survey
Advanced Power Strip (APS)	NA	71%	2023 Participant Survey
Showerhead	NA	80%	2023 Participant Survey
Showerhead + TSV	NA	80%	2023 Participant Survey (similar measure)
TSV	NA	80%	2023 Participant Survey (similar measure)
Window Film Kit	NA	69%	IL TRM V12
Energy Saving Kit	Aerator	36%	2023 Participant Survey
	Showerhead	52%	2023 Participant Survey
	APS	81%	2023 Participant Survey
Weatherization Kit	Door Sweeps	64%	2024 Attribution Study
	Doorjamb Pads	54%	2024 Attribution Study
	Rope Caulk	54%	2024 Attribution Study
	Window Film Kit	34%	2024 Attribution Study
	Switch Gaskets	55%	2024 Attribution Study
	Outlet Gaskets	55%	2024 Attribution Study
	Weather Strips	51%	2024 Attribution Study
	Pipe Insulation	54%	2024 Attribution Study
Water Kit	Bubble Aerator	60%	IL TRM V12
	Kitchen Aerator	60%	IL TRM V12
	Showerheads	65%	IL TRM V12
Electric Savings Kit	APS	81%	2023 Participant Survey (similar measure)
Energy Saving Kit Plus	Bubble Aerator	36%	2023 Participant Survey (similar measure)
	Kitchen Aerator	36%	2023 Participant Survey (similar measure)
	Showerhead	52%	2023 Participant Survey (similar measure)
	APS	81%	2023 Participant Survey (similar measure)
Room AC	NA	100%	Rhode Island 2023 TRM
Foam Sealant	NA	69%	IL TRM v12

Measure	Kit Measures	ISR	Source
Smart Plugs	NA	85.60%	IL TRM v12
Door Sweep (standalone)	NA	68%	IL TRM v12
Weather Strip (standalone)	NA	72%	IL TRM v12
Pipe Insulation (standalone)	NA	100%	IL TRM v12

3.5.2 Advanced Power Strips

Verified Gross Savings realization rates for the measure across both utilities are shown in Table 3-9.

Table 3-9: APS Realization Rates

VGS RR kWh	VGS RR kW	VGS RR Fuel (Therms)
63%	63%	NA

A comparison of inputs that led to the difference between gross and verified savings is reported in Table 3-10. Advanced power strips are offered as a standalone measure on Smart Solutions websites.

Table 3-10: APS VGS Calculation Factors

Attribute	GS Input	VGS Input	VGS Reference	Recommendation
Type	Tier 1 or Tier 2	Tier 1 or Tier 2	Device specifications	No recommendation
Connected Equipment	Unknown	Tier 1: 41% AV and 59% IT+Other Split Tier 2: AV Equipment	2023 Participant Survey	Update deemed savings in GS calculations (based on updated installed equipment and baseline values)
Baseline	Tier 1: Standard Power Strip Tier 2: Unknown	Tier 1: Standard Power Strip Tier 2: Standard Power Strip	2023 Participant Survey	
Deemed Savings	57.5 kWh/unit 158.9 kWh/unit	41.02 kWh/unit 234 kWh/unit	NY TRM v11 / 2023 Participant Survey	
Deemed Savings	0.006267 kW/unit 0.015795 kW/unit	0.003174 kW/unit 0.016515 kW/unit		
Hours Off	7340 hrs/yr 8048 hrs/yr	7340 hrs/yr 8048 hrs/yr	NY TRM v11	No recommendation
CF	0.8	0.8		No recommendation
ISR	NA	71%	2023 Participant Survey	Adopt ISR in GS calculations if there is a desire to optimize realization rates

The impact evaluation found three primary realization rate factors contributing to the differences between gross and verified gross energy savings in the Smart Solutions Program. Figure 3-1 shows the relative impact of each factor. The realization rate factors are:

1. In-service rate (ISR).
2. Type of connected equipment.
3. Type of baseline.

Factor 1: The Gross Savings calculator does not include any ISR in the calculations. From the survey conducted on the Q1 – Q3 2023 participants, a realization rate of 71% was determined. This ISR is equivalent to the IL TRM v12 Time of Sale ISR for Advanced Power Strips.

Factor 2: In the 2023 survey, customers were asked questions to determine what equipment was plugged into each outlet type on the APS. From the answers it was determined that the Tier 1 APSs have a split of 41% Audio/Visual (AV) equipment and 59% Information Technology (IT)

equipment and other small loads. The reported savings utilize the unknown value in the TRM which is a weighted average where 60% of Tier 1 APS applications are used for AV equipment and 40% for IT and other smaller load applications. It was determined from the survey that Tier 2 APSs are also utilized in IT equipment set ups. However, the TRM assumes the connected equipment is always AV equipment for Tier 2 APS values. Therefore, for this evaluation, Tier 2 APS savings utilized the deemed value for AV connected equipment. It is recommended that deemed savings values are determined and added to the TRM for Tier 2 APSs connected with IT equipment.

Factor 3: In the 2023 survey, customers were also asked questions to determine what equipment the new APS was replacing. Participants reported that the baseline for both Tier 1 and Tier 2 APS are standard power strips (86% for Tier 1, 100% for Tier 2). The reported savings assume a standard power strip for Tier 1 and an unknown baseline for Tier 2.

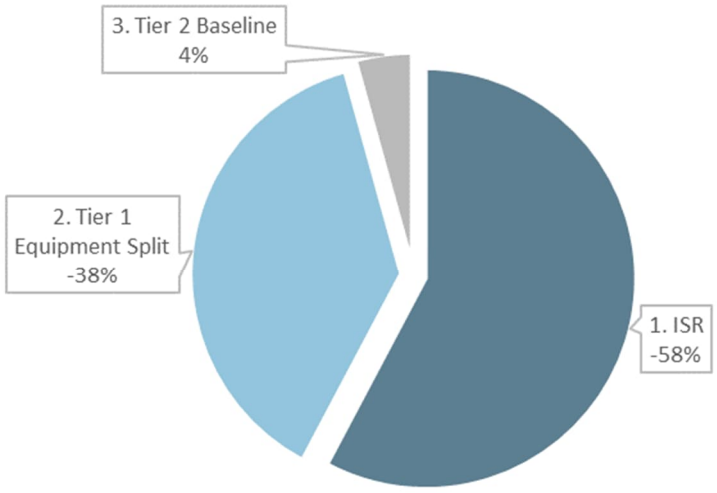


Figure 3-1: Relative impact of each factor on the APS VGS RR for kWh savings and kW demand reduction.

3.5.3 Smart Plugs

Verified Gross Savings realization rates for the measure across both utilities are shown in Table 3-11.

Table 3-11: Smart Plugs Realization Rates

VGS RR kWh	VGS RR kW	VGS RR Fuel (Therms)
86%	86%	NA

A comparison of inputs that led to the difference between gross and verified savings is reported in Table 3-12. Smart plugs are offered as a standalone measure on Smart Solutions websites.

Table 3-12: Smart Plugs VGS Calculation Factors

Attribute	GS Input	VGS Input	VGS Reference	Recommendation
Deemed Savings	46.69 kWh/unit	46.69 kWh/unit	IL TRM v12 vol3	No recommendation
Deemed Savings	0.0064 kW/unit	0.0064 kW/unit		
CF	0.8	0.8		
ISR	NA	85.6%		Adopt ISR in GS calculations if there is a desire to optimize realization rates

The impact evaluation found one primary realization rate factor contributing to the differences between gross and verified gross energy savings in the Smart Solutions Program. The realization rate factor is:

1. In-service rate (ISR).

Factor 1: The Gross Savings calculator does not include any ISR in the calculations. An ISR of 85.6 percent, sourced from the IL TRM[2] was utilized.

3.5.4 Air Purifier

Verified Gross Savings realization rates for the measure across both utilities are shown in Table 3-13.

Table 3-13: Air Purifier Realization Rates

VGS RR kWh	VGS RR kW	VGS RR Fuel (Therms)
100%	100%	NA

A comparison of inputs that led to the difference between gross and verified savings is reported in Table 3-14. The impact evaluation found no differences between gross and verified gross energy savings in the Smart Solutions Program for air purifiers.

[2] IL TRM v12 vol3, found online: https://www.ilsag.info/illinois-statewide-technical-reference-manual-version-12-0/

Table 3-14: Air Purifiers VGS Calculation Factors

Attribute	GS Input	VGS Input	VGS Reference	Recommendation
Standby Power	HPA100: 0.07 Watts HFD280B: 0.6 Watts HPA3100B: 0.2 Watts HPA3300B: 0.2 Watts HPA5300B: 0.2 Watts HPA5100B: 0.2 Watts	HPA100: 0.07 Watts HFD280B: 0.6 Watts HPA3100B: 0.2 Watts HPA3300B: 0.2 Watts HPA5300B: 0.2 Watts HPA5100B: 0.2 Watts	Energy Star	No recommendation
Operating Hours	5840	5840	NY TRM v11	
Clean Air Delivery Rate (CADR)	HPA100: 100 cfm HFD280B: 98 cfm HPA3100B: 129 cfm HPA3300B: 342 cfm HPA5300B: 323 cfm HPA5100B: 125 cfm	HPA100: 100 cfm HFD280B: 98 cfm HPA3100B: 129 cfm HPA3300B: 342 cfm HPA5300B: 323 cfm HPA5100B: 125 cfm	Energy Star	
Efficiency	HPA100: 2.5 cfm/Watt HFD280B: 7.3 cfm/Watt HPA3100B: 2.5 cfm/Watt HPA3300B: 3.1 cfm/Watt HPA5300B: 3 cfm/Watt HPA5100B: 2.4 cfm/Watt	HPA100: 2.5 cfm/Watt HFD280B: 7.3 cfm/Watt HPA3100B: 2.5 cfm/Watt HPA3300B: 3.1 cfm/Watt HPA5300B: 3 cfm/Watt HPA5100B: 2.4 cfm/Watt	Energy Star	
CF	0.67	0.67	NY TRM v11	
ISR	NA	100%	2023 Participant Survey	

3.5.5 Room Air Conditioner

Verified Gross Savings realization rates for the measure across both utilities are shown in Table 3-15.

Table 3-15: Room Air Conditioner Realization Rates

VGS RR kWh	VGS RR kW	VGS RR Fuel (Therms)
100%	100%	NA

A comparison of inputs that led to the difference between gross and verified savings is reported in Table 3-16. The impact evaluation found no differences between gross and verified gross energy savings in the Smart Solutions Program for room air conditioners.

Table 3-16: Room Air Conditioner VGS Calculation Factors

Attribute	GS Input	VGS Input	VGS Reference	Recommendation
BTU/h	LW8024IVSM: 8,500 08W2Wi: 8,000 10W2Wi: 10,000 LW1022IVSM.X: 10,000 LW1222IVSM.X: 10,000	LW8024IVSM: 8,500 08W2Wi: 8,000 10W2Wi: 10,000 LW1022IVSM.X: 10,000 LW1222IVSM.X: 10,000	Energy Star	No recommendation
CEER baseline	LW8024IVSM: 10.9 08W2Wi: 10.9 10W2Wi: 10.9 LW1022IVSM.X: 10.9 LW1222IVSM.X: 10.9	LW8024IVSM: 10.9 08W2Wi: 10.9 10W2Wi: 10.9 LW1022IVSM.X: 10.9 LW1222IVSM.X: 10.9	NY TRM v11	
CEER Efficient	LW8024IVSM: 15 08W2Wi: 15 10W2Wi: 15 LW1022IVSM.X: 15 LW1222IVSM.X: 15	LW8024IVSM: 15 08W2Wi: 15 10W2Wi: 15 LW1022IVSM.X: 15 LW1222IVSM.X: 15	Energy Star	
EFLH, Cooling	Varies based on weatherized city	Varies based on weatherized city	NY TRM v11	
CF	0.3	0.3	NY TRM v11	
ISR	NA	100%	Rhode Island 2023 TRM	

3.5.6 Thermostats

Verified Gross Savings realization rates for the measure across both utilities are shown in Table 3-17. Verified savings results are presented with a consistent reporting structure to match the NY TRM and program tracking data.

Table 3-17: Thermostat Realization Rates

Thermostat	VGS RR kWh	VGS RR kW	VGS RR Fuel (Therms)
Programmable	105%	0%	18%
Connected	26%	0%	31%

The evaluation utilized a pre-post billing regression model approach for the impact evaluation of smart and programmable thermostats rebated through the program, involving sixteen panel linear regression models to estimate energy savings for the program. The panel linear regression models were split into the following fuel type uses and thermostat type based on program tracking data:

1. *Electric Cooling and Heating – All (Connected) - kWh*
2. *Electric Cooling and Heating - All (Programmable) - kWh*
3. *Electric Cooling (Connected) - kWh*
4. *Electric Cooling (Programmable) - kWh*
5. *Electric Heating (Connected) - kWh*
6. *Electric Heating (Programmable) - kWh*
7. *Electric Cooling and Heating – non-Heat Pump (Connected) - kWh*
8. *Electric Cooling and Heating – non-Heat Pump (Programmable) - kWh*
9. *Electric Cooling and Heating – Heat Pump (Connected) - kWh*
10. *Electric Cooling and Heating – Heat Pump (Programmable) - kWh*
11. *Electric Cooling and Gas Heating (Connected) - kWh*
12. *Electric Cooling and Gas Heating (Programmable) - kWh*
13. *Gas Heating kWh due to reduced blower fan runtime (Connected) - kWh*
14. *Gas Heating kWh due to reduced blower fan runtime (Programmable) - kWh*
15. *Gas Heating (Connected)*
16. *Gas Heating (Programmable)*

For each approach, the provided monthly billing data was reviewed for completeness and errors as well as calendarized before analysis. Further details of the methodology can be found in 4.2.1Appendix A.

3.5.6.1 Survey Results

In the Q1-Q3 2023 survey, thermostat participants were asked what product they replaced with a connected thermostat. The table below highlights the results. Most smart thermostat purchasers replaced a programmable thermostat. This means that those participants were already seeing the incremental savings with the programmable thermostat. That is to say, the improvement in savings is not as large as replacing a programmable thermostat with a connected thermostat as it would be to replace a manual thermostat. Additionally, 18% of respondents who purchased a connected thermostat were replacing a connected thermostat, indicating even smaller incremental savings, if any at all.

The baseline was also investigated for respondents who purchased a programmable thermostat (Honeywell Home Wi-Fi Color Touchscreen Programmable Thermostat or Honeywell Home Wi-Fi 7-Day Programmable Thermostat) and found that half are replacing an existing programmable thermostat. However, with such a small sample size, the results are not conclusive.

Table 3-18: Thermostat Baseline based on Q1-Q3 2023 participant survey

Thermostat Being Replaced (Baseline)	Responses	Percentage
Smart Thermostat Purchase		
None	1	2%
Manual	9	20%
Programmable Thermostat	27	60%
Connected Thermostat	8	18%
Total	45	
Programmable Thermostat Purchase		
None	1	17%
Manual	2	33%
Programmable Thermostat	3	50%
Total	6	

3.5.6.2 Regression Results

This section provides the results from the panel linear regression analyses. Table 3-19 and Table 3-20 show the per device savings from the regression results Detailed results, including coefficients, p-values and adjusted R^2 for each model can be found in Appendix A.

Table 3-19: Thermostat Regression Results – Electric (kWh)

Device	Control Scenario	Sample Size	GS per device	VGS per device	VGS RR	Statistical Significance
Connected	All	1039	320.80	0.00	0.00	No
	Cooling Only[1]	132	86.95	109.08	1.25	Yes
	Heating Only	145	1,441.70	0.00	0.00	Yes
	Cooling and Heating (non-Heat Pump)	372	1,189.03	0.00	0.00	Yes
	Cooling and Heating (Heat Pump)	55	1,074.44	35.45	0.03	No
	Cooling and Gas Heating	612	89.92	79.51	0.88	No
	Gas Heating Only	612	0.00	0.00	-	No
Programmable	All	967	249.99	312.38	1.25	Yes
	Cooling Only[1]	128	92.66	307.91	3.32	Yes
	Heating Only	17	1,385.03	0.00	0.00	No
	Cooling and Heating (non-Heat Pump)	41	1,328.79	740.92	0.56	Yes
	Cooling and Heating (Heat Pump)	10	1,188.39	153.83	0.13	No
	Cooling and Gas Heating	81	97.41	108.16	1.11	No
	Gas Heating Only	81	0.00	0.00	-	No

1. Represents the control scenario in which savings are verified for Connected and Programmable thermostats for consistency with the NY TRM and program tracking data.

The Evaluator found significant savings for electric cooling in the post-period for both smart/connected and programmable thermostats. Savings for programmable thermostats during the cooling season were approximately three times the savings for connected thermostats. Additionally, no significant savings were found for electric heating in the post-period for either smart/connected or programmable thermostats. Results for both analyses showed an increase in usage during the post-period heating season. To confirm these results, additional analysis was conducted separating electric baseboards and heat pumps with results showing the same trend.

Of the cooling and electric heating analyses, statistically significant savings were only found for programmable devices for non-heat pump equipment. However, the Evaluator chose not to apply these savings as heating savings could not be found in the previous analysis and confidence in the model was relatively low (R^2 = 0.64). The Evaluator chose to only apply cooling savings for

both connected (109.08 kWh per device) and programmable thermostats (307.91 kWh per device).

Additional analyses were conducted to determine if there were any electric savings during the heating season associated with a reduction in blower fan runtime for gas heating customers. Table 3-19 shows the results of this analysis in which no significant savings for a reduction in blower fan runtime were found for either connected thermostats or programmable thermostats.

Due to the nature of the cooling season control strategy, no summer peak demand reduction is assumed for this energy efficiency measure.

The evaluation found statistically significant savings for gas heating in the post-period for connected thermostats, but savings were not statistically significant for programmable thermostats. The lack of statistical significance for programmable thermostats could be due to a relatively small sample size in the analysis (75 participants). While results for programmable thermostats were not significant, the Evaluator believes there are savings associated with programmable thermostats and applied the estimate as savings for these devices. To confirm this assumption, an additional analysis was run combining connected thermostats and programmable thermostats. This resulted in a lower savings estimate than that of connected thermostats on their own, but savings were still significant to the same degree. Results are shown in Table 3-20.

Table 3-20: Thermostat Regression Results – Gas (Therms)

Device	Analysis	Sample Size	GS per device	VGS per device	VGS RR	Is Significant
Connected	Gas Heating Only	393	31.20	20.84	0.67	Yes
Programmable	Gas Heating Only	75	25.10	12.43	0.50	No

3.5.6.3 Thermostat Recommendations

The Evaluator recommends the following based on the thermostat billing analysis conducted in this evaluation:

- Utilize the billing regression results for the VGS and AP RR values until a larger study can be conducted.
- Combine thermostats from all programs and conduct a full billing analysis next summer with two seasons of data. This analysis could utilize the difference-in-difference methodology (using a control group) and lead to more statistically significant results and increased model confidence.
- Explore a breakout of DAC and non-DAC participants in future analyses to determine if there are differences in savings potential due to baseline equipment.

- For the NY TRM development, investigations should be conducted in the energy savings factors for programmable thermostats and the gas savings for connected thermostats for programs that are not an online marketplace.

3.5.7 Electric Savings Kits

Verified Gross Savings realization rates for the measure across both utilities are shown in Table 3-21.

Table 3-21: Electric Savings Kits Realization Rates

VGS RR kWh	VGS RR kW	VGS RR Fuel (Therms)
72%	72%	NA

Electric Savings Kit contents are shown in Table 3-22. The kit includes LED measures that are no longer rebated; therefore, no savings are claimed for those measures.

Table 3-22: Electric Savings Kit Contents

Measure	Quantity	Claimed Savings?
Simply Conserve 9 watt A19 LED (4 pack)	4	No
Simply Conserve LED Nightlights	2	No
Simply Conserve 7-Outlet APS	1	Yes
MaxLite LED Slim Desk Lamp	1	No

A comparison of inputs that led to the difference between gross and verified savings is reported in Table 3-23.

Table 3-23: Electric Savings Kits VGS Calculation Factors

Attribute	GS Input	VGS Input	VGS Reference	Recommendation
Tier	Tier 1	Tier 1	NY TRM v11	No Recommendation
Baseline	Standard Power Strip	Standard Power Strip		
Connected Equipment	Unknown	46% AV 54% IT+Other Split	2023 Participant Survey	Update deemed savings in GS calculations (based on updated installed equipment and baseline values)
Deemed APS kWh Savings	57.5 kWh/unit	44.77 kWh/unit	NY TRM v11 / 2023 Participant Survey	
Deemed APS kW Demand Reduction	0.006267 kW/unit	0.00488 kW/unit		

Attribute	GS Input	VGS Input	VGS Reference	Recommendation
CF	0.8	0.8	NY TRM v11	No Recommendation
ISR	100%	81%	2023 Participant Survey	Adopt ISR in GS calculations if there is a desire to optimize realization rates

The impact evaluation found multiple primary realization rate factors contributing to the differences between gross and verified gross energy savings. Figure 3-2 shows the relative impact of each factor. The realization rate factors are:

1. In-Service Rate (ISR)
2. Equipment Split

Factor 1: The Gross Savings calculator does not include any ISR in the calculations. From the survey conducted on the Q1 – Q3 2023 participants, a realization rate of 81 percent was determined for APS in the Energy Saving Kit. As the Electric Savings Kit is a similar measure, but did not have enough responses from the 2023 survey, the same ISR was applied.

Factor 2: In the 2023 survey, customers were asked questions to determine what equipment was plugged into each outlet type on the APS that was included in the Energy Saving Kit. From the answers it was determined that the APSs have a split of 46% Audio/Visual (AV) equipment and 54% Information Technology (IT) equipment and other small loads. The reported savings utilize the unknown value in the TRM which is a weighted average where 60% of Tier 1 APS applications are used for AV equipment and 40% for IT and other smaller load applications. Similar to the ISR, as the Electric Savings Kit is a similar measure, but did not have enough responses from the 2023 survey, the same equipment split was applied.

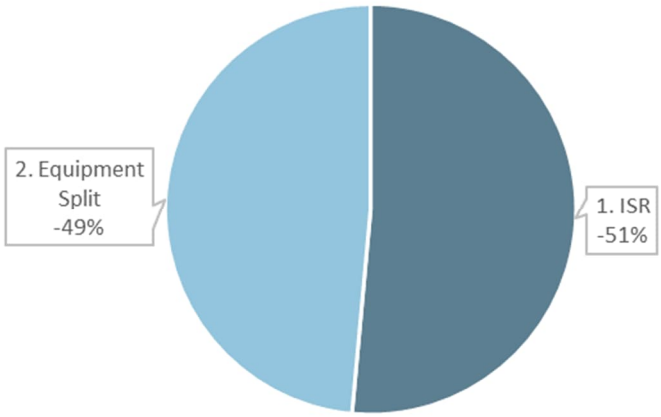


Figure 3-2: Relative impact of each factor on the Electric Savings Kit VGS RR for kWh savings and kW demand reduction.

3.5.8 Energy Savings Kits

Verified Gross Savings realization rates for the measure across both utilities are shown in Table 3-24.

Table 3-24: Energy Savings Kits Realization Rates

VGS RR kWh	VGS RR kW	VGS RR Fuel (Therms)
48%	63%	44%

Contents of the Energy Saving Kit are shown in Table 3-25. The kit includes LED measures that are no longer rebated; therefore, no savings are claimed for those measures.

Table 3-25: Energy Saving Kit Contents

Measure	Quantity	Claimed Savings?
9W A19 LED lightbulbs 2700K	4	No
Niagara Bubble Faucet Spray Aerator	1	Yes
Chrome Niagara Earth Showerhead	1	Yes
TrickleStar 7-Outlet Advanced Power Strip	1	Yes

A comparison of inputs that led to the difference between gross and verified savings is reported in Table 3-26.

Table 3-26: Energy Saving Kits VGS Calculation Factors

Attribute	GS Input	VGS Input	VGS Reference	Recommendation
APS Tier	Tier 1	Tier 1	NY TRM v11	No Recommendation
APS Baseline	Standard Power Strip	Standard Power Strip		
APS Connected Equipment	Unknown	46% AV 54% IT+Other Split	2023 Participant Survey	Update deemed savings in GS calculations (based on updated installed equipment and baseline values)
Deemed APS kWh Savings	57.5 kWh/unit	44.77 kWh/unit	NY TRM v11 / 2023 Participant Survey	
Deemed APS kW Demand Reduction	0.006267 kW/unit	0.00488 kW/unit		
CF	0.8	0.8	NY TRM v11	No Recommendation
ISR	100% for all measures	Aerator: 36% Showerhead: 52% Advanced Power Strip: 81%	2023 Participant Survey	Adopt ISR in GS calculations if there is a desire to optimize realization rates
Aerator Split	Kitchen: 33% Bathroom: 67%	Kitchen: 33% Bathroom: 67%	2023 Participant Survey	No recommendation
T_main	Varies by weatherized city	Varies by weatherized city	NY TRM v11	
T_Faucet / T_shower	Lavatory Aerator: 86 Non-Lavatory Aerator: 93 Shower: 104	Lavatory: 86 Non-Lavatory: 93 Shower: 104	NY TRM v11	
Efficient GPM	Bubble Aerator: 1 Showerhead: 1.5	Bubble Aerator: 1 Showerhead: 1.5	Model #	
Uniform Energy Factor (UEF)	Natural Gas: 0.5803 Electric: 0.9227 For all line items	36% ele and 64% gas water heater = 0.703564	2023 Participant Survey NY TRM v11	
Baseline GPM	Lavatory: 1.2 Non-Lavatory: 1.8 Showerhead: 1.8	Lavatory: 1.2 Non-Lavatory: 1.8 Showerhead: 1.8	NY TRM v11	
Mins/person/day aerator	Lavatory: 1.6 Non-Lavatory: 4.5	Lavatory: 1.6 Non-Lavatory: 4.5	NY TRM v11	

Attribute	GS Input	VGS Input	VGS Reference	Recommendation
Mins/use showerhead	8.2	8.2	NY TRM v11	
Uses/person/day	0.75	0.75	NY TRM v11	
F_Faucet / F_shower	Lavatory: 1.6 Non-Lavatory: 1 Shower: 1.4	Lavatory: 1.6 Non-Lavatory: 1	NY TRM v11	
Person/household	Aerators: 2.8 Showerhead: 1.5	Aerators: 2.8 Showerhead: 1.5	2023 Participant Survey and NY TRM v11	
Throttle factor, baseline	Aerator: 0.83 Showerhead: 0.9	Aerator: 0.83 Showerhead: 0.9	NY TRM v11	

The impact evaluation found multiple primary realization rate factors contributing to the differences between gross and verified gross energy savings. The impact of these realization rate factors is shown in Figure 3-3, Figure 3-4 and Figure 3-5. The realization rate factors are:

1. In-service rates (ISR)
2. APS Equipment Split

Factor 1: The Gross Savings calculation does not include an ISR in the calculations. From the survey conducted on the Q1 – Q3 participants, a realization rate for each measure within the kit was determined. The ISRs were found to be 36 percent for the aerator in the kit, 52 percent for the showerhead and 81 percent for the APS.

Factor 2: In the 2023 survey, customers were asked questions to determine what equipment was plugged into each outlet type on the APS that was included in the Energy Saving Kit. From the answers it was determined that the APSs have a split of 46% Audio/Visual (AV) equipment and 54% Information Technology (IT) equipment and other small loads. The reported savings utilize the unknown value in the TRM which is a weighted average where 60% of Tier 1 APS applications are used for AV equipment and 40% for IT and other smaller load applications.

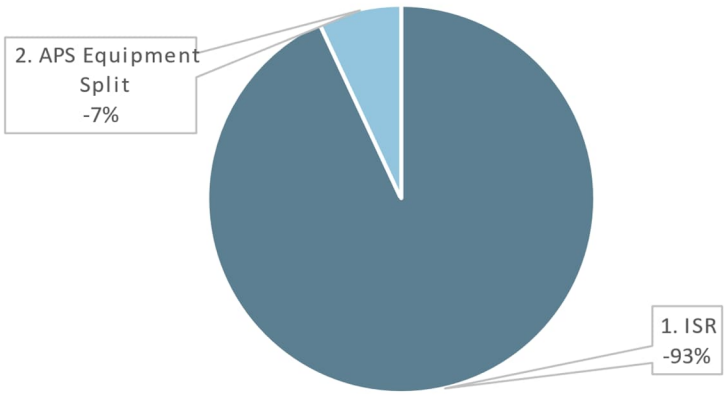


Figure 3-3: Relative Impact of Each Factor on the Energy Savings Kits VGS RR for kWh Savings.

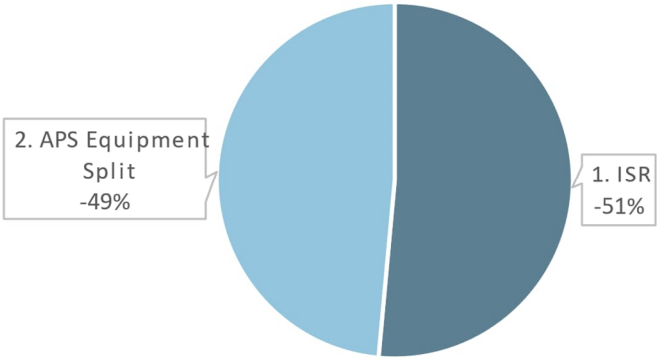


Figure 3-4: Relative Impact of Each Factor on the Energy Savings Kits VGS RR for Demand Reduction (kW).

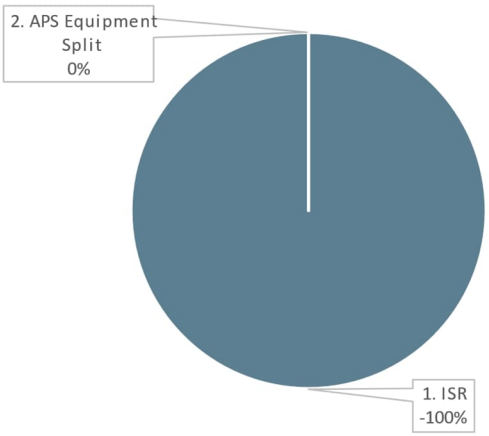


Figure 3-5: Relative Impact of Each Factor on the Energy Savings Kits VGS RR for Fuel Savings.

3.5.9 Energy Savings Kit Plus

Verified Gross Savings realization rates for the measure across both utilities are shown in Table 3-27.

Table 3-27: Energy Savings Kits Plus Realization Rates

VGS RR kWh	VGS RR kW	VGS RR Fuel (Therms)
97%	63%	68%

Contents of the Energy Saving Kit are shown in Table 3-28. The kit includes LED measures that are no longer rebated; therefore, no savings are claimed for those measures.

Table 3-28: Energy Saving Kit Plus Contents

Measure	Quantity	Claimed Savings?
Simply Conserve 9 watt A19 LED (4 pack)	4	No
Simply Conserve LED Nightlights	2	No
Simply Conserve 7-Outlet APS	1	Yes
MaxLite LED Slim Desk Lamp	1	No
Niagara Earth Showerhead	1	Yes
Niagara Dual Spray Kitchen Swivel Aerator	1	Yes
Niagara Bubble Spray Faucet Aerator	2	Yes

A comparison of inputs that led to the difference between gross and verified savings is reported in Table 3-29.

Table 3-29: Energy Saving Kits Plus VGS Calculation Factors

Attribute	GS Input	VGS Input	VGS Reference	Recommendation
APS Tier	Tier 1	Tier 1	NY TRM v11	No Recommendation
APS Baseline	Standard Power Strip	Standard Power Strip		
APS Connected Equipment	Unknown	46% AV 54% IT+Other Split	2023 Participant Survey	Update deemed savings in GS

Attribute	GS Input	VGS Input	VGS Reference	Recommendation
Deemed APS kWh Savings	57.5 kWh/unit	44.77 kWh/unit	NY TRM v11 / 2023 Participant Survey	calculations (based on updated installed equipment and baseline values)
Deemed APS kW Demand Reduction	0.006267 kW/unit	0.00488 kW/unit		
CF	0.8	0.8	NY TRM v11	No Recommendation
ISR	100% for all measures	Aerator: 36% Showerhead: 52% Advanced Power Strip: 81%	2023 Participant Survey	Adopt ISR in GS calculations if there is a desire to optimize realization rates
Aerator Split	Dual and Bubble Spray: 100% kitchen	Dual Spray: 50% kitchen, 50% bath. Bubble Spray: 57% kitchen, 43% bath.	2023 Participant Survey for Water Conservation Kit	Update to include splits, make clear which aerators should be installed in each location
T_main	Varies by weatherized city	Varies by weatherized city	NY TRM v11	No Recommendation
T_Faucet / T_shower	Lavatory Aerator: 86 Non-Lavatory Aerator: 93 Shower: 104	Lavatory: 86 Non-Lavatory: 93 Shower: 104	NY TRM v11	No Recommendation
Efficient GPM	Bubble Aerator: 1.5 Showerhead: 1.5	Bubble Aerator: 1 Showerhead: 1.5	Model #	Update model N3210B-PC
Uniform Energy Factor (UEF)	Natural Gas: 0.5803 Electric: 0.9227 For all line items	36% ele and 64% gas water heater = 0.703564	2023 Participant Survey NY TRM v11	No Recommendation
Baseline GPM	Lavatory: 1.2 Non-Lavatory: 1.8 Showerhead: 1.8	Lavatory: 1.2 Non-Lavatory: 1.8 Showerhead: 1.8	NY TRM v11	
Mins/person/day aerator	Lavatory: 1.6 Non-Lavatory: 4.5	Lavatory: 1.6 Non-Lavatory: 4.5	NY TRM v11	
Mins/use showerhead	8.2	8.2	NY TRM v11	
Uses/person/day	0.75	0.75	NY TRM v11	

Attribute	GS Input	VGS Input	VGS Reference	Recommendation
F_Faucet / F_shower	Lavatory: 1.6 Non-Lavatory: 1 Shower: 1.4	Lavatory: 1.6 Non-Lavatory: 1	NY TRM v11	
Person/household	Aerators: 2.8 Showerhead: 1.5	Aerators: 2.8 Showerhead: 1.5	2023 Participant Survey and NY TRM v11	
Throttle factor, baseline	Aerator: 0.83 Showerhead: 0.9	Aerator: 0.83 Showerhead: 0.9	NY TRM v11	

The impact evaluation found multiple primary realization rate factors contributing to the differences between gross and verified gross energy savings. The impact of these realization rate factors is shown in Figure 3-6, Figure 3-7, and Figure 3-8. The realization rate factors are:

1. In-service rates (ISR)
2. UEF value
3. APS equipment split
4. Aerator location
5. Bubble spray efficient GPM

Factor 1: The Gross Savings calculation does not include an ISR in the calculations. From the survey conducted on the Q1 – Q3 2023 participants, a realization rate for each measure within the Energy Saving Kit (ESK) was determined. The ISRs were found to be 36 percent for the aerator in the kit, 52 percent for the showerhead and 81 percent for the APS. As the Energy Savings Kit Plus is very similar to the ESK measure and there were not any Energy Savings Kit Plus participants to survey in 2023, the ESK ISRs were utilized.

Factor 2: As the water heating fuel type is not known for each purchase, the Verified Gross Savings analysis utilized the fuel split from the Q1 – Q3 2023 ESK survey respondents and calculated an average UEF. The split, listed in Table 3-29 was 36% electric fuel type and 64% gas fuel type.

Factor 3: In the 2023 survey, customers were asked questions to determine what equipment was plugged into each outlet type on the APS that was included in the Energy Saving Kit. From the answers it was determined that the APSs have a split of 46% Audio/Visual (AV) equipment and 54% Information Technology (IT) equipment and other small loads. The reported savings utilize the unknown value in the TRM which is a weighted average where 60% of Tier 1 APS applications are used for AV equipment and 40% for IT and other smaller load applications. Similar to the ISR, as the Electric Savings Kit is a similar measure, but did not have enough responses from the 2023 survey, the same equipment split was applied.

Factor 4: Based on the 2023 participant survey responses for the Water Conservation Kit that also includes two different aerators, the Dual Spray aerator is installed in both the bathroom and the kitchen at a 50/50 split. For the Bubble Spray, 57% were installed in the kitchen and 43% in the bathroom. When the Dual Spray aerator is installed in the bathroom, due to the efficient GPM, the resulting savings are negative.

Factor 5: One of aerators that is included in the Energy Saving Kit is the Niagara Bubble Faucet Spray Aerator which has a GPM of 1.0. The Gross Savings calculation uses a value of 1.5.

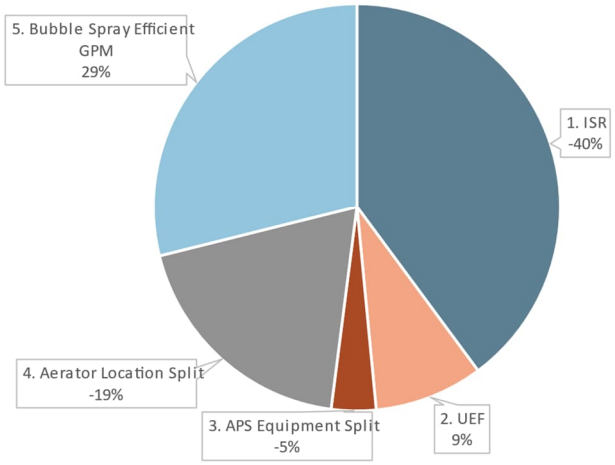


Figure 3-6: Relative Impact of Each Factor on the Energy Savings Kits Plus VGS RR for kWh Savings.

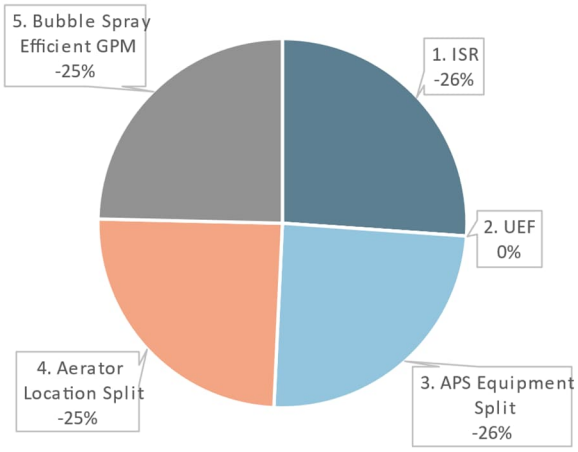


Figure 3-7: Relative Impact of Each Factor on the Energy Savings Kits Plus VGS RR for Demand Reduction (kW).

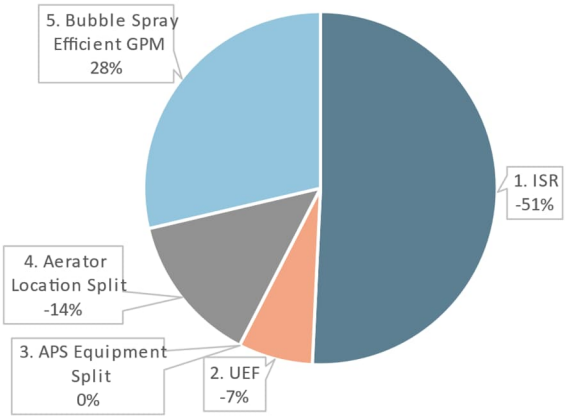


Figure 3-8: Relative Impact of Each Factor on the Energy Savings Kits Plus VGS RR for Fuel Savings.

3.5.10 Weatherization Measures

Weatherization measures sold through the Smart Solutions websites include standalone measures such as door sweeps, weather strips, foam sealant, window film kits and pipe insulation. Additionally, a weatherization kit is sold that bundles multiple weatherization measures.

3.5.10.1 Door Sweeps

Verified Gross Savings realization rates for the measure across both utilities are shown in Table 3-30. The latest proposed savings calculation methodology does not include an algorithm for summer peak demand reduction. Therefore, no summer peak demand reduction realization rate is provided.

Table 3-30: Door Sweeps Realization Rates

VGS RR kWh	VGS RR kW	VGS RR Fuel (Therms)
0%	NA	100%

A comparison of inputs that led to the difference between gross and verified savings is reported in Table 3-31.

Table 3-31: Door Sweeps VGS Calculation Factors

Attribute	GS Input	VGS Input	VGS Reference	Recommendation
Heating Degree Day (HDD)	Varies by weatherized city	Varies by weatherized city	Weatherization Products Proposed Measure	No recommendation
Cooling Degree Day (CDD)	Varies by weatherized city	Varies by weatherized city		
ΔCFM	1.26	1.26		
Ft	3	3		
SEER	13	13		
COP	3.22	3.22		
Electric Cooling Factor	Originally always 1, updated to: If electrically cooled = 1, else =0, unknown = 77%	If electrically cooled = 1, else =0, unknown = 77%		
Electric Heating Factor	Originally omitted, updated to: if electrically heated = 1, else = 0, unknown = 16%	If electrically heated = 1, else = 0, unknown = 16%		
Fuel Heating Factor	Originally always 1, updated to: If fuel heated = 1, else = 0, unknown = 84%	If fuel heated = 1, else = 0, unknown = 84%		
ISR/Safety Factor	0.5	0.69	IL TRM v12	Adopt ISR in GS calculations if there is a desire to optimize realization rates

The impact evaluation found multiple primary realization rate factors contributing to the differences between gross and verified gross energy savings. Figure 3-9 shows the relative impact of each factor for kWh savings. The only factor that impacts the Therms savings is the ISR. The realization rate factors are:

1. ISR

2. Fuel type (known vs. unknown)

Factor 1: The Gross Savings calculator includes an ISR/safety factor of 0.5 in the calculations. An ISR of 68 percent, sourced from the IL TRM[3] was utilized for the Verified Gross Savings calculations.

Factor 2: The Gross Savings calculator determines savings assuming 100% electric cooling in Q1 of 2024, and later was updated to utilize the fuel splits (electric heating 16%, natural gas furnace 84%), while the Verified Gross Savings calculates the savings specifically for the known fuel type and do not utilize the unknown fuel split This impacts the realization rates as the two door sweeps purchased were assumed to have kWh savings when instead it was determined that both were purchased by customers with propane fuel type with no central AC and therefore the only savings (heating) should have been delivered fuel savings.

Additional information: The Gross Savings calculator originally did not include any electric heating kWh savings. This was added in Q2 of 2024. The Verified Gross Savings calculations include savings for electric heating. However, this does not impact the realization rate as the two purchases of door sweeps in Q1-Q2 2024 were purchased by customers with propane fuel type with no central AC and therefore had no kWh cooling or heating savings.

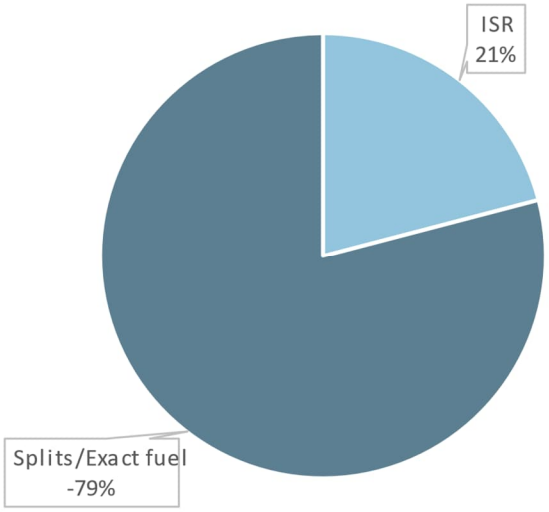


Figure 3-9: Relative impact of each factor on the door sweep VGS RR for kWh savings

3.5.10.2 Weather Strips

Verified Gross Savings realization rates for the measure across both utilities are shown in Table 3-32. The latest proposed savings calculation methodology does not include an algorithm for

[3] IL TRM v12 vol3, found online: https://www.ilsag.info/illinois-statewide-technical-reference-manual-version-12-0/

summer peak demand reduction. Therefore, no summer peak demand reduction realization rate is provided.

Table 3-32: Weather Strips Realization Rates

VGS RR kWh	VGS RR kW	VGS RR Fuel (Therms)
100%	NA	100%

A comparison of inputs that led to the difference between gross and verified savings is reported in Table 3-33.

Table 3-33: Weather Strips VGS Calculation Factors

Attribute	GS Input	VGS Input	VGS Reference	Recommendation
Heating Degree Day (HDD)	Varies by weatherized city	Varies by weatherized city	Weatherization Products Proposed Measure	No recommendation
Cooling Degree Day (CDD)	Varies by weatherized city	Varies by weatherized city		
ΔCFM	0.233333	0.233333		
Ft	17	17		
SEER	13	13		
COP	3.22	3.22		
Electric Cooling Factor	Originally always 1, updated to: If electrically cooled = 1, else =0, unknown = 77%	If electrically cooled = 1, else =0, unknown = 77%		
Electric Heating Factor	Originally omitted, updated to: if electrically heated = 1, else = 0, unknown = 16%	If electrically heated = 1, else = 0, unknown = 16%		
Fuel Heating Factor	Originally always 1, updated to:	If fuel heated = 1, else = 0, unknown = 84%		

Attribute	GS Input	VGS Input	VGS Reference	Recommendation
	If fuel heated = 1, else = 0, unknown = 84%			
ISR/Safety Factor	0.5	0.72	IL TRM v12	Adopt ISR in GS calculations if there is a desire to optimize realization rates

The impact evaluation found multiple primary realization rate factors contributing to the differences between gross and verified gross energy savings. Figure 3-10 shows the relative impact of each factor for kWh savings. The only factor that impacts the Therms savings is the ISR. The realization rate factors are:

1. ISR
2. Fuel type (known vs. unknown)
3. No electric heating savings

Factor 1: The Gross Savings calculator includes an ISR/safety factor of 0.5 in the calculations. An ISR of 72 percent, sourced from the IL TRM[4] was utilized for the Verified Gross Savings calculations.

Factor 2: The Gross Savings calculator determines savings assuming 100% electric cooling in Q1 of 2024, and later was updated to utilize the fuel splits (electric heating 16%, natural gas furnace 84%), while the Verified Gross Savings calculates the savings specifically for the known fuel type and do not utilize the unknown fuel split. This impacts the realization rates as two of the weather strips purchased were assumed to have kWh savings when instead it was determined that both were purchased by customers with propane fuel type with no central AC and therefore the only savings (heating) should have been delivered fuel savings.

Factor 3: The Gross Savings calculator originally did not include any electric heating kWh savings. This was added in Q2 of 2024. The Verified Gross Savings calculations include savings for electric heating.

[4] IL TRM v12 vol3, found online: https://www.ilsag.info/illinois-statewide-technical-reference-manual-version-12-0/

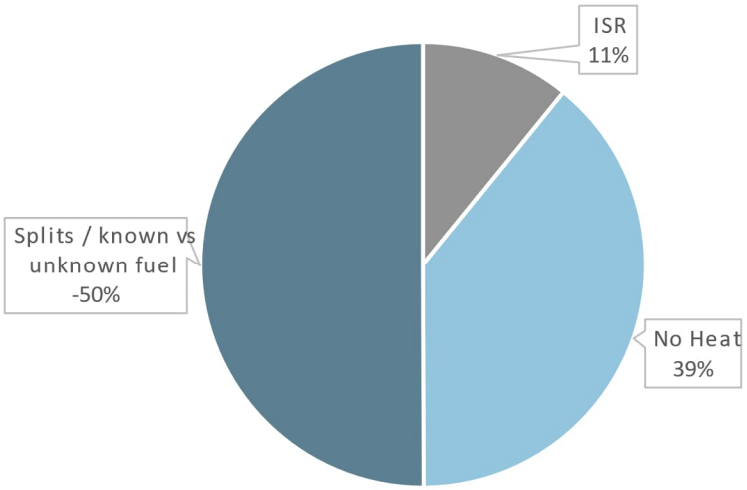


Figure 3-10: Relative impact of each factor on the weather strip VGS RR for kWh savings

3.5.10.3 Foam Sealant

Verified Gross Savings realization rates for the measure across both utilities are shown in Table 3-34. The latest proposed savings calculation methodology does not include an algorithm for summer peak demand reduction. Therefore, no summer peak demand reduction realization rate is provided.

Table 3-34: Foam Sealant Realization Rates

VGS RR kWh	VGS RR kW	VGS RR Fuel (Therms)
128%	NA	61%

A comparison of inputs that led to the difference between gross and verified savings is reported in Table 3-35.

Table 3-35: Foam Sealant VGS Calculation Factors

Attribute	GS Input	VGS Input	VGS Reference	Recommendation
Heating Degree Day (HDD)	Varies by weatherized city	Varies by weatherized city	Weatherization Products Proposed Measure	No recommendation

Attribute	GS Input	VGS Input	VGS Reference	Recommendation
Cooling Degree Day (CDD)	Varies by weatherized city	Varies by weatherized city	Weatherization Products Proposed Measure	
ΔCFM	0.233333	0.233333	Weatherization Products Proposed Measure	
Ft	60	60		
SEER	13	13		
COP	3.22	3.22		
Electric Cooling Factor	Originally always 1, updated to: If electrically cooled = 1, else =0, unknown = 77%	If electrically cooled = 1, else =0, unknown = 77%		
Electric Heating Factor	Originally omitted, updated to: if electrically heated = 1, else = 0, unknown = 16%	If electrically heated = 1, else = 0, unknown = 16%		
Fuel Heating Factor	Originally always 1, updated to: If fuel heated = 1, else = 0, unknown = 84%	If fuel heated = 1, else = 0, unknown = 84%		
ISR/Safety Factor	0.5	0.69	IL TRM v12	Adopt ISR in GS calculations if there is a desire to optimize realization rates

The impact evaluation found multiple primary realization rate factors contributing to the differences between gross and verified gross energy savings. Figure 3-11 and Figure 3-12 shows the relative impact of each factor. The realization rate factors are:

1. ISR
2. Fuel type (known vs. unknown)
3. Error in the Gross Savings calculator (dividing by COP and SEER twice)

Factor 1: The Gross Savings calculator includes an ISR/safety factor of 0.5 in the calculations. An ISR of 72 percent, sourced from the IL TRM[5] was utilized for the Verified Gross Savings calculations.

Factor 2: The Gross Savings calculator determines savings assuming 100% electric cooling in Q1 of 2024, and later was updated to utilize the fuel splits (electric heating 16%, natural gas furnace 84%), while the Verified Gross Savings calculates the savings specifically for the known fuel type and do not utilize the unknown fuel split. This impacts the realization rates as two of the weather strips purchased were assumed to have kWh savings when instead it was determined that both were purchased by customers with propane fuel type with no central AC and therefore the only savings (heating) should have been delivered fuel savings.

Factor 3: An error was found in the Gross Savings calculator in Q1 of 2024 that made the kWh savings much smaller by dividing by the COP and SEER twice. This led to much smaller kWh savings for Q1 and into Q2 of 2024.

[5] IL TRM v12 vol3, found online: https://www.ilsag.info/illinois-statewide-technical-reference-manual-version-12-0/

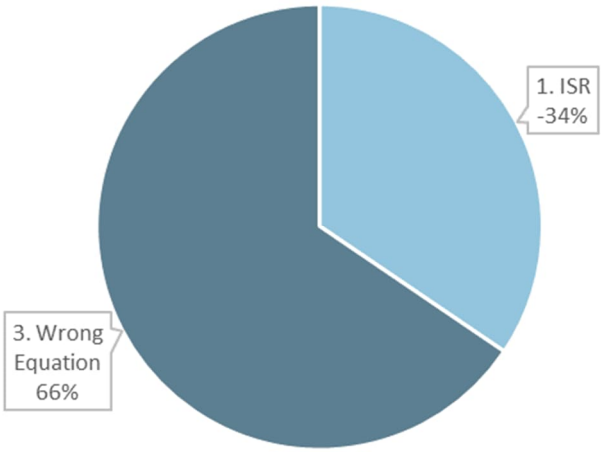


Figure 3-11: Relative impact of each factor on the foam sealant VGS RR for kWh savings

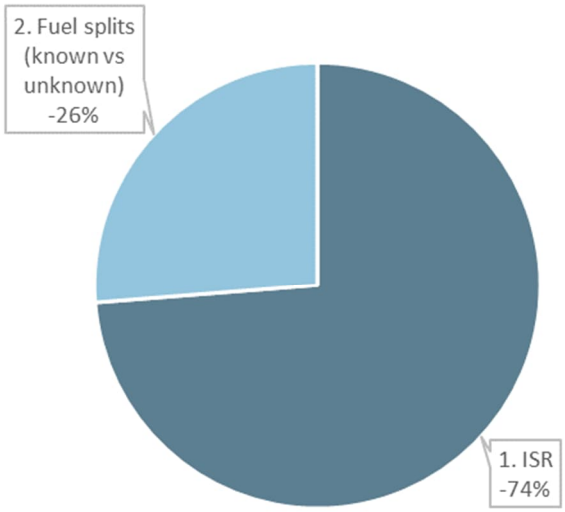


Figure 3-12: Relative impact of each factor on the foam sealant VGS RR for therm savings

3.5.10.4 Pipe Insulation

Verified Gross Savings realization rates for the measure across both utilities are shown in Table 3-36. Participants in the program tracking data mostly had electric only utility accounts with NYSEG and RG&E. A 100% realization rate is being applied to fuel savings until further participation.

Table 3-36: Pipe Insulation Realization Rates

VGS RR kWh	VGS RR kW	VGS RR Fuel (Therms)
71%	71%	100%

A comparison of inputs that led to the difference between gross and verified savings is reported in Table 3-37.

Table 3-37: Pipe Insulation VGS Calculation Factors

Attribute	GS Input	VGS Input	VGS Reference	Recommendation
(UA/L) baseline	PI010-2 = 0.54 PI011-2 = 0.54 PI016 = 0.54 PI018 = 0.54	PI010-2 = 0.44 PI011-2 = 0.54 PI016 = 0.54 PI018 = 0.44	NY TRM v11	Update based on SKU
(UA/L) efficient	PI010-2 = 0.16 PI011-2 = 0.18 PI016 = 0.16 PI018 = 0.16	PI010-2 = 0.16 PI011-2 = 0.18 PI016 = 0.16 PI018 = 0.14		
Length	3	3		No recommendation
ΔT	55	55		
Hours	8760	8760		
Thermal efficiency (electric)	0.98	0.98		
Thermal efficiency (gas)	0.75	0.75		
Electric Savings Factor	Originally always 1, updated to: if electrically heated = 1, else = 0, unknown = 33%	If electrically heated = 1, else = 0, unknown = 33%		
Fuel Savings Factor	Originally always 1, updated to: If fuel heated = 1, else = 0, unknown = 56%	If fuel heated = 1, else = 0, unknown = 56%		
CF	1	1		

Attribute	GS Input	VGS Input	VGS Reference	Recommendation
ISR/Safety Factor	1	1	IL TRM v12	

The impact evaluation found multiple primary realization rate factors contributing to the differences between gross and verified gross energy savings. Figure 3-13 shows the relative impact of each factor for kWh savings. The realization rate factors are:

1. Misalignment on pipe diameter and thickness
2. Fuel splits

Factor 1: Currently the Gross Savings calculator is misaligned on pipe diameter and thickness. The calculator assumes that pipe insulation will either be a diameter of 0.75 in and a thickness of 0.5 or a diameter of 0.75 and a thickness of 0.75. However, there are three different combinations of thickness and diameter that are possible, as seen in the following table. The verified gross savings calculations follow the table.

Table 3-38: Pipe insulation thickness and diameter options

SKUs	Measure Name	Thickness	Pipe Diameter
PI010-2	Simply Conserve Pipe Insulation (1/2 in. Wall)	0.5	0.5
PI011-2	Simply Conserve Pipe Insulation (1/2 in. Wall)	0.5	0.75
PI016	Simply Conserve Pipe Insulation (3/4 in. Wall)	0.75	0.75
PI018	Simply Conserve Pipe Insulation (3/4 in. Wall)	0.75	0.5

Factor 2: For a few purchases in Q1 of 2024, there were no fuel splits associated with the Gross Savings calculations and instead every purchase was assumed to have an electric safety factor of 1, therefore not utilizing the unknown HW fuel split. This was updated to the unknown fuel split values in later quarters. If possible, customers should be required to report their water heating fuel type when purchasing pipe insulation.

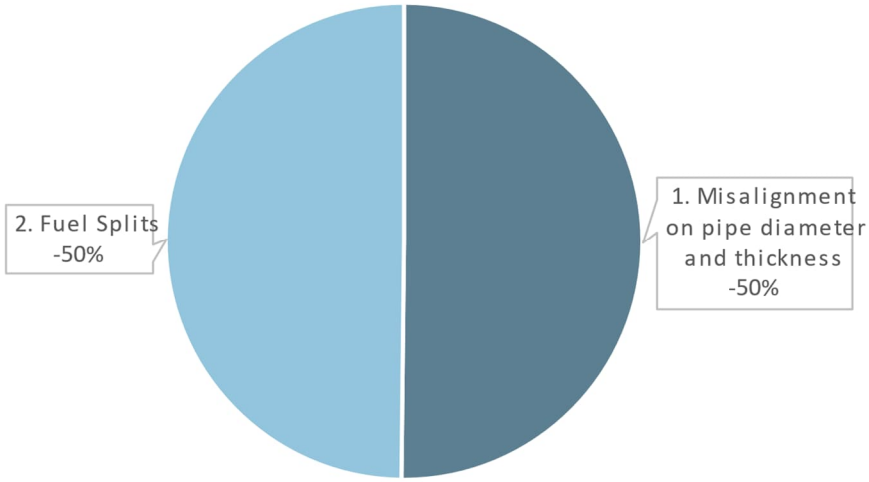


Figure 3-13: Relative impact of each factor on the pipe insulation VGS RR for kWh savings and kW demand reduction

3.5.10.5 Weatherization Kits

Verified Gross Savings realization rates for the measure across both utilities are shown in Table 3-39.

Table 3-39: Weatherization Kits Realization Rates

VGS RR kWh	VGS RR kW	VGS RR Fuel (Therms)
65%	19%	45%

Weatherization Kits were introduced in Q3 of 2023 and consist of the measures shown in Table 3-40. All contents are rebated and therefore have claimed savings.

Table 3-40: Weatherization Kit Contents

Kit Contents	Qty
Self-stick door sweep	2
Corner doorjamb pads	2
Rope door and window caulk	1
Deluxe window film kit	1
Switch gaskets	4
Outlet gaskets	8
Adhesive weather strips, closed cell	2
Pipe insulation	2

A comparison of inputs that led to the difference between gross and verified savings is reported in Table 3-41.

Table 3-41: Weatherization Kit VGS Calculation Inputs

Attribute	GS Input	VGS Input	VGS Reference	Recommendation
Heating Degree Days (HDD) & Cooling Degree Days (CDD)	Varies by weatherized city	Varies by weatherized city	NY TRM v11	No recommendation
Windows per kit	5	5		
Avg. window area	6	6		
R Window	1.13	1.13		
R insulation	1.74	1.74		
Adj Window	0.63	0.63		
Efficient Fuel Heat	0.78	0.78		
Electric Heat Factor	16%	If electrically heated = 1, else = 0, unknown = 16%		
Fuel Heat Factor	84%	If fuel heated = 1, else = 0, unknown = 84%		
Avg. Coefficient of Performance (COP)	Heat Pump: 3.2 Electric Heat: 1.628 Fossil Fuel: 0.78	3.22		

Attribute	GS Input	VGS Input	VGS Reference	Recommendation
Door Air Infiltration Reduction (cfm)	Door Sweep: 3.783 Corner Doorjamb Pad: 0.210	Door Sweep: 3.783 Corner Doorjamb Pad: 0.210	Weatherization Products Proposed Measure	No recommendation
Infiltration Safety Factor	0.5	0.5		
Pad Size Factor	0.0556	0.0556		
Weather Stripping Per Package (ft)	Rope Caulk: 30 Weather Strips: 17	Rope Caulk: 30 Weather Strips: 17		
Cubic Feet per minute (CFM) Reduction (cfm/ft)	Rope Caulk: 0.233 Weather Strips: 0.233 Switch-Outlet Seal: 0.25	Rope Caulk: 0.233 Weather Strips: 0.233 Switch-Outlet Seal: 0.25		
Total CFM Reduction (cfm)	Rope Caulk: 7 Weather Strips: 3.967 Switch-Outlet Seal: 3	Rope Caulk: 7 Weather Strips: 3.967 Switch-Outlet Seal: 3		
Switch-Outlet Seals Per Package	12	12		
HVAC System Efficiency - AC SEER	13	13		
HVAC System Efficiency - Furnace (%)	0.78	0.78		
Pipe Diameter	0.75	0.75		
UA/L baseline DHW	0.54	0.54		
UA/L_ee	0.17	0.17		
Thermal Efficiency, elec.	0.98	0.98		
Thermal Efficiency, fuel	DHW: 0.75	DHW: 0.75		
Length	3	3		
ΔT	55	55		

Attribute	GS Input	VGS Input	VGS Reference	Recommendation
Elec Savings Factor	Originally always 1, updated to: if electrically heated = 1, else = 0, unknown = 33%	If electrically heated = 1, else = 0, unknown = 33%		
Fuel Savings Factor	Originally always 1, updated to: If fuel heated = 1, else = 0, unknown = 56%	If fuel heated = 1, else = 0, unknown = 56%		
Hours	8760	8760		
CF	1	1		
ISR	1.0	Varies by measure, see Table 3-42	IL TRM v12	Adopt ISR in GS calculations if there is a desire to optimize realization rates

The impact evaluation found multiple primary realization rate factors contributing to the differences between gross and verified gross energy savings. The impact of these realization rate factors is shown in Figure 3-14 and Figure 3-15. The realization rate factors are:

1. In-service rates (ISR)
2. Space heating removal
3. Domestic Hot Water (DHW) hours error
4. Adding electric heating for weatherization measures
5. Fuel splits

Factor 1: The Gross Savings calculation includes an ISR of 1.0 for all measures within the kit. By utilizing the 2024 Attribution survey, an ISR was able to be determined for the weatherization kit. This ISR includes a planning score which credits participants who say they are going to install the measure "within 6 months" or "within a year", thereby improving the ISR. The following table outlines the ISRs. The ISR decreases to 48% overall if the credit is only given to the answer "within 6 months".

Table 3-42: Weatherization Kit ISR

Kit Contents	ISR	Installed Qty	Verified Purchase Qty
Weatherization Kit	52%		25
Self-stick door sweep	64%	36	56
Corner doorjamb pads	54%	30	56
Rope door and window caulk	54%	15	28
Deluxe window film kit	34%	9.5	28
Switch gaskets	55%	184	336
Outlet gaskets	51%	28.5	56
Adhesive weather strips, closed cell	54%	30.5	56
Pipe insulation	64%	36	56

While calculating the ISR for door sweeps it was found that one respondent installed them on interior doors. This would mean that no savings are realized as door sweeps must be installed on doors leading to unconditioned spaces. The Evaluator recommends a larger study as the measures grows in popularity and potentially introducing a variable in the algorithm that reduces savings by a certain percentage to account for people installing them on interior doors not leading to unconditioned space.

Factor 2: Space heating savings were removed from the Gross Savings calculator in Q1 of 2024 due to the TRM clarification that space heating pipe insulation is limited to insulation installed in unheated spaces only.

Factor 3: Quarter 1 and into Q2 of 2024, the Gross Savings calculations had the hours set at 1,095. The correct hours for DHW are 8,760.

Factor 4: The Gross Savings calculator originally did not include any electric heating kWh savings. This was added in Q2 of 2024. The Verified Gross Savings calculations include savings for electric heating.

Factor 5: For a few purchases in Q1 of 2024, there were no fuel splits associated with the Gross Savings calculations and instead every purchase was assumed to have an electric safety factor of 1, therefore not utilizing the unknown HW fuel split. This was updated to the unknown fuel split values in later quarters.

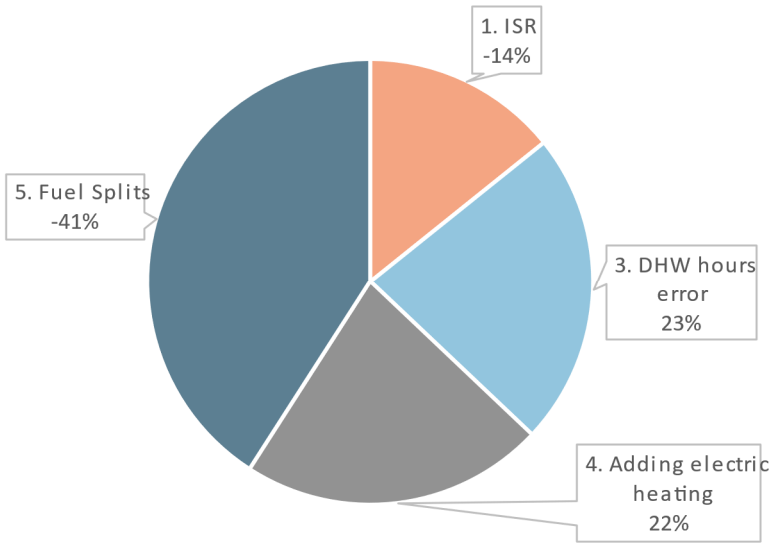


Figure 3-14: Relative Impact of Each Factor on the Weatherization Kits VGS RR for kWh Savings

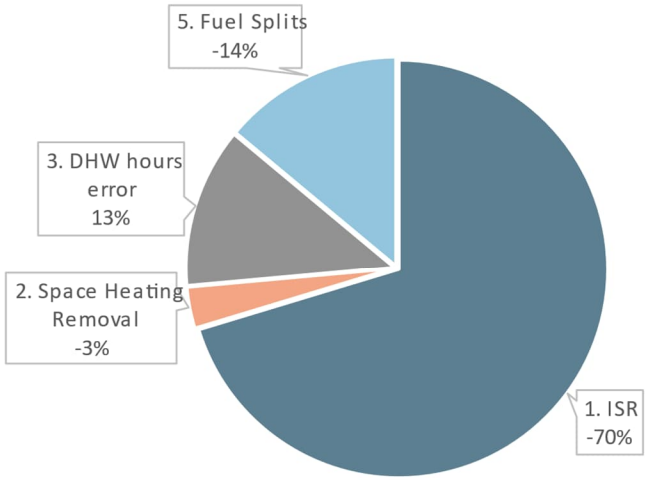


Figure 3-15: Relative Impact of Each Factor on the Weatherization Kits VGS RR for Fuel Savings

3.5.10.6 Window Film Kits

Verified Gross Savings realization rates for the measure across both utilities are shown in Table 3-43. The latest proposed savings calculation methodology does not include an algorithm for summer peak demand reduction. Therefore, no summer peak demand reduction realization rate is provided.

Table 3-43: Window Film Kit Realization Rates

VGS RR kWh	VGS RR kW	VGS RR Fuel (Therms)
87%	NA	62%

A comparison of inputs that led to the difference between gross and verified savings is reported in Table 3-44. Window Film Kits were introduced at the beginning of 2023 and are sold as standalone measures on the Smart Solutions website.

Table 3-44: Window Film Kit VGS Calculation Factors

Attribute	GS Input	VGS Input	VGS Reference	Recommendation
Heating Degree Day (HDD)	Varies by weatherized city	Varies by weatherized city	NY TRM v11	No recommendation
Windows per kit	5	5	NY TRM v11	
Avg. window area	6	6		
R Window	1.13	1.13		
R Insulation	1.74	1.74		
Adj Window	0.63	0.63		
Efficient Fuel Heat	0.78	0.78		
Electric Heat Factor	16%	If electrically heated = 1, else = 0, unknown = 16%		
Fuel Heat Factor	84%	If fuel heated = 1, else = 0, unknown = 84%		
ISR	1.0	0.69	IL TRM v12	Adopt ISR in GS calculations if there is a desire to optimize realization rates
Avg. Coefficient of Performance (COP)	Heat Pump: 3.2 Electric Heat: 1.628 Fossil Fuel: 0.78	3.22	NY TRM v11	No recommendation

The impact evaluation found multiple primary realization rate factors contributing to the differences between gross and verified gross energy savings. The impact of these realization rate factors is shown in Figure 3-16 and Figure 3-17. The realization rate factors are:

3. ISR
4. Fuel type (known vs. unknown)

Factor 1: The Gross Savings calculator does not include any ISR in the calculations. An ISR of 69 percent, sourced from the IL TRM[6] was utilized.

Factor 2: Information on the fuel type of the home is not collected for most of the installations in the program tracking data. In these cases, fuel splits are utilized (electric heating 16%, natural gas furnace 84%). However, there are a few instances in the data where the fuel information is known, likely due to the participant also purchasing other measures. For these cases, the verified gross savings calculate the savings specifically for the known fuel type and do not utilize the unknown fuel split. As this scenario only occurs a few times, it is not recommended that the Gross Savings calculations be updated.

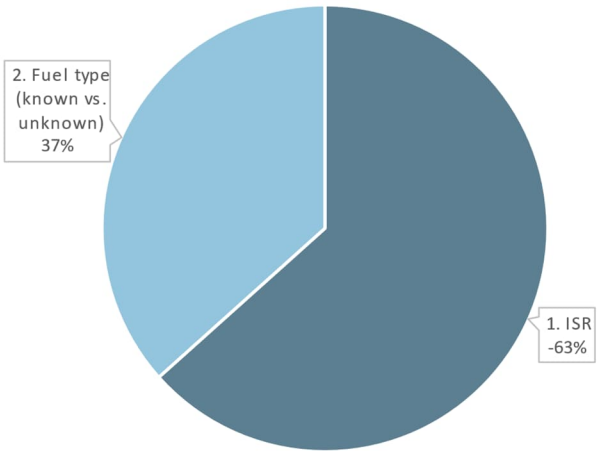


Figure 3-16: Relative Impact of Each Factor on the Window Film Kit VGS RR for kWh Savings

[6] IL TRM v12 vol3, found online: https://www.ilsag.info/illinois-statewide-technical-reference-manual-version-12-0/

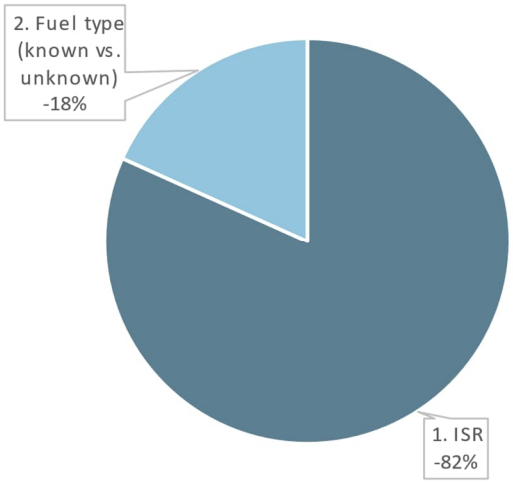


Figure 3-17: Relative Impact of Each Factor on the Window Flim Kit VGS RR for Fuel Savings

3.5.11 Water Saving Devices

Water savings devices sold through the Smart Solutions websites include aerators, showerheads, TSVs, and showerheads with TSVs included. Additionally, a water conservation kit is sold that contains two aerators and a showerhead.

3.5.11.1 Aerators

Verified Gross Savings realization rates for the measure across both utilities are shown in Table 3-45. The latest proposed savings calculation methodology does not include an algorithm for summer peak demand reduction. Therefore, no summer peak demand reduction realization rate is provided.

Table 3-45: Aerator Realization Rates

VGS RR kWh	VGS RR kW	VGS RR Fuel (Therms)
105%	NA	100%

A comparison of inputs that led to the difference between gross and verified savings is reported in Table 3-46. Aerators are sold as standalone measures on the Smart Solutions website.

Table 3-46: Inputs used in the Aerators VGS calculations

Attribute	GS Input	VGS Input	VGS Reference	Recommendation
T_main	Varies by weatherized city	Varies by weatherized city	NY TRM v11	No recommendation
T_Faucet	Lavatory: 86 Non-Lavatory: 93	Lavatory: 86 Non-Lavatory: 93		
Efficient GPM	Varies by model	Varies by model	Model #	
Uniform Energy Factor (UEF)	Natural Gas: 0.5803 Electric: 0.9227	Natural Gas: 0.5803 Electric: 0.9227 Tankless: 0.81	NY TRM v11	
Baseline GPM	Lavatory: 1.2 Non-Lavatory: 1.8	Lavatory: 1.2 Non-Lavatory: 1.8		
Mins/person/ day	Lavatory: 1.6 Non-Lavatory: 4.5	Lavatory: 1.6 Non-Lavatory: 4.5		
F_Faucet	Lavatory: 1.6 Non-Lavatory: 1	Lavatory: 1.6 Non-Lavatory: 1		
Person/house hold	Single family: 2.8	Single family: 2.8		
Throttle factor, baseline	0.83	0.83		
Throttle factor, efficient	0.95	0.95		
Water Savings	Varies by location and Efficient GPM	Varies by location and Efficient GPM		
ISR	1	1	2023 Participant Survey	

The impact evaluation found one primary realization rate factor contributing to the differences between gross and verified gross energy savings in the Smart Solutions Program. The realization rate factor is:

1. Uniform Energy Factor (UEF) values for tankless water heaters

Factor 1: The Gross Savings calculation does not include UEF values for tankless water heaters and bases the UEF value just on the water heater fuel type. Following the same TRM assumption of a medium draw pattern the tankless gas fired water heater has a UEF of 0.81 and the electric tankless water heater, a UEF of 0.91.

3.5.11.2 Showerheads

Verified Gross Savings realization rates for the measure across both utilities are shown in Table 3-47. The latest proposed savings calculation methodology does not include an algorithm for summer peak demand reduction. Therefore, no summer peak demand reduction realization rate is provided.

Table 3-47: Showerhead Realization Rates

VGS RR kWh	VGS RR kW	VGS RR Fuel (Therms)
80%	NA	74%

A comparison of inputs that led to the difference between gross and verified savings is reported in Table 3-48. Showerheads are sold as standalone measures on the Smart Solutions website.

Table 3-48: Showerheads VGS Calculation Inputs

Attribute	GS Input	VGS Input	VGS Reference	Recommendation
T_main	Varies by weatherized city	Varies by weatherized city	NY TRM v11	No recommendation
T_Shower	104	104		
Efficient GPM	Varies by model	Varies by model	Model # and description	
Uniform Energy Factor (UEF)	Natural Gas: 0.5803 Electric: 0.9227	Natural Gas: 0.5803 Electric: 0.9227 Tankless, NG: 0.81 Tankless, Electric: 0.91	NY TRM v11	
Baseline GPM	1.8	1.8		
Mins/use	8.2	8.2		
Uses/person/ day	0.75	0.75		
F_Shower	1.4	1.4		
Person/house hold	2.0	2.0	2023 Participant Survey	

Attribute	GS Input	VGS Input	VGS Reference	Recommendation
ISR	100%	80%	2023 Participant Survey	Adopt ISR in GS calculations if there is a desire to optimize realization rates
Throttle factor	0.9	0.9	NY TRM v11	No recommendation

The impact evaluation found two primary realization rate factors contributing to the differences between gross and verified gross energy savings. The impact of these realization rate factors is shown in Figure 3-18 for fuel savings. The only factor that impacts the kWh savings is the ISR. The realization rate factors are:

1. In-service rate (ISR).
2. Uniform Energy Factor (UEF) values for tankless water heaters

Factor 1: The Gross Savings calculations do not include an ISR. From the survey conducted on the 2023 Q1 – Q3 participants, a realization rate of 80% was determined.

Factor 3: The gross savings calculation does not include UEF values for tankless water heaters and bases the UEF value on the water heater fuel type. Following the same TRM assumption of a medium draw pattern the tankless gas fired water heater has a UEF of 0.81 and the electric tankless water heater, a UEF of 0.91.

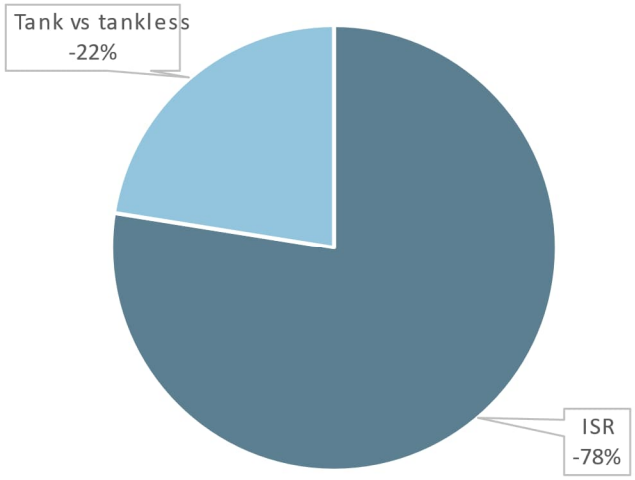


Figure 3-18: Relative Impact of Each Factor on the Showerhead VGS RR for Fuel Savings

3.5.11.3 Showerheads + Thermostatic Shower Valves (TSV), TSVs

Verified Gross Savings realization rates for the measure across both utilities are shown in Table 3-49. The latest proposed savings calculation methodology does not include an algorithm for summer peak demand reduction. Therefore, no summer peak demand reduction realization rate is provided.

Table 3-49: Showerheads+TSVs, TSV Realization Rates

VGS RR kWh	VGS RR kW	VGS Fuel (Therms)
80%	NA	80%

A comparison of inputs that led to the difference between gross and verified savings is reported in Table 3-50. Some showerheads are sold with TSVs included and TSVs are also sold as standalone measures on the Smart Solutions website.

Table 3-50: Showerheads+TSVs, TSVs VGS Calculation Inputs

Attribute	GS Input	VGS Input	VGS Reference	Recommendation
T_main	Varies by weatherized city	Varies by weatherized city	NY TRM v11	No recommendation

Attribute	GS Input	VGS Input	VGS Reference	Recommendation
T_Shower	104	104		
Efficient GPM	Varies by model	Varies by model	Model # and description	
UEF	Natural Gas: 0.5803 Electric: 0.9227	Natural Gas: 0.5803 Electric: 0.9227 Tankless, NG: 0.81 Tankless, Electric: 0.91	NY TRM v11	
Baseline GPM	1.8	1.8		
Mins/use	8.2	8.2		
Uses/person/ day	0.75	0.75		
F_Shower	1.4	1.4		
Person/house hold	2.0	2.0	2023 Participant Survey	
ISR	100%	80%		Adopt ISR in GS calculations if there is a desire to optimize realization rates
Throttle factor	0.9	0.9	NY TRM v11	No recommendation
kWh/unit (TSV)	Varies by location and GPM	Varies by location and GPM		
MMBtu/unit (TSV)	Varies by location and GPM	Varies by location and GPM		

The impact evaluation found five primary realization rate factors contributing to the differences between gross and verified gross energy savings. The realization rate factors are:

1. In-service rate (ISR).

Factor 1: The Gross Savings calculations do not include any ISR. From the survey conducted on the Q1 – Q3 2023 participants, an ISR of 80% was determined for showerheads. As this is a similar measure, the same ISR was applied.

3.5.11.4 Water Conservation Kit

Verified Gross Savings realization rates for the measure across both utilities are shown in Table 3-51. The latest proposed savings calculation methodology does not include an algorithm for

summer peak demand reduction. Therefore, no summer peak demand reduction realization rate is provided.

Table 3-51: Water Conservation Kit Realization Rates

VGS RR kWh	VGS RR kW	VGS RR Fuel (Therms)
62%	NA	61%

A comparison of inputs that led to the difference between gross and verified savings is reported in Table 3-52. Water Conservation Kits are sold on the Smart Solutions websites and consist of two aerators and one showerhead.

Table 3-52: Water Conservation Kit VGS Calculation Inputs

Attribute	GS Input	VGS Input	VGS Reference	Recommendation
T_main	Varies by weatherized city	Varies by weatherized city	NY TRM v11	No recommendation
T_Faucet / T_shower	Lavatory Aerator: 86 Non-Lavatory Aerator: 93 Shower: 104	Lavatory: 86 Non-Lavatory: 93		
Efficient GPM	Bubble Aerator: 1 Swivel Aerator: 1.5 Showerhead: 1.5	Varies by model	Model #	
UEF	Natural Gas: 0.5803 Electric: 0.9227	Natural Gas: 0.5803 Electric: 0.9227 Tankless, NG: 0.81 Tankless, Electric: 0.91 Based on DHW fuel	NY TRM v11	
ISR	All Measures: 100%	Bubble Aerator: 60% Swivel Aerator: 60% Showerhead: 65%	2023 Participant Survey	Adopt ISR in GS calculations if there is a desire to optimize realization rates
Aerator Split	Dual Spray: 100% kitchen Bubble Spray: 100% bathroom	Dual Spray: 50% kitchen, 50% bath. Bubble Spray: 57% kitchen, 43% bath.		No recommendation
Baseline GPM	Lavatory: 1.5 Non-Lavatory: 2.2 Showerhead: 2.2	Lavatory: 1.2 Non-Lavatory: 1.8 Showerhead: 1.8	NY TRM v11	

Attribute	GS Input	VGS Input	VGS Reference	Recommendation
Mins/person/ day	Lavatory: 1.6 Non-Lavatory: 4.5	Lavatory: 1.6 Non-Lavatory: 4.5		
Mins/use	8.2	8.2		
Uses/person/ day	0.75	0.75		
F_Faucet / F_shower	Lavatory: 1.6 Non-Lavatory: 1 Shower: 1.4	Lavatory: 1.6 Non-Lavatory: 1 Shower: 1.4		
Person/house hold	Aerators: 2.8 Showerhead: 2.0	Aerators: 2.8 Showerhead: 2.0	2023 Participant Survey and NY TRM v11	
Throttle factor, baseline	Aerator: 0.83 Showerhead: 0.9	Aerator: 0.83 Showerhead: 0.9	NY TRM v11	
Throttle factor, efficient	Aerator: 0.95 Showerhead: 0.9	Aerator: 0.95 Showerhead: 0.9		
Water Savings	Varies by location and Efficient GPM	Varies by location and Efficient GPM		

The impact evaluation found multiple primary realization rate factors contributing to the differences between gross and verified gross energy savings. The impact of these realization rate factors is shown in Figure 3-19 and Figure 3-20. The realization rate factors are:

1. ISR
2. Aerator location split error
3. Uniform Energy Factor (UEF) values for tankless water heaters

Factor 1: The Gross Savings calculation does not include an ISR in the calculations. As the survey conducted on the Q1 – Q3 2023 participants did not yield many responses, an ISR was sourced from IL TRM v12[7].

Factor 2: Based on the 2023 participant survey, it was found that for the Dual Spray aerator, it's a 50/50 split for installation location of bathroom and kitchen. For the Bubble Spray, 57% were installed in the kitchen and 43% in the bathroom. This split was incorporated into the Gross Savings calculator; however, an error was found in Q1 of 2024 where the dual splay aerator had the wrong bathroom split.

[7] IL TRM v12 vol3, found online: https://www.ilsag.info/illinois-statewide-technical-reference-manual-version-12-0/

Factor 3: The gross savings calculation does not include UEF values for tankless water heaters and bases the UEF value just on the water heater fuel type. Following the same TRM assumption of a medium draw pattern the tankless gas fired water heater has a UEF of 0.81 and the electric tankless water heater, a UEF of 0.91.

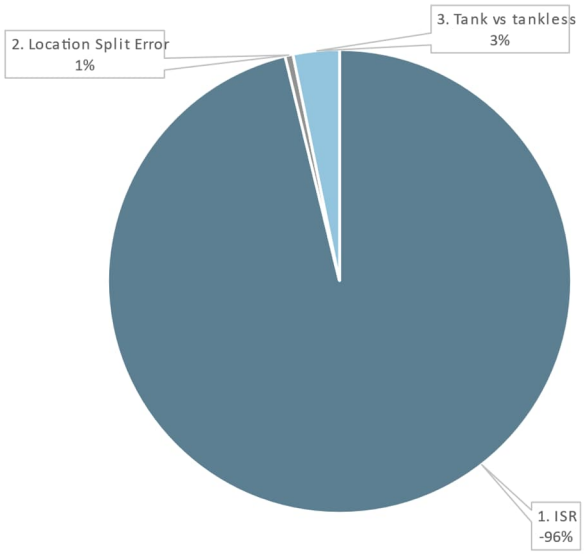


Figure 3-19: Relative Impact of Each Factor on the Water Conservation Kit VGS RR for kWh Savings

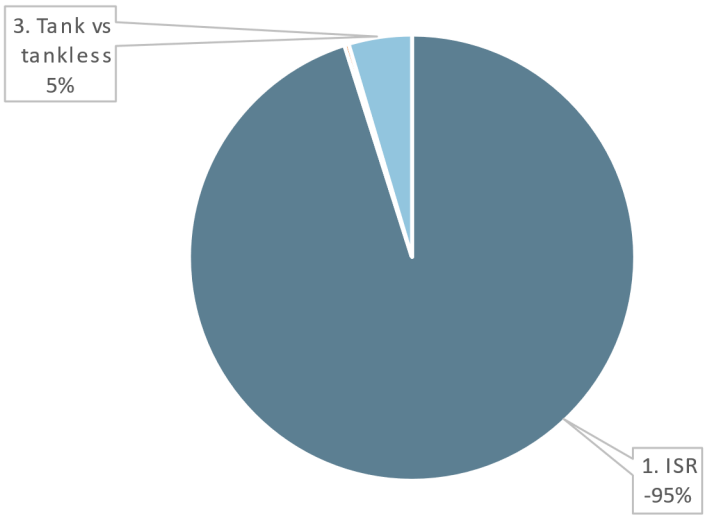


Figure 3-20: Relative Impact of Each Factor on the Water Conservation Kit VGS RR for Fuel Savings

3.5.12 Sealed

Verified Gross Savings realization rates for the measure across both utilities are shown in Table 3-53.

Table 3-53: Sealed Realization Rates

VGS RR kWh	VGS RR kW	VGS RR Fuel (Therms)
116%	142%	137%

The Sealed program within Smart Solutions is a residential insulation and sealing package financing option that includes insulation and sealing options to customers. The impact evaluation found multiple primary realization rate factors contributing to the differences between gross and verified gross energy savings. The realization rate factors are:

1. Area

Factor 1: The area for each customer was given as one square footage for the entire customer. Each measure the customer had installed (kneewall, rim joist, etc.) might have been a different square footage that summed to the overall square footage provided. However, without any additional information, the Evaluator utilized the square footage provided for each measure installed.

4. Conclusions and Recommendations

Based on findings from the evaluation, the following conclusions and recommendations are provided.

4.1 Conclusions

- Several weatherization measures have been added to the Smart Solutions measure mix in 2024, however, most electric and fuel savings for both NYSEG and RG&E were from thermostats.
- The PY2024 impact evaluation resulted in an overall 32% fuel alternative prospective realization rate, a 42% electric alternative prospective realization rate (AP kWh RR), and a 65% electric summer peak demand reduction alternative prospective realization rate (AP kW RR).
- The largest measure contributing to electric kWh and fuel therm savings are thermostats. The thermostat realization rates determined via a billing analysis have the largest impact on the program's overall RRs. Results of the analysis indicate that the savings calculated using the method and assumptions within the NY TRM are not realized at the meter. In some control scenarios, there is no statistical change in consumption with the installation of a programmable or controlled (i.e. smart) thermostat.
- For the other measures, VGS results were most impacted by installation rates (ISR) values but also impacted by savings algorithm input assumptions such as fuel sources and measure installation locations. Detailed differences between VGS and GS calculations are described in Section 3.5.

4.2 Recommendations

Evaluation findings led to the following recommendations:

- Incorporate program AP RRs developed in this report for Q4 of 2024 onwards.
- Re-evaluate the program in 2025 for updated AP RRs based on:
    - Adoption of recommendations from this evaluation
    - Program changes
    - Enhanced thermostat billing analysis
    - NY TRM updates

- Update all instances of APS (standalone and in kits) to incorporate connected equipment splits and updated baselines.
- Update Gross Savings calculator to properly incorporate fuel type from marketplace report for Window Film Kits and Weatherization Kits. This will allow savings to be adjusted for scenarios where heating fuel type is known and no longer has to rely on unknown fuel type splits.
- Update the aerator location splits and efficient GPM for the Energy Saving Kit Plus in the Gross Savings calculator to more accurately determine savings where customers install aerators in both the kitchen and bathroom.
- Record water heating fuel type for pipe insulation purchases.
- Update the Gross Savings calculator for pipe insulation savings. Currently the Gross Savings calculator is misaligned on pipe diameter and thickness. The calculator assumes that pipe insulation will either be a diameter of 0.75 in and a thickness of 0.5 or a diameter of 0.75 and a thickness of 0.75. However, there are three different combinations of thickness and diameter that are possible.

4.2.1 TRM Recommendations

The Evaluator has the following TRM recommendations:

- In the 2023 survey, APS customers were asked questions to determine what equipment was plugged into each outlet type on the APS. It was determined from the survey that Tier 2 APSs are also utilized in IT equipment set ups. However, the TRM assumes the connected equipment is always AV equipment for Tier 2 APS values. It is recommended that deemed savings values are determined and added to the TRM for Tier 2 APSs connected with IT equipment.
- While calculating the ISR for door sweeps in the weatherization kit measure, it was found that one respondent installed them on interior doors. This would mean that no savings are realized as door sweeps must be installed on doors leading to unconditioned spaces. The Evaluator recommends a larger study as the measures grows in popularity and potentially introducing a variable in the algorithm that reduces savings by a certain percentage to account for people installing them on interior doors not leading to unconditioned space.

Appendix A. Evaluation Methodology

This appendix provides the detailed methodology used in the impact evaluation.

A.1 Data Review

The Evaluator reviewed program tracking data to evaluate if:

- The tracking dataset included duplicate or erroneous data entries.
- Data entries in the program tracking dataset included all necessary fields for savings calculations.
- Claimed energy and fuel savings match the applicable TRM source documents and calculations.
- Specific product model numbers sold through the program met the requirements of the measure definition as documented in the TRM.

A.2 Sample Design

Tracking data were used to develop a sample of participants for a participant survey. The sample factored in an expected response rate such that survey responses met +/- 10% precision at a 90% confidence interval using ratio estimation (stratified sampling approach).

A.3 Impact Evaluation Primary Data Collection

Data collection for verification of savings algorithm inputs was conducted through a participant survey of NYSEG and RG&E Smart Solutions Program customers.

In-Service rates were determined through the survey effort. Measures were determined to be in-service if respondents indicated that the measure has been installed/performed. A measure was determined to not be in service is the respondent indicated that the measure has not been installed/performed. In-Service rate was calculated for each measure individually by dividing the number of responses indicating that the measure has been installed/performed by the total number of responses for that measure.

The participant survey included a range of questions related to TRM algorithm variables for each measure. Survey logic ensured that survey recipients were only asked questions about measures listed in the sales data. Each energy efficiency measure had a battery of questions related to the TRM algorithm variables such that energy impacts can be determined for each sampled unit. The range of data collected in the survey is described in the following section.

A.4 Engineering Algorithms Savings Calculations

For Verified Gross Savings calculations, the Evaluator relied on engineering algorithms from the Technical Reference Manual (TRM). The Evaluator evaluation team used additional methods to validate TRM factors and suggest improvements to the program analysis. Additional verification included:

- Review of tracking data and deemed savings calculations.
- Verification of product eligibility for inclusion in the program.
- Participant surveys for verification of measure installation.
- Measurement of key parameters that inform partially deemed savings estimations through surveys.

To ensure that appropriate Gross Savings values are used, the tracking data was reviewed, and sources were confirmed for deemed savings algorithms, including TRM inputs from New York and other relevant states, ENERGY STAR® data, and other industry references. To confirm model eligibility and characteristics for products in the Retail Products Program, an internally developed tool was used to verify equipment specifications. A historical database of all ENERGY STAR certified products across common measure categories is kept current.

For measures included in the NYSGE/RG&E current framework, The algorithms were determined for calculating savings and the operative assumptions regarding baseline equipment, operation hours, and usage patterns. Collaboration with NYSGE/RG&E staff and implementation contractors identified workable solutions in cases where data collection needs created an undue tracking and reporting burden. Primary data was collected through participant surveys.

Using the data collected through participant surveys, the deemed savings values and partially deemed savings algorithms provided in the TRM were used to calculate Verified Gross Savings (VGS) values for fuel usage, electric usage, and demand. The verified values were compared to the savings reported, known as Gross Savings values. A realization rate was generated by dividing verified savings by reported savings.

A.5 Billing Regression Savings Calculations

4.2.1.2 Data Preparation

The Evaluator used participant billing data in the pre-period (before installation of the new smart thermostat) and participant billing data in the post-period (after installation of the smart thermostat) in a mixed effects panel regression model to predict electric savings.

The following steps were taken to prepare data:

- Excluded homes without sufficient billing history.
- Excluded homes without sufficient post-period billing data.
- Excluded homes with consumption data indicating it is an outlier.

The Evaluator examined data for outliers using multiple accepted identification techniques. These include simple Z-scores, Bonferroni Outlier Test, Grubbs Test for Outliers (G-test), or others as appropriate. In the past, we have often identified high outlier thresholds based on average daily energy consumption. That said, the Evaluator aimed to remove error readings rather than remove high and low users, as these subgroups contribute real behaviors to the average savings estimate.

4.2.1.3 Calendarization

Monthly billing periods in monthly billed data do not fall on consistent dates between participants. For example, one customer's June bill may run from May 16th to June 17th while another customers may run from May 20th to July 5th. To make the monthly billing data consistent between participants and to represent each month accurately, the Evaluator calendarized the data into monthly calendar bills. Calendarization is the process of correcting monthly billing data to match calendar dates. For example, if 15 days in a billing period belonged to June and 15 days belonged to July, 50% of the billed usage would be attributed to June and 50% attributed to July. The proportionate usage and number of days that fall under a given calendar month are then summed to generate a calendarized usage value and the number of billed days for that month. The following equation provides the method for calculating the monthly usage by calendar month:

$$Monthly\ usage_m = \sum_{i}^{n} \left(Adjusted\ usage_i \times \frac{Month\ days_i}{Billing\ days_i} \right)$$

Equation 4-1

Where:

i = First bill containing the month of interest

n = Last bill containing the month of interest

m = The month of interest

$Monthly\ usage$ = The calendarized monthly usage for a given month

$Month\ days$ = The number of days belonging to the month of interest in a billing period

$Billing\ days$ = The number of days in a billing period

4.2.1.4 Linear Regression

This section defines the linear regression modeling specifications the Evaluator performed during the evaluation of Smart Solutions Program for thermostats.

The mixed-effects model specification contains customer-specific dummy variables to account for exogenous heterogeneity that cannot be explicitly controlled for and is not relevant to the estimation of program savings. The specification of customer-specific effects allows the model to capture much of the baseline differences across customers while obtaining reliable estimates of the impact of the program.

The Evaluator included independent variables such as Cooling Degree Days (CDD) and Heating Degree Days (HDD) for weather control to improve model confidence. The Evaluator then fit a mixed effect panel regression model to estimate daily consumption differences between the pre- and post-period of the installation of the thermostat. Models estimating cooling savings included only months during the cooling season (May, June July, August and September), while models estimating heating savings only included months during the heating season (January, February, March, April, October, November and December). CDD and HDD were included in all models for weather controls during months in which cooling and heating may be limited.

$$ADC_{it} = \alpha_0 + \beta_1(Post)_{it} + \beta_2(CDD)_{it} + \beta_3(HDD)_{it} + \varepsilon_{it}$$

Equation 4-2

Where:

ADC_{it} = Estimated average daily consumption (dependent variable) in home i during period t

$Post_{it}$ = Dummy variable indicating whether period t was in pre- or post- retrofit

CDD_{it} = Average cooling degree days during period t at home i

HDD_{it} = Average heating degree days during period t at home i

ε_{it} = Customer-level random error

α_0 = The model intercept for home i

β_{1-3} = Coefficients determined via regression

The coefficientsβ_1 represents the average change in daily consumption in the post-period. CDD and HDD were calculated from local weather data using 65-degree temperature base as a balance point. This accounts for the "dead-band" in residential cooling and heating loads, as there is a range of temperatures in which a residential customer will be cooling and heating. Savings per thermostat were estimated by multiplying the coefficient β_1 by the number of days in the respective analyses (153 days in the cooling analyses and 212.25 in the heating analyses).

4.2.1.5 Regression Results

Table 4-1 and Table 4-2 displays the results for the primary coefficients and adjusted R^2 from the pre-post panel linear regression models. If the post coefficient is negative with a p-value less than 0.05, this indicates significant savings in the post-installation period.

Table 4-1: Thermostat Electric (kWh) Regression Results

Analysis	Statistic	Intercept	Post	CDD	HDD	Adjusted R^2	Analyzed Accounts
Electric Cooling and Heating (Smart/Connected)	coefficient	20.93	0.25	1.46	0.19	0.61	1039
	p-value	0.0000	0.1186	0.0000	0.0000		
Electric Cooling and Heating (Programmable)	coefficient	18.86	-0.86	1.47	0.20	0.68	132
	p-value	0.0000	0.0237	0.0000	0.0000		
Electric Cooling (Smart/Connected)	coefficient	28.10	-0.71	0.79	-0.67	0.74	967
	p-value	0.0000	0.0017	0.0000	0.0000		
Electric Cooling (Programmable)	coefficient	26.56	-2.01	0.66	-0.63	0.81	128
	p-value	0.0000	0.0000	0.0000	0.0000		
Electric Heating (Smart/Connected)	coefficient	17.25	2.15	-1.63	0.63	0.68	145
	p-value	0.0000	0.0012	0.2758	0.0000		
Electric Heating (Programmable)	coefficient	13.13	2.57	6.13	1.09	0.82	17
	p-value	0.1183	0.1505	0.1395	0.0000		
Electric Cooling and Heating – non-Heat Pump (Smart/Connected)	coefficient	22.48	1.05	1.28	0.31	0.57	372
	p-value	0.0000	0.0007	0.0000	0.0000		
Electric Cooling and Heating – non-Heat Pump (Programmable)	coefficient	19.96	-2.03	1.50	0.24	0.64	41
	p-value	0.0000	0.0076	0.0000	0.0000		
Electric Cooling and Heating – Heat Pump (Smart/Connected)	coefficient	23.94	-0.10	1.12	0.68	0.56	55
	p-value	0.0000	0.9163	0.0000	0.0000		
	coefficient	25.58	-0.42	1.25	0.10	0.79	10

Electric Cooling and Heating – Heat Pump (Programmable)	p-value	0.0049	0.8032	0.0102	0.0000		
Gas Heating kWh (Smart/Connected)	coefficient	18.63	0.18	0.70	0.11	0.71	612
	p-value	0.0000	0.3284	0.1028	0.0000		
Gas Heating kWh (Programmable)	coefficient	15.61	0.05	1.59	0.14	0.67	81
	p-value	0.0000	0.9189	0.1377	0.0024		

Table 4-2: Thermostat Gas (Therms) Regression Results

Analysis	Statistic	Intercept	Post	CDD	HDD	Adjusted R^2	Analyzed Accounts
Gas Heating kWh (Smart/Connected)	coefficient	-0.20	-0.10	0.17	0.14	0.76	393
	p-value	0.0659	0.0005	0.0044	0.0000		
Gas Heating kWh (Programmable)	coefficient	0.04	-0.06	0.07	0.13	0.72	75
	p-value	0.8969	0.4316	0.6426	0.0000		

Appendix B. Survey Instruments

As part of the impact evaluation, the Evaluator deployed participant survey to determine factors impacting TRM algorithms and gather insights on customer satisfaction with eligible measures and satisfaction with both the program and NYSEG/RG&E. The survey was sent to 2,694 NYSEG/RG&E customers and resulted in a total of 190 completions.

B.1 Participant Survey

Client: NYSEG/RG&E
Program: Smart Solutions
Group: Participants
Mode: Email

B.1.1 PREDEFINED VARIABLES

Prepopulated variables are shown in all caps enclosed in brackets, e.g., [PREDEFINED VARIABLE]

Variable	Definition
UTILITY	1 = NYSEG, 0 = RG&E
WEBSITE	1 = NYSEG's Smart Solutions website (nysegsmartsolutions.com), 0 = RG&E's Smart Solutions website (rgesmartsolutions.com)
SMART THERMOSTAT	1 = measure received, 0 = measure not received
ST_QTY	Number of thermostats purchased
LED LIGHTBULB	1 = measure received, 0 = measure not received
LED_bulb_QTY	Number of LEDs purchased
FAUCET AERATOR	1 = measure received, 0 = measure not received
Faucet_Aerator_QTY	Number of faucet aerators purchased
SHOWERHEAD	1 = measure received, 0 = measure not received
Showerhead_QTY	Number of showerheads purchased
POWER STRIP	1 = measure received, 0 = measure not received
APS_QTY	Number of advanced power strips purchased
ENERGY SAVING KIT	1 = measure received, 0 = measure not received
ESK_QTY	Number of energy saving kits purchased
AIR PURIFIER	1 = measure received, 0 = measure not received
AP_QTY	Number of air purifiers purchased
WATER CONSERVATION KIT	1 = measure received, 0 = measure not received
Water_Kit_QTY	Number of water conservation kits purchased
TSV	1 = measure received, 0 = measure not received
TSV_QTY	Number of TSVs purchased

WEATHERIZATION KIT	1 = measure received, 0 = measure not received
Weather_Kit_QTY	Number of weatherization kits purchased
WINDOW FILM KIT	1 = measure received, 0 = measure not received
WFK_QTY	Number of window film kits purchased
ELECTRIC KIT	1 = measure received, 0 = measure not received
Electric_Kit_QTY	Number of electric kits purchased
SHOWERHEAD_WITH_TSV	1 = measure received, 0 = measure not received
SHOWERHEAD_WITH_TSV_QTY	Number of showerheads with TSVs purchased

B.1.2 EMAIL SURVEY MESSAGE

Subject: [PROGRAM NAME] Feedback

Reply To:

From Name: NYSEG/RG&E

Dear <NAME>,

New York State Electric & Gas (NYSEG) and Rochester Gas and Electric (RG&E) are conducting a survey regarding your participation in the Smart Solutions online marketplace service.

NYSEG and RG&E have hired ADM Associates to contact program participants like you for feedback on your experience as it relates to the Smart Solution Program. Your responses will be kept completely confidential and the feedback that you provide will be used to help improve the program in the future. Please take a few moments to complete the online survey. Those that have completed the survey will be entered into a raffle. The winners will win one of multiple $50 gift cards.

If you have any questions about this research, please feel free to contact me by return email or at [PHONE] or [CONTACT INFORMATION].

Sincerely,
[EMAILERS NAME]

B.1.3 INTRODUCTION/VALIDATION

[SHOW Q1 IF LED LIGHT BULBS = 1, FAUCET AERATORS = 1, SHOWERHEADS = 1, SMART THERMOSTATS = 1, ADVANCED POWER STRIPS = 1, AIR PURIFIERS = 1, WATER CONSERVATION KITS = 1, TSVS = 1, WEATHERIZATION KITS = 1, WINDOW FILM

KITS = 1, ELECTRIC SAVINGS KITS = 1, SHOWERHEADS AND TSV = 1]

1. According to our records you purchased an Energy-Efficient Product from [WESBITE]. Is that correct?
   1. Yes
   2. No **[TERMINATE]**
   98. Do not recall **[TERMINATE]**
   99. Prefer not to answer **[TERMINATE]**

2. Do you or any other member of your household work for NYSEG or RG&E?

   1. Yes **[TERMINATE]**
   2. No

3. Our records indicate you purchased the following energy efficiency products from NYSEG/RG&E's Smart Solutions online marketplace.
   Please confirm that we have the correct quantity and product type(s) listed below:

[IF ALL ANSWERED 3 TERMINATE]

	Yes, this is correct (1)	I purchased this item, but the quantity is wrong (5)	No, I did not purchase this item (2)	Do not recall (3)
${e://Field/LED_bulb_QTY} LED light bulb(s) (1)	O	O	O	O
${e://Field/Faucet_Aerator_QTY} Faucet Aerator(s) (2)	O	O	O	O
${e://Field/Showerhead_QTY} Showerhead(s) (3)	O	O	O	O
${e://Field/ST_QTY} Smart thermostat(s) (4)	O	O	O	O
${e://Field/APS_QTY} Advanced power strip(s) (5)	O	O	O	O
${e://Field/AP_QTY} Air purifier(s) (6)	O	O	O	O
${e://Field/Water_Kit_QTY} Water Conservation Kit(s) (7)	O	O	O	O
${e://Field/TSV_QTY} TSV(s) (8)	O	O	O	O
${e://Field/ESK_QTY} Energy Saving Kit(s) (8)	O	O	O	O
${e://Field/Weather_Kit_QTY} Weatherization Kit(s) (9)	O	O	O	O
${e://Field/WFK_QTY} Window Film Kit(s) (10)	O	O	O	O
${e://Field/Electric_Kit_QTY} Electric Savings Kit(s) (11)	O	O	O	O
${e://Field/ SHOWERHEAD_WITH_TSV_QTY} Showerhead(s) with TSV (11)	O	O	O	O

[SHOW Q4 IF Q1 = I purchased this item, but the quantity is wrong.]

4. What is the correct quantity that you purchased?

1. LED light bulbs **[OPEN-ENDED]**
2. Faucet aerators **[OPEN-ENDED]**
3. Showerheads **[OPEN-ENDED]**
4. Smart thermostats **[OPEN-ENDED]**
5. Advanced power strips **[OPEN-ENDED]**
6. Air Purifiers **[OPEN-ENDED]**
7. Water conservation kits **[OPEN-ENDED]**
8. TSVs **[OPEN-ENDED]**
9. Energy saving kits **[OPEN-ENDED]**
10. Weatherization kits **[OPEN-ENDED]**
11. Window film kits **[OPEN-ENDED]**
12. Electric savings kits **[OPEN-ENDED]**
13. Showerhead(s) with TSV **[OPEN-ENDED]**

[SHOW Q5 IF Q1 = No, I did not purchase this item.]

5. Are you sure you did not purchase any of the following?

	Correct, I did not purchase (1)	Incorrect, I did purchase (2)
Display This Choice: **If Q1 =** ${e://Field/LED_bulb_QTY} **LED light bulb(s) [No, I did not purchase this item]** **Or Q1 =** ${e://Field/LED_bulb_QTY} **LED light bulb(s) [Do not recall]** LED light bulbs	O	O
Display This Choice: **If Q1 =** ${e://Field/Faucet_Aerator_QTY} **Faucet Aerator(s) [No, I did not purchase this item]** **Or Q1 =** ${e://Field/Faucet_Aerator_QTY} **Faucet Aerator(s) [Do not recall]** Faucet aerator(s)	O	O
Display This Choice: **If Q1 =** ${e://Field/Showerhead_QTY} **Showerhead(s) [No, I did not purchase this item]** **Or Q1 =** ${e://Field/Showerhead_QTY} **Showerhead(s) [Do not recall]** Showerhead(s)	O	O
Display This Choice: **If Q1 =** ${e://Field/ST_QTY} **Smart thermostat(s) [No, I did not purchase this item]** **Or Q1 =** ${e://Field/ST_QTY} **Smart thermostat(s) [Do not recall]** Smart thermostats	O	O

Display This Choice: **If Q1 =** ${e://Field/APS_QTY} **Advanced power strip(s) [No, I did not purchase this item]** **Or Q1 =** ${e://Field/APS_QTY} **Advanced power strip(s) [Do not recall]** Advanced power strip(s)	O	O
Display This Choice: **If Q11 =** ${e://Field/AP_QTY} **Air purifier(s) [No, I did not purchase this item]** **Or Q1 =** ${e://Field/AP_QTY} **Air purifier(s) [Do not recall]** Air purifier(s)	O	O
Display This Choice: **If Q1 =** ${e://Field/Water_Kit_QTY} **Water Conservation Kit(s) [No, I did not purchase this item]** **Or Q1 =** ${e://Field/Water_Kit_QTY} **Water Conservation Kit(s) [Do not recall]** Water Conservation Kit(s)	O	O
Display This Choice: **If Q1 =** ${e://Field/TSV_QTY} **TSV(s) [No, I did not purchase this item]** **Or Q1 =** ${e://Field/TSV_QTY} **TSV(s) [Do not recall]** TSV(s)	O	O
Display This Choice: **If Q1 =** ${e://Field/ESK_QTY} **TSV(s) [No, I did not purchase this item]** **Or Q1 =** ${e://Field/ESK_QTY} **TSV(s) [Do not recall]**	O	O

Energy Saving Kit(s)		
Display This Choice: **If Q1 =** ${e://Field/Weather_Kit_QTY} **Weatherization Kit(s) [No, I did not purchase this item]** **Or Q1 =** ${e://Field/Weather_Kit_QTY} **Weatherization Kit(s) [Do not recall]** Weatherization Kit(s)	O	O
Display This Choice: **If Q1 =** ${e://Field/WFK_QTY} **Window Film Kit(s) [No, I did not purchase this item]** **Or Q1 =** ${e://Field/WFK_QTY} **Window Film Kit(s) [Do not recall]** Window Film Kit(s)	O	O
Display This Choice: **If Q1 =** ${e://Field/Electric_Kit_QTY} **Electric Savings Kit(s) [No, I did not purchase this item]** **Or Q1 =** ${e://Field/Electric_Kit_QTY} **Electric Savings Kit(s) [Do not recall]** Electric Savings Kit(s)	O	O
Display This Choice: **If Q1 = ${e://Field/ SHOWERHEAD_WITH_TSV_QTY} Showerhead(s) with TSV [No, I did not purchase this item]** **Or Q1 = ${e://Field/ SHOWERHEAD_WITH_TSV_QTY} Showerhead(s) with TSV [Do not recall]**	O	O

Showerhead(s) with TSV		

6. Did you purchase anything else from the smart solutions website that is not listed?

    1. Yes
    2. No
    98. Do not recall

[SHOW Q7 IF Q6 = 1]

7. What other item(s) did you purchase? (Please select all that apply)

    1. LED Light bulb(s)
    2. Faucet Aerator(s)
    3. Showerhead(s)
    4. Smart thermostat(s)
    5. Advanced power strip(s)
    6. Air purifier(s)
    7. Water Conservation Kit(s)
    8. TSV(s)
    9. Energy Saving kit(s)
    10. Weatherization kit(s)
    11. Window Film kit(s)
    12. Electric Savings kit(s)
    13. Other (Please specify)
    98. Do not recall

B.1.4 SMART THERMOSTAT (SINGLE)

[SHOW Q8 - Q18 IF ${e://Field/ST_QTY} = 1]

8. What is the make and model of the new smart thermostat you purchased?

    1. Google Nest Learning Thermostat
    2. Google Nest Thermostat
    3. Honeywell Home Wi-Fi Color Touchscreen Programmable Thermostat
    4. Emerson Sensi smart thermostat
    5. Honeywell Home T5 Smart Touchscreen Thermostat
    6. ecobee Smart Thermostat Premium
    7. ecobee Smart Thermostat Enhanced
    8. Honeywell Home Wi-Fi 7-Day Programmable Thermostat
    9. ecobee3 lite
    10. Mysa Smart Thermostat for Electric Baseboard Heaters V2
    11. Honeywell Home T9 Wi-Fi Smart Thermostat with Sensor
    12. Emerson Sensi Touch smart thermostat
    13. Emerson Sensi Touch 2 smart thermostat
    98. Do not recall

9. What type of thermostat did your new smart thermostat replace?

1. Manual thermostat
2. Programmable thermostat
3. Smart thermostat
4. No existing thermostat
5. Other (Please specify)
98. Do not recall

10. Is the smart thermostat you purchased currently installed in your home?

1. Yes
2. No
98. Do not recall

[SHOW Q11 IF Q10 = 2]

11. Why is the smart thermostat not currently installed? [**MULTI-SELECT**]
    1. Unable to install myself
    2. Stopped working
    3. Did not like the make/model
    4. Did not work how expected
    96. Other (Please specify) **[OPEN-ENDED]**
    98. Do not recall

12. What is the primary fuel type used to heat your home?
    1. Electricity
    2. Natural gas
    3. Propane
    4. Wood/Pellet
    96. Other (Please specify) **[OPEN-ENDED]**
    98. Not sure

13. What type(s) of heating system(s) does your new smart thermostat(s) control? Please select all that apply **[MULTI-SELECT]**

    1. Electric furnace
    2. Gas furnace
    3. Heat pump
    4. I don’t have heating
    96. Other (Please specify) **[OPEN-ENDED]**
    98. Not sure

[SHOW Q14 IF Q12 = 1,2,3,4]

14. Was the heating system recently installed?
    1. Yes
    2. No
    98. Do not recall

[SHOW Q15 IF Q12 = 1,2,3,4]

15. Is the heating system a supplemental system?
    1. Yes
    2. No
    98. Do not recall

16. What type(s) of cooling system(s) does your new smart thermostat(s) control? (please select all that apply) **[MULTI-SELECT]**
    1. Central air conditioning
    2. Heat pump
    3. Window unit
    4. I don't have cooling
    5. Swamp cooler-Evaporative cooling
    6. Portable room AC
    96. Other (Please specify) **[OPEN-ENDED]**
    98. Do not recall

[SHOW Q17 IF Q16 = 1,2,3,4,5,6]

17. Was the cooling system recently installed?
    1. Yes
    2. No
    98. Do not recall

[SHOW Q18 IF Q16 = 1,2,3,4,5,6]

18. Is the cooling system a supplemental system?
    1. Yes
    2. No
    98. Do not recall

B.1.5 SMART THERMOSTAT (SECOND)

[SHOW Q19 - Q29 IF ${e://Field/ST_QTY} > 1]

19. What is the make and model of the second new smart thermostat you purchased?

    1. Google Nest Learning Thermostat
    2. Google Nest Thermostat
    3. Honeywell Home Wi-Fi Color Touchscreen Programmable Thermostat
    4. Emerson Sensi smart thermostat
    5. Honeywell Home T5 Smart Touchscreen Thermostat
    6. ecobee Smart Thermostat Premium
    7. ecobee Smart Thermostat Enhanced
    8. Honeywell Home Wi-Fi 7-Day Programmable Thermostat
    9. ecobee3 lite
    10. Mysa Smart Thermostat for Electric Baseboard Heaters V2
    11. Honeywell Home T9 Wi-Fi Smart Thermostat with Sensor

12. Emerson Sensi Touch smart thermostat
13. Emerson Sensi Touch 2 smart thermostat
98. Do not recall

20. What type of thermostat did your second new smart thermostat replace?

1. Manual thermostat
2. Programmable thermostat
3. Smart thermostat
4. No existing thermostat
5. Other (Please specify)
98. Do not recall

21. Is the second smart thermostat you purchased currently installed in your home?

1. Yes
2. No
98. Do not recall

[SHOW Q22 IF Q21 = 2]

22. Why is the second smart thermostat not currently installed? [**MULTI-SELECT**]

1. Unable to install myself
2. Stopped working
3. Did not like the make/model
4. Did not work how expected
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

23. What is the primary fuel type used to heat your home?

1. Electricity
2. Natural gas
3. Propane
4. Wood/Pellet
96. Other (Please specify) **[OPEN-ENDED]**
98. Not sure

24. What type(s) of heating system(s) does your new smart thermostat(s) control? Please select all that apply **[MULTI-SELECT]**

1. Electric furnace
2. Gas furnace
3. Heat pump
4. I don’t have heating
96. Other (Please specify) **[OPEN-ENDED]**
98. Not sure

[SHOW Q25 IF Q24 = 1,2,3,4]

25. Was the heating system recently installed?
    1. Yes
    2. No
    98. Do not recall

[SHOW Q26 IF Q24 = 1,2,3,4]

26. Is the heating system a supplemental system?
    1. Yes
    2. No
    98. Do not recall

27. What type(s) of cooling system(s) does your new smart thermostat(s) control? (please select all that apply)
    1. Central air conditioning
    2. Heat pump
    3. Window unit
    4. I don't have cooling
    5. Swamp cooler-Evaporative cooling
    6. Portable room AC
    96. Other (Please specify) **[OPEN-ENDED]**
    98. Do not recall

[SHOW Q28 IF Q27 = 1,2,3,4,5,6]

28. Was the cooling system recently installed?
    1. Yes
    2. No
    98. Do not recall

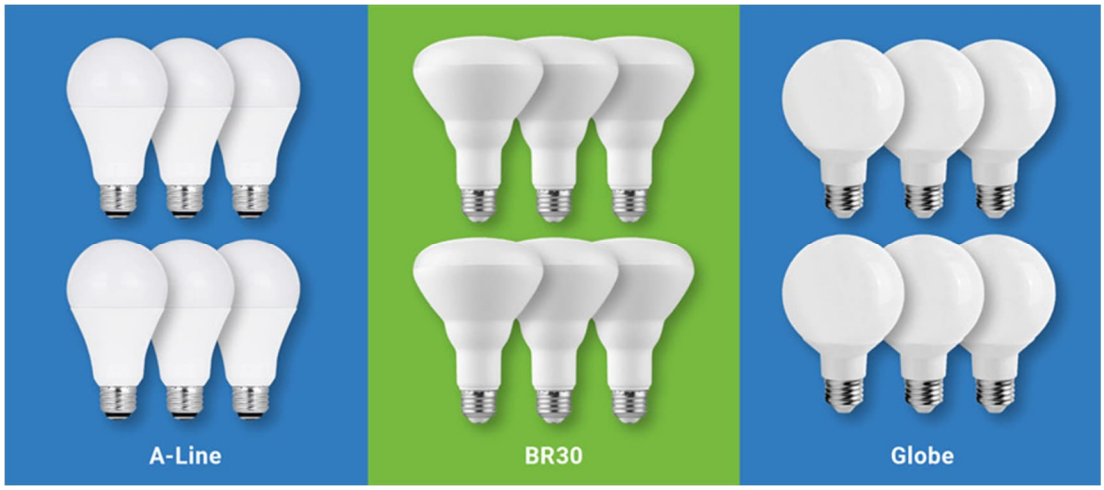
[SHOW Q29 IF Q27 = 1,2,3,4,5,6]

29. Is the cooling system a supplemental system?
    1. Yes
    2. No
    98. Do not recall

B.1.6 LED LIGHTBULB(S)

[SHOW Q30 - Q36 IF ${e://Field/LED_bulb_QTY} >= 1]

30. How many of each type of LED lightbulb(s) did you purchase from [WEBSITE]? Examples of some of the types of lightbulbs are provided in the image below.



1. Standard A-line LED bulbs (reference photo provided below) **[OPEN-ENDED; NUMERIC VALUE]**
2. BR30 LED bulbs (reference photo provided below) **[OPEN-ENDED; NUMERIC VALUE]**
3. Globe LED bulbs (reference photo provided below) **[OPEN-ENDED; NUMERIC VALUE]**
4. Candelabra LED bulbs **[OPEN-ENDED; NUMERIC VALUE]**
5. Night light LED bulbs **[OPEN-ENDED; NUMERIC VALUE]**
6. Recessed downlight LED bulbs **[OPEN-ENDED; NUMERIC VALUE]**
7. Battery backup LED bulbs **[OPEN-ENDED; NUMERIC VALUE]**
8. Security LED lights **[OPEN-ENDED; NUMERIC VALUE]**
9. Ambiance E26 LED bulbs **[OPEN-ENDED; NUMERIC VALUE]**
10. Other (Please specify) **[OPEN-ENDED; NUMERIC VALUE]**

98. Do not recall **[SKIP TO FAUCET AERATOR]**

[REPEAT Q31 THROUGH Q36 FOR EACH Q30 RESPONSE >0]

31. How many of the [Q30 RESPONSE QUANTITY] [Q30 RESPONSE] you purchased from [WEBSITE] are currently installed in the following areas? [**INCLUDE VALIDATION: TOTAL MUST EQUAL Q30 RESPONSE QUANTITY]**
    1. Indoor - Residential **[OPEN-ENDED; NUMERIC VALUE]**
    2. Outdoors **[OPEN-ENDED; NUMERIC VALUE]**
    3. Commercial Spaces **[OPEN-ENDED; NUMERIC VALUE]**
    4. Not installed **[OPEN-ENDED; NUMERIC VALUE]**

    98. Do not recall

[SHOW Q32 IF Q31(4) >0]

32. Why are not all the LED lightbulbs installed in your home? (Please select all that apply). **[MULTI-SELECT]**
    1. Waiting for old lightbulbs to burn out
    2. Not the correct wattage for my needs
    3. New bulbs are too bright
    4. New bulbs are not bright enough

5. Do not fit into any fixtures
6. Did not like the color
7. Lights are used seasonally
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

[SHOW Q33 IF Q32 = 1]

33. Are you planning on installing the rest of the LED lightbulbs within the next year?
    1. Yes, all of them
    2. Yes, some of them
    3. No, none of them
    98. Not sure

[SHOW Q34 IF Q31(1 - 3) RESPONSE QUANTITY >0]

34. How many of each of the following types of lightbulbs did you replace with the [Q30 RESPONSE QUANTITY] new [Q30 RESPONSE] you installed? Examples of each type of lightbulb are provided in the image below. [**INCLUDE VALIDATION: TOTAL MUST EQUAL Q31(1 - 3) RESPONSE QUANTITY]**



    1. Traditional incandescent/halogen **[OPEN-ENDED; NUMERIC VALUE]**
    2. CFL **[OPEN-ENDED; NUMERIC VALUE]**
    3. LED **[OPEN-ENDED; NUMERIC VALUE]**
    4. I installed the bulb(s) in a fixture or socket where there were none before **[OPEN-ENDED; NUMERIC VALUE]**
    98. Do not recall

35. Why did you purchase the [Q30 RESPONSE]? (Please select all that apply) [**MULTISELECT**]
    1. Replace burned out bulbs
    2. Replace old, inefficient bulbs
    3. Replace working bulbs with a different color or brightness
    4. Install new light fixture or lamp socket

5. To have spare bulbs on hand
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

36. Which is the most important characteristic you consider when purchasing **[Q30 RESPONSE]**?
    1. Price
    2. Energy efficiency
    3. ENERGY STAR® certification
    4. Brightness of the bulb
    5. How long the bulb lasts
    6. The ability to dim the bulb
    7. Color of the light
    96. Other (Please specify) [**OPEN-ENDED**]
    98. Do not recall

B.1.7 FAUCET AERATOR(S)

[SHOW Q37 - Q40 IF ${e://Field/Faucet_Aerator_QTY} >= 1]

37. How many faucet aerator(s) that you purchased are currently installed in your home?
    1. All of them
    2. Some of them **[OPEN-ENDED; NUMERIC VALUE]**
    3. None of them
    98. Do not recall

[SHOW Q38 IF Q37 = 2 OR 3]

38. Why are not all the faucet aerator(s) currently installed in your home?
    1. Unable to install myself
    2. Did not fit the faucets in my home
    3. Not enough water pressure
    96. Other (Please specify) **[OPEN-ENDED]**
    98. Do not recall

[SHOW Q39 - Q40 IF Q37 = 1 OR 2]

39. Where are the faucet aerator(s) currently installed in your home?
    1. Number in kitchen: **[OPEN-ENDED; NUMERIC VALUE]**
    2. Number in bathroom: **[OPEN-ENDED; NUMERIC VALUE]**
    3. Number in other location(s): **[OPEN-ENDED; NUMERIC VALUE]**
    98. Do not recall

40. Which type of water heater is in your home?
    1. Gas-fired storage water heater
    2. Oil-fired storage water heater
    3. Electric storage water heater

4. Instantaneous gas fired water heater
5. Instantaneous electric water heater
98. Other (Please specify) **[OPEN-ENDED]**
99. Do not recall

B.1.8 LOW FLOW SHOWERHEAD(S)

[SHOW Q41 - Q44 IF ${e://Field/Showerhead_QTY} >= 1]

41. How many low flow showerhead(s) that you purchased are currently installed in your home?

    1. All of them
    2. Some of them **[OPEN-ENDED; NUMERIC VALUE]**
    3. None of them
    98. Do not recall

[SHOW Q42 IF Q41 = 2 OR 3]

42. Why are not all the low flow showerhead(s) currently installed in your home?
    1. Unable to install myself
    2. Did not fit the showerhead fixtures in my home
    3. Not enough water pressure
    96. Other (Please specify) **[OPEN-ENDED]**
    98. Do not recall

[SHOW Q43 - Q44 IF Q41 = 1 OR 2]

43. Which type of water heater is in your home?

    1. Gas-fired storage water heater
    2. Oil-fired storage water heater
    3. Electric storage water heater
    4. Instantaneous gas-fired water heater
    5. Instantaneous electric water heater
    98. Other (Please specify) **[OPEN-ENDED]**
    99. Do not recall

44. How many people use the showerhead regularly?
    1. 1 person
    2. 2 people
    3. 3 people
    4. 4 or more
    96. Other (Please specify) **[OPEN-ENDED]**
    98. Do not recall

B.1.9 TSV(S)

[SHOW Q45 - Q47 IF ${e://Field/TSV_QTY} >= 1]

45. How many TSV(s) that you purchased are currently installed in your home?

    1. All of them
    2. Some of them **[OPEN-ENDED; NUMERIC VALUE]**
    3. None of them
    98. Do not recall

[SHOW Q46 IF Q45 = 2 OR 3]

46. Why are not all the TSVs currently installed in your home?
    1. Unable to install myself
    2. Did not fit the showerhead fixtures in my home
    3. Not enough water pressure
    96. Other (Please specify) **[OPEN-ENDED]**
    98. Do not recall

47. Which type of water heater is in your home?

    1. Gas-fired storage water heater
    2. Oil-fired storage water heater
    3. Electric storage water heater
    4. Instantaneous gas-fired water heater
    5. Instantaneous electric water heater
    96. Other (Please specify) **[OPEN-ENDED]**
    98. Do not recall

B.1.10 LOW FLOW SHOWERHEAD(S) WITH TSV

[SHOW Q48 – Q51 IF ${e://Field/ SHOWERHEAD_WITH_TSV_QTY} >= 1]

48. How many low flow showerhead(s) with TSVs that you purchased are currently installed in your home?

    1. All of them
    2. Some of them **[OPEN-ENDED; NUMERIC VALUE]**
    3. None of them
    98. Do not recall

[SHOW Q49 IF Q48 = 2 OR 3]

49. Why are not all the low flow showerhead(s) with TSVs currently installed in your home?
    1. Unable to install myself
    2. Did not fit the showerhead fixtures in my home

3. Not enough water pressure
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

[SHOW Q50 - Q51 IF Q48 = 1 OR 2]

50. Which type of water heater is in your home?

1. Gas-fired storage water heater
2. Oil-fired storage water heater
3. Electric storage water heater
4. Instantaneous gas-fired water heater
5. Instantaneous electric water heater
6. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

51. How many people use the showerhead regularly?

1. 1 person
2. 2 people
3. 3 people
4. 4 or more
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

B.1.11 ADVANCED POWER STRIP(S)

[SHOW Q52 - Q60 IF ${e://Field/APS_QTY} >= 1]

52. How many of each type of advanced power strip(s) did you purchase?

1. Simply Conserve 7-outlet advanced power strip **[OPEN-ENDED; NUMERIC VALUE]**
2. TrickleStar® 4-outlet advanced power strip **[OPEN-ENDED; NUMERIC VALUE]**
3. TrickleStar® 7-outlet advanced power strip **[OPEN-ENDED; NUMERIC VALUE]**
4. TrickleStar® 7-outlet multi-sensing advanced power strip **[OPEN-ENDED; NUMERIC VALUE]**
98. Do not recall

53. How many advanced power strip(s) that you purchased are currently being used in your home?

1. All of them
2. Some of them **[OPEN-ENDED; NUMERIC VALUE]**
3. None of them
98. Do not recall

[SHOW Q54 IF Q53 = 2 OR 3]

54. Why are not all the advanced power strip(s) currently being used in your home? (Please select all that apply) [**MULTISELECT**]
    1. Already have other power strips setup
    2. Did not know how to set it up
    3. Did not like the look of it
    4. Had no appropriate use for it
    96. Other (Please specify) **[OPEN-ENDED]**
    98. Do not recall

[SHOW Q55 IF Q53 = 1 OR 2]

55. Did the new advanced power strip(s) replace existing multi-use electrical socket equipment?
    1. Yes
    2. No
    98. Do not recall

[SHOW Q56 IF Q55 = 1]

56. What type of equipment did each of the following type(s) of new advanced power strip(s) replace? **[MULTI-SELECT OPTIONS: 1 = STANDARD POWER STRIP, 2 = SMART/ADVANCED POWER STRIP, 96 = OTHER (PLEASE SPECIFIFY), AND 98 = DO NOT RECALL]**
    1. **[SHOW IF Q52(1)>0]** Simply Conserve 7-outlet advanced power strip **[OPEN-ENDED; NUMERIC VALUE]**
    2. **[SHOW IF Q52(2)>0]** TrickleStar® 4-outlet advanced power strip **[OPEN-ENDED; NUMERIC VALUE]**
    3. **[SHOW IF Q52(3)>0]** TrickleStar® 7-outlet advanced power strip **[OPEN-ENDED; NUMERIC VALUE]**
    4. **[SHOW IF Q52(4)>0]** TrickleStar® 7-outlet multi-sensing advanced power strip **[OPEN-ENDED; NUMERIC VALUE]**
    98. Do not recall

[SHOW Q57 IF Q53 = 1 OR 2]

57. Where did you learn how to properly setup the advanced power strip(s) so that energy is saved by turning off idle devices?
    1. Already knew how to setup advanced power strips
    2. Instructions provided with the advanced power strip
    3. Information/video found through online search
    4. [UTILITY] customer service
    5. Product description on Smart Solution's website
    6. I did not know it had to be setup a certain way
    96. Other (Please specify) **[OPEN-ENDED]**
    98. Do not recall

[SHOW Q58 IF Q53 = 1 OR 2]

58. Using the advanced power strip example below, please specify what is currently plugged into the "always on" outlet(s) (in black) for each of the following types of new advanced power strip(s) that are setup in your home. **[MULTI-SELECT OPTIONS: 1 = TELEVISION, 2 = DVD/BLU-RAY PLAYER, 3 = GAMING CONSOLE, 4 = SOUND BAR, 5 = COMPUTER OR LAPTOP, 6 = INTERNET MODEM/WI-FI ROUTER, 7 = COMPUTER KEYBOARD OR MOUSE, 8 = ROOM/PORTABLE FAN, 9 = FLOOR/DESK LAMP, 10 = KITCHEN APPLIANCES (SUCH AS REFRIGERATOR, MICROWAVE, TOASTER, COFFEE MAKER, ETC.), 11 = NOTHING, 96 = OTHER (PLEASE SPECIFY), 98 = DO NOT RECALL, AND 99 = NOT APPLICABLE]**



1. **[SHOW IF Q52(1)>0]** Simply Conserve 7-outlet advanced power strip **[OPEN-ENDED; NUMERIC VALUE]**
2. **[SHOW IF Q52(2)>0]** TrickleStar® 4-outlet advanced powerTap **[OPEN-ENDED; NUMERIC VALUE]**
3. **[SHOW IF Q52(3)>0]** TrickleStar® 7-outlet advanced power strip **[OPEN-ENDED; NUMERIC VALUE]**
4. **[SHOW IF Q52(4)>0]** TrickleStar® 7-outlet multi-sensing advanced power strip **[OPEN-ENDED; NUMERIC VALUE]**

98. Do not recall

[SHOW Q59 IF Q53 = 1 OR 2]

59. Using the advanced power strip example below, please specific what is currently plugged into the "switched" outlets (in teal) for each of the following types of new advanced power strip(s) that are setup in your home. **[MULTI-SELECT OPTIONS: 1 = TELEVISION, 2 = DVD/BLU-RAY PLAYER, 3 = GAMING CONSOLE, 4 = SOUND BAR, 5 = COMPUTER OR LAPTOP, 6 = INTERNET MODEM/WI-FI ROUTER, 7 = COMPUTER KEYBOARD OR MOUSE, 8 = ROOM/PORTABLE FAN, 9 = FLOOR/DESK LAMP, 10 = KITCHEN APPLIANCES (SUCH AS REFRIGERATOR, MICROWAVE, TOASTER, COFFEE MAKE, ETC.), 11 = NOTHING, 96 = OTHER (PLEASE SPECIFY), AND 98 = DO NOT RECALL]**



1. **[SHOW IF Q52(1)>0]** Simply Conserve 7-outlet advanced power strip **[OPEN-ENDED; NUMERIC VALUE]**
2. **[SHOW IF Q52(2)>0]** TrickleStar® 4-outlet advanced powerTap **[OPEN-ENDED; NUMERIC VALUE]**
3. **[SHOW IF Q52(3)>0]** TrickleStar® 7-outlet advanced power strip **[OPEN-ENDED; NUMERIC VALUE]**
4. **[SHOW IF Q52(4)>0]** TrickleStar® 7-outlet multi-sensing advanced power strip **[OPEN-ENDED; NUMERIC VALUE]**

98. Do not recall

[SHOW Q60 IF Q53 = 1 OR 2]

60. Using the advanced power strip example below, please specify what is currently plugged into the "master" outlet (in black) for each of the following types of new advanced power strip(s) that are setup in your home. **[SINGLE-SELECT OPTIONS: 1 = TELEVISION, 2 = DVD/BLU-RAY PLAYER, 3 = GAMING CONSOLE, 4 = SOUND BAR, 5 = COMPUTER OR LAPTOP, 6 = INTERNET MODEM/WI-FI ROUTER, 7 = COMPUTER KEYBOARD OR MOUSE, 8 = ROOM/PORTABLE FAN, 9 = FLOOR/DESK LAMP, 10 = KITCHEN APPLIANCES (SUCH AS REFRIGERATOR, MICROWAVE, TOASTER, COFFEE MAKER, ETC.), 11 = NOTHING, 96 = OTHER (PLEASE SPECIFY), 98 = DO NOT RECALL, AND 99 = NOT APPLICABLE]**



1. **[SHOW IF Q52(1)>0]** Simply Conserve 7-outlet advanced power strip **[OPEN-ENDED; NUMERIC VALUE]**
2. **[SHOW IF Q52(2)>0]** TrickleStar® 4-outlet advanced powerTap **[OPEN-ENDED; NUMERIC VALUE]**
3. **[SHOW IF Q52(3)>0]** TrickleStar® 7-outlet advanced power strip **[OPEN-ENDED; NUMERIC VALUE]**
4. **[SHOW IF Q52(4)>0]** TrickleStar® 7-outlet multi-sensing advanced power strip **[OPEN-ENDED; NUMERIC VALUE]**

98. Do not recall

B.1.12 AIR PURIFIER (SINGLE)

[SHOW Q61 - Q70 IF ${e://Field/AP_QTY} = 1]

61. What is the make and model of the new air purifier you purchased?

    1. Honeywell HEPA Air Purifier (model HPA100)
    2. Honeywell AirGenius 4 Compact Tower
    3. Honeywell PowerPlus HEPA Air Purifier for Medium/Large Rooms
    98. Do not recall

62. Did the new air purifier replace an existing air purifier?

    1. Yes
    2. No
    98. Do not recall

63. Is the new air purifier you purchased currently being used in your home?

    1. Yes
    2. No
    98. Do not recall

[SHOW Q64 IF Q63 = 2]

64. Why is the air purifier not currently being used in your home? [**MULTI-SELECT**]

    1. Had no use for it
    2. Stopped working
    3. Did not like the make/model
    4. Did not work how expected
    5. Only use it seasonally
    96. Other (Please specify) **[OPEN-ENDED]**
    98. Do not recall

[SHOW Q65 IF Q63 = 1]

65. How often do you use the new air purifier?

    1. Keep it on all the time
    2. Keep it on only during certain times of the day
    3. Keep it on only during certain times of the year
    4. Never keep it on or use it
    96. Other (Please specify) **[OPEN-ENDED]**
    98. Do not recall

B.1.13 AIR PURIFIER (SECOND)

[SHOW Q66 - Q70 IF ${e://Field/APS_QTY}= 2]

66. What is the make and model of the second new air purifier you purchased?

    1. Honeywell HEPA Air Purifier (model HPA100)

2. Honeywell AirGenius 4 Compact Tower
3. Honeywell PowerPlus HEPA Air Purifier for Medium/Large Rooms

Do not recall

67. Did the second new air purifier replace an existing air purifier?

1. Yes
2. No
98. Do not recall

68. Is the second air purifier you purchased currently being used in your home?

1. Yes
2. No
98. Do not recall

[SHOW Q69 IF Q68 = 2]

69. Why is the second air purifier not currently being used in your home? [**MULTI-SELECT**]

1. Had no use for it
2. Stopped working
3. Did not like the make/model
4. Did not work how expected
5. Only use it seasonally
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

[SHOW Q70 IF Q68 = 1]

70. How often do you use the second air purifier?

1. Keep it on all the time
2. Keep it on only during certain times of the day
3. Keep it on only during certain times of the year
4. Never keep it on or use it
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

B.1.14 ENERGY SAVING KIT (SINGLE)

[SHOW Q71 - Q88 IF ${e://Field/ESK_QTY} = 1]

71. Are all four of the 9W A19 LED lightbulbs that were included in the energy saving kit currently installed in your home?

1. Yes, all of them are installed
2. No, only some of them are installed
3. No, none of them are installed
98. Do not recall

[SHOW Q72 IF Q71 = 2]

72. How many of the four 9W A19 LED lightbulbs that were included in the energy saving kit are currently installed in your home?

    1. 1 bulb
    2. 2 bulbs
    3. 3 bulbs
    98. Do not recall

[SHOW Q73 IF Q71 = 2 OR 3]

73. Why are not all of the LED lightbulbs currently installed in your home? (Please select all that apply). **[MULTI-SELECT]**
    1. Waiting for old lightbulbs to burn out
    2. Not the correct wattage for my needs
    3. New bulbs are too bright
    4. New bulbs are not bright enough
    5. Do not fit into any fixtures
    6. Did not like the color
    96. Other (Please specify) **[OPEN-ENDED]**
    98. Do not recall

[SHOW Q74 IF Q71 = 1 OR 2]

74. How many of the four 9W A19 LED lightbulbs that were included in the energy saving kit are currently installed in the following areas? [**INCLUDE VALIDATION: TOTAL MUST BE EQUAL TO FOUR]**
    1. Indoor - Residential **[OPEN-ENDED; NUMERIC VALUE]**
    2. Outdoors **[OPEN-ENDED; NUMERIC VALUE]**
    3. Commercial Spaces **[OPEN-ENDED; NUMERIC VALUE]**
    4. Not installed **[OPEN-ENDED; NUMERIC VALUE]**
    98. Do not recall

[SHOW Q75 IF Q71 = 1 OR 2]

75. How many of each of the following types of light bulbs did you replace with the new LED lightbulbs you installed? Examples of each type of lightbulb are provided in the image below. [**INCLUDE VALIDATION: TOTAL MUST BE EQUAL TO Q74(1,2,3) RESPONSE QUANTITY]**



1. Traditional incandescent/halogen **[OPEN-ENDED; NUMERIC VALUE]**
2. CFL **[OPEN-ENDED; NUMERIC VALUE]**
3. LED **[OPEN-ENDED; NUMERIC VALUE]**
4. I installed the bulb(s) in a fixture or socket where there were none before **[OPEN-ENDED; NUMERIC VALUE]**

98. Do not recall

76. Is the faucet aerator that was included in the energy saving kit currently installed in your home?

1. Yes
2. No

98. Do not recall

[SHOW Q77 IF Q76 = 2]

77. Why is the faucet aerator not currently installed in your home? [**MULTI-SELECT**]

1. Unable to install myself
2. Did not fit the faucets in my home
3. Not enough water pressure

96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

[SHOW Q78 IF Q76 = 1]

78. Where is the faucet aerator currently installed in your home?

1. Kitchen
2. Bathroom
3. Other (Please specify) **[OPEN-ENDED]**

98. Do not recall

79. Is the low flow showerhead that was included in your energy saving kit currently installed in your home?

1. Yes
2. No
98. Do not recall

[SHOW Q80 IF Q79 = 2]

80. Why is the low flow showerhead not currently installed in your home? [**MULTI-SELECT**]
    1. Unable to install myself
    2. Did not fit the showerhead fixtures in my home
    3. Not enough water pressure
    96. Other (Please specify) **[OPEN-ENDED]**
    98. Do not recall

81. Which type of water heater is in your home?
    1. Gas-fired storage water heater
    2. Oil-fired storage water heater
    3. Electric storage water heater
    4. Instantaneous gas fired water heater
    5. Instantaneous electric water heater
    96. Other (Please specify) [OPEN-ENDED]
    98. Do not recall

82. How many people use the showerhead regularly?
    1. 1 person
    2. 2 people
    3. 3 people
    4. 4 or more
    97. Other (Please specify) **[OPEN-ENDED]**
    99. Do not recall

83. Is the advanced power strip that was included in the energy saving kit currently being used in your home?
    1. Yes
    2. No
    98. Do not recall

[SHOW Q84 IF Q83 = 2]

84. Why is the advanced power strip not currently being used in your home? [**MULTI-SELECT**]
    1. Already have other power strip setup
    2. Did not know how to set it up
    3. Did not like the look of it
    4. Had no appropriate use for it
    96. Other (Please specify) **[OPEN-ENDED]**
    98. Do not recall

[SHOW Q85 IF Q83 = 1]

85. Did the new advanced power strip replace existing multi-use electrical socket equipment?
    1. Yes
    2. No
    98. Do not recall

[SHOW Q86 IF Q85 = 1]

86. What type of equipment did the new advanced power strip replace?
    1. Standard power strip
    2. Smart/advanced power strip
    96. Other (Please specify) **[OPEN-ENDED]**
    98. Do not recall

[SHOW Q87 IF Q83 = 1]

87. Where did you learn how to properly setup the advanced power strip so that energy is saved by turning off idle devices?
    1. Already knew how to setup advanced power strips
    2. Instructions provided with the advanced power strip
    3. Information/video found through online search
    4. I did not know it had to be setup a certain way
    5. [UTILITY] customer service
    6. Product description on Smart Solution's website
    96. Other (Please specify) **[OPEN-ENDED]**
    98. Do not recall

[SHOW Q88 IF Q83 = 1]

88. Using the advanced power strip example below, please specify what is currently plugged into each type of plug for the new advanced power strip that is setup in your home. **[MULTI-SELECT OPTIONS: 1 = TELEVISION, 2 = DVD/BLU-RAY PLAYER, 3 = GAMING CONSOLE, 4 = SOUND BAR, 5 = COMPUTER OR LAPTOP, 6 = INTERNET MODEM/WI-FI ROUTER, 7 = COMPUTER KEYBOARD OR MOUSE, 8 = ROOM/PORTABLE FAN, 9 = FLOOR/DESK LAMP, 10 = KITCHEN APPLIANCES (SUCH AS REFRIGERATOR, MICROWAVE, TOASTER, COFFEE MAKE, ETC.), 96 = OTHER (PLEASE SPECIFY), 11 = NOTHING, 98 = DO NOT RECALL, AND 99 = NOT APPLICABLE]**



1. "always on" outlet(s) (in black)
2. "switched" outlets (in teal)
3. "master" outlet (in black)

B.1.15 ENERGY SAVING KITS (MULTIPLES)

[SHOW Q89 - Q108 IF ${e://Field/ESK_QTY} >= 2]

89. Are all eight of the 9W A19 LED lightbulbs that were included in both energy saving kits currently installed in your home?

    1. Yes, all of them are installed
    2. No, only some of them are installed
    3. No, none of them are installed
    98. Do not recall

[SHOW Q90 IF Q89 = 2]

90. How many of the eight 9W A19 LED lightbulbs that were included in the energy saving kit are currently installed in your home?

    1. 1 bulb
    2. 2 bulbs
    3. 3 bulbs
    4. 4 bulbs
    5. 5 bulbs
    6. 6 bulbs
    7. 7 bulbs
    8. 8 bulbs
    98. Do not recall

[SHOW Q91 IF Q89 = 2 OR 3]

91. Why are not all the LED lightbulbs currently installed in your home? (Please select all that apply) **[MULTISELECT]**

    1. Waiting for old lightbulbs to burn out
    2. Not the correct wattage for my needs
    3. New bulbs are too bright
    4. New bulbs are not bright enough
    5. Do not fit into any fixtures
    6. Did not like the color
    96. Other (Please specify) **[OPEN-ENDED]**
    98. Do not recall

[SHOW Q92 IF Q89 = 1 OR 2]

92. How many of the eight 9W A19 LED lightbulbs that were included in both energy saving kits are currently installed in the following areas? [**INCLUDE VALIDATION: TOTAL MUST BE EQUAL TO EIGHT]**

1. Indoor – Residential **[OPEN-ENDED; NUMERIC VALUE]**
2. Outdoors **[OPEN-ENDED; NUMERIC VALUE]**
3. Commercial Spaces **[OPEN-ENDED; NUMERIC VALUE]**
4. Not installed **[OPEN-ENDED; NUMERIC VALUE]**

98. Do not recall

[SHOW Q93 IF Q89 = 1 OR 2]

93. How many of each of the following types of light bulbs did you replace with the new LED lightbulbs you installed? Examples of each type of lightbulb are provided in the image below. [**INCLUDE VALIDATION: TOTAL MUST BE EQUAL TO Q92(1,2,3) RESPONSE QUANTITY]**



1. Traditional incandescent/halogen **[OPEN-ENDED; NUMERIC VALUE]**
2. CFL **[OPEN-ENDED; NUMERIC VALUE]**
3. LED **[OPEN-ENDED; NUMERIC VALUE]**
4. I installed the bulb(s) in a fixture or socket where there were none before **[OPEN-ENDED; NUMERIC VALUE]**

98. Do not recall

94. Are the two faucet aerators that were included in both energy saving kits currently installed in your home?

1. Both of them are installed
2. Only one of them is installed
3. Neither of them are installed

98. Do not recall

[SHOW Q95 IF Q94 = 2 OR 3]

95. Why are not both faucet aerator(s) currently installed in your home? (Please select all that apply) **[MULTI-SELECT]**

1. Unable to install myself
2. Did not fit the faucets in my home

3. Not enough water pressure
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

[SHOW Q96 IF Q94 = 1 OR 2]

96. Where are the faucet aerator(s) currently installed in your home?
    1. Number in kitchen: **[OPEN-ENDED; NUMERIC VALUE]**
    2. Number in bathroom: **[OPEN-ENDED; NUMERIC VALUE]**
    3. Number is other location(s): **[OPEN-ENDED; NUMERIC VALUE]**
    98. Do not recall

97. Are the two low flow showerheads that were included in both energy saving kits currently installed in your home?

    1. Both of them are installed
    2. Only one of them is installed
    3. Neither of them are installed
    98. Do not recall

[SHOW Q98 IF Q97 = 2 OR 3]

98. Why are not both low flow showerhead(s) currently installed in your home? (Please select all that apply) **[MULTI-SELECT]**
    1. Unable to install myself
    2. Did not fit the showerhead fixtures in my home
    3. Not enough water pressure
    96. Other (Please specify) **[OPEN-ENDED]**
    98. Do not recall

99. Which type of water heater is in your home?

    1. Gas-fired storage water heater
    2. Oil-fired storage water heater
    3. Electric storage water heater
    4. Instantaneous gas fired water heater
    5. Instantaneous electric water heater
    98. Other (Please specify) **[OPEN-ENDED]**
    99. Do not recall

100. How many people use the showerhead regularly?
    1. 1 person
    2. 2 people
    3. 3 people
    4. 4 or more
    96. Other (Please specify) **[OPEN-ENDED]**
    98. Do not recall

101. Are the two advanced power strips that were included in both energy saving kits currently being used in your home?

1. Both of them are being used
2. Only one of them is being used
3. Neither of them are being used
98. Do not recall

[SHOW Q102 IF Q101 = 2 OR 3]

102. Why are not both advanced power strip(s) currently being used in your home? (Please select all that apply) **[MULTI-SELECT]**
    1. Already have other power strip(s) setup
    2. Did not know how to set it up
    3. Did not like the look of it
    4. Had no appropriate use for it
    96. Other (Please specify) **[OPEN-ENDED]**
    98. Do not recall

[SHOW Q103 IF Q101 = 1 OR 2]

103. Did the new advanced power strip(s) replace existing multi-use electrical socket equipment?
    1. Yes
    2. No
    98. Do not recall

[SHOW Q104 IF Q103 = 1]

104. What type of equipment did the new advanced power strip(s) replace? **[MULTI-SELECT OPTIONS: 1 = STANDARD POWER STRIP, 2 = SMART/ADVANCED POWER STRIP, 96 = OTHER (PLEASE SPECIFIFY), AND 98 = DO NOT RECALL]**
    1. **[SHOW IF Q101 = 1 OR 2]** Advanced power strip #1
    2. **[SHOW IF Q101 = 1]** Advanced power strip #2

[SHOW Q105 IF Q101 = 1 OR 2]

105. Where did you learn how to properly setup the advanced power strip(s) so that energy is saved by turning off idle devices?
    1. Already knew how to setup advanced power strips
    2. Instructions provided with the advanced power strip(s)
    3. Information/video found through online search
    4. I did not know it had to be setup a certain way
    5. [UTILITY] customer service
    6. Product description on Smart Solution’s website
    96. Other (Please specify) **[OPEN-ENDED]**
    98. Do not recall

[SHOW Q106 IF Q101 = 1 OR 2]

106. Using the advanced power strip example below, please specify what is currently plugged into the "always on" outlet(s) (in black) for the new advanced power strip(s) that are setup in your home. **[MULTI-SELECT OPTIONS: 1 = TELEVISION, 2 = DVD/BLU-RAY PLAYER, 3 = GAMING CONSOLE, 4 = SOUND BAR, 5 = COMPUTER OR LAPTOP, 6 = INTERNET MODEM/WI-FI ROUTER, 7 = COMPUTER KEYBOARD OR MOUSE, 8 = ROOM/PORTABLE FAN, 9 = FLOOR/DESK LAMP, 10 = KITCHEN APPLIANCES (SUCH AS REFRIGERATOR, MICROWAVE, TOASTER, COFFEE MAKE, ETC.), 96 = OTHER (PLEASE SPECIFY), 11 = NOTHING, 97 = NOT APPLICABLE, 98 = DO NOT RECALL, AND 99 = NOT APPLICABLE]**



1. **[SHOW IF Q101 = 1 OR 2]** Advanced power strip #1
2. **[SHOW IF Q101 = 1]** Advanced power strip #2

[SHOW Q107 IF Q101 = 1 OR 2]

107. Using the color-coded advanced power strip example below, please specify what is currently plugged into the "switched" outlets (in teal) for the new advanced power strip(s) that are setup in your home. **[SINGLE-SELECT OPTIONS: 1 = TELEVISION, 2 = DVD/BLU-RAY PLAYER, 3 = GAMING CONSOLE, 4 = SOUND BAR, 5 = COMPUTER OR LAPTOP, 6 = INTERNET MODEM/WI-FI ROUTER, 7 = COMPUTER KEYBOARD OR MOUSE, 8 = ROOM/PORTABLE FAN, 9 = FLOOR/DESK LAMP, 10 = KITCHEN APPLIANCES (SUCH AS REFRIGERATOR, MICROWAVE, TOASTER, COFFEE MAKE, ETC.), 11 = NOTHING, 96 = OTHER (PLEASE SPECIFY), 97 = NOT APPLICABLE, 98 = DO NOT RECALL, AND 99 = NOT APPLICABLE]**



1. **[SHOW IF Q101 = 1 OR 2]** Advanced power strip #1
2. **[SHOW IF Q101 = 1]** Advanced power strip #2

[SHOW Q108 IF Q101 = 1 OR 2]

108. Using the color-coded advanced power strip example below, please specify what is currently plugged into the "master" outlet (in black) for the new advanced power strip(s) that are setup in your home. **[SINGLE-SELECT OPTIONS: 1 = TELEVISION, 2 = DVD/BLU-RAY PLAYER, 3 = GAMING CONSOLE, 4 = SOUND BAR, 5 = COMPUTER OR LAPTOP, 6 = INTERNET MODEM/WI-FI ROUTER, 7 = COMPUTER KEYBOARD OR MOUSE, 8 = ROOM/PORTABLE FAN, 9 = FLOOR/DESK LAMP, 10 = KITCHEN APPLIANCES (SUCH AS REFRIGERATOR, MICROWAVE, TOASTER, COFFEE MAKE, ETC.), 11 = NOTHING, 96 = OTHER (PLEASE SPECIFY), 97 = NOT APPLICABLE, 98 = DO NOT RECALL, AND 99 = NOT APPLICABLE]**



1. **[SHOW IF Q101 = 1 OR 2]** Advanced power strip #1
2. **[SHOW IF Q101 = 1]** Advanced power strip #2

B.1.16 WEATHERIZATION KIT (SINGLE)

[SHOW Q109-Q133 IF ${e://Field/Weather_Kit_QTY} = 1]

109. Are both self-stick door sweeps that were included in the weatherization kit currently installed in your home?

1. Yes, both of them are installed
2. No, only one of them is installed
3. No, none of them are installed

98. Do not recall

[SHOW Q110 IF Q109 = 3]

110. Why are the self-stick door sweeps not installed in your home? (Please select all that apply). **[MULTI-SELECT]**

1. I am unable to install it myself
2. I did not understand the installation instructions
3. It does not fit on the doors in my home
4. Did not like the look of it
5. I already have a similar product installed on my doors
6. I had no appropriate use for it

96. Other (Please specify) **[OPEN-ENDED]**

98. Do not recall

111. Are both the corner doorjamb pads that were included in the weatherization kit installed in your home?

1. Yes, both of them are installed
2. No, only one of them is installed
3. No, none of them are installed
98. Do not recall

[SHOW Q112 IF Q111 = 3]

112. Why are the corner doorjamb pads not installed in your home? (Please select all that apply). **[MULTI-SELECT]**

1. I am unable to install it myself
2. I did not understand the installation instructions
3. It does not fit on the doors in my home
4. Did not like the look of it
5. I already have a similar product on my doors
6. I have no appropriate use for it
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

113. Is the rope door and window caulk that was included in the weatherization kit installed in your home?

1. Yes, on both windows and doors
2. Yes, on windows
3. Yes, on doors
4. No, I did not install on either my windows or doors
98. Do not recall

114. About how much of the door and window caulk was installed?

1. All of it
2. Half of it
98. Do not recall

[SHOW Q115 IF Q113 = 4]

115. Why is the rope door and window caulk not installed in your home? (Please select all that apply). **[MULTI-SELECT]**

1. I am unable to install it myself
2. I did not understand the installation instructions
3. It cannot be installed on the windows and/or doors in my home
4. Did not like the look of it
5. I already have a similar product installed in my home
6. I had no appropriate use for it
96. Other (Please specify) **[OPEN-ENDED]**

98. Do not recall

116. Did you install the outlet gaskets that were included in the weatherization kit in your home?

1. Yes, all of them.
2. Yes, some of them.
3. No, none of them.
98. Do not recall

[SHOW Q117 IF Q116 = 2]

117. How many outlet gaskets that were included in the weatherization kit did you install in your home?

1. 1 gasket
2. 2 gaskets
3. 3 gaskets
4. 4 gaskets
5. 5 gaskets
6. 6 gaskets
7. 7 gaskets
98. Do not recall

[SHOW Q118 IF Q116 = 2,3]

118. Why are the outlet gaskets not installed in your home? (Please select all that apply). **[MULTI-SELECT]**

1. I am unable to install them myself
2. I did not understand the installation instructions
3. It cannot be installed behind the outlet covers in my home
4. Did not like the look of them
5. I already have a similar product installed in my home.
6. I had no appropriate use for them
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

119. Did you install the switch gaskets that were included in the weatherization kit in your home?

1. Yes, all of them.
2. Yes, some of them.
3. No, none of them.
98. Do not recall

[SHOW Q120 IF Q119 = 2]

120. How many switch gaskets that were included in the weatherization kit did you install in your home?

1. 1 gasket
2. 2 gaskets
3. 3 gaskets
98. Do not recall

[SHOW Q121 IF Q119 = 3]

121. Why are the switch gaskets not installed in your home? (Please select all that apply). **[MULTI-SELECT]**

1. I am unable to install them myself
2. I did not understand the installation instructions
3. It cannot be installed behind the outlet covers in my home
4. Did not like the look of them
5. I already have a similar product installed in my home.
6. I had no appropriate use for them
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

122. Did you install the adhesive weather strips in your home?

1. Yes, both of them.
2. Yes, one of them.
3. No, none are installed
98. Do not recall

[SHOW Q123 IF Q122 = 2,3]

123. Why are the adhesive weather strips not installed in your home? (Please select all that apply). **[MULTI-SELECT]**

1. I am unable to install them myself
2. I did not understand the installation instructions
3. Did not like the look of them
4. I already have a similar product installed in my home.
5. I had no appropriate use for them
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

124. Did you install the window film kit in your home?

1. Yes,
2. No,
98. Do not recall

125. How many windows were you able to cover with the window film kit?

[OPEN-ENDED]

[SHOW Q126 IF Q125= 3]

126. Why are the window kits not installed in your home? (Please select all that apply). **[MULTI-SELECT]**

1. I am unable to install them myself
2. I did not understand the installation instructions
3. Did not like the look of them
4. They do not fit on to my windows
5. I already have a similar product installed in my home.
6. I had no appropriate use for them

96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

[SHOW Q127, Q128, IF Q124= 1]

127. After installation, how long did you keep the window kits installed?

1. Less than one month
2. 1-3 months
3. 4-6 months
4. 7-9 months

96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

128. On a scale of 1 (very difficult) to 6 (very easy), how would you best describe your experience installing the window kits?

1. Very difficult
2. Quite difficult
3. Somewhat difficult
4. Somewhat easy
5. Quite easy
6. Very easy

98. Do not recall

129. Did you install the pipe insulation pieces from the weatherization kit in your home?

1. Yes, both of them.
2. Yes, one of them.
3. No, none are installed

98. Do not recall

[SHOW Q130 IF Q129= 2,3]

130. Why are the pipe insulation pieces not installed in your home? (Please select all that apply) **[MULTI-SELECT]**

1. I am unable to install them myself
2. I did not understand the installation instructions
3. I already have a similar product installed in my home.

4. I had no appropriate use for them
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

[SHOW Q131, Q132, Q133 IF Q129= 1 OR 2]

131. Which best describes the type of energy source used to fuel your water heater?

1. Electric
2. Gas
3. Oil
4. Space heat
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

132. Where did you install the pipe insulation pieces in your home?

1. Domestic Hot Water
2. Hot Water Heat
3. Steam Heat
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

133. What type of piping did you install the insulation pieces on to?

1. Bare copper
2. Bare steel
3. Fiberglass
4. Rigid foam/ Cellular glass
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

134. How effective were the items in the weatherization kit at keeping your house heated more efficiently, compared to before they were installed?

1. Not very effective. I noticed no difference.
2. Slightly effective. I noticed a little difference.
3. Somewhat effective. I noticed some differences.
4. Quite effective. I noticed a difference.
5. Extremely effective. I noticed a large difference.
98. Do not recall

B.1.17 WEATHERIZATION KIT (MULTIPLES)

[SHOW Q135-Q157 IF ${e://Field/Weather_Kit_QTY} > 1]

135. Are all four self-stick door sweeps that were included in the weatherization kit currently installed in your home?

1. Yes, both of them are installed

2. No, only some of them are installed **[OPEN ENDED; NUMERICAL VALUE]**
3. No, none of them are installed
98. Do not recall

[SHOW Q136 IF Q135 = 3]

136. Why are the self-stick door sweeps not installed in your home? (Please select all that apply). **[MULTI-SELECT]**

1. I am unable to install it myself
2. I did not understand the installation instructions
3. It does not fit on the doors in my home
4. Did not like the look of it
5. I already have a similar product installed on my doors
6. I had no appropriate use for it
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

137. Are all four of the corner doorjamb pads that were included in the weatherization kit installed in your home?

1. Yes, both of them are installed
2. No, only some of them are installed **[OPEN ENDED; NUMERICAL VALUE]**
3. No, none of them are installed
98. Do not recall

[SHOW Q138 IF Q137 = 3]

138. Why are the corner doorjamb pads not installed in your home? (Please select all that apply). **[MULTI-SELECT]**

1. I am unable to install it myself
2. I did not understand the installation instructions
3. It does not fit on the doors in my home
4. Did not like the look of it
5. I already have a similar product on my doors
6. I have no appropriate use for it
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

139. Is the rope door and window caulk that was included in the weatherization kit installed in your home?

1. Yes, on both windows and doors
2. Yes, on windows
3. Yes, on doors
4. No, I did not install on either my windows or doors
98. Do not recall

140. About how much of the door and window caulk was installed?

1. Both sets
2. Only one
3. Half of one
98. Do not recall

[SHOW Q141 IF Q139 = 4]

141. Why is the rope door and window caulk not installed in your home? (Please select all that apply). **[MULTI-SELECT]**

1. I am unable to install it myself
2. I did not understand the installation instructions
3. It cannot be installed on the windows and/or doors in my home
4. Did not like the look of it
5. I already have a similar product installed in my home
6. I had no appropriate use for it
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

142. Did you install the outlet gaskets that were included in the weatherization kit in your home?

1. Yes, all 16 of them.
2. Yes, some of them. **[OPEN ENDED; NUMERICAL VALUE]**
3. No, none of them.
98. Do not recall

[SHOW Q143 IF Q142 = 2,3]

143. Why are the outlet gaskets not installed in your home? (Please select all that apply). **[MULTI-SELECT]**

1. I am unable to install them myself
2. I did not understand the installation instructions
3. It cannot be installed behind the outlet covers in my home
4. Did not like the look of them
5. I already have a similar product installed in my home.
6. I had no appropriate use for them
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

144. Did you install the switch gaskets that were included in the weatherization kit in your home?

1. Yes, all of them.
2. Yes, some of them. **[OPEN ENDED; NUMERICAL VALUE]**
3. No, none of them.
98. Do not recall

[SHOW Q145 IF Q144 = 3]

145. Why are the switch gaskets not installed in your home? (Please select all that apply). **[MULTI-SELECT]**

1. I am unable to install them myself
2. I did not understand the installation instructions
3. It cannot be installed behind the outlet covers in my home
4. Did not like the look of them
5. I already have a similar product installed in my home.
6. I had no appropriate use for them

96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

146. Did you install all four of the adhesive weather strips in your home?

1. Yes, all of them.
2. Yes, some of them. **[OPEN ENDED; NUMERICAL VALUE]**
3. No, none are installed

98. Do not recall

[SHOW Q147 IF Q146 = 2,3]

147. Why are the adhesive weather strips not installed in your home? (Please select all that apply). **[MULTI-SELECT]**

1. I am unable to install them myself
2. I did not understand the installation instructions
3. Did not like the look of them
4. I already have a similar product installed in my home.
5. I had no appropriate use for them

96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

148. Did you install the window film kits in your home?

1. Yes, both of them
2. Yes, one of them
3. No, none of them

98. Do not recall

[SHOW Q149 IF Q148 = 1,2]

149. How many windows were you able to cover with the window film kits?

[OPEN-ENDED]

[SHOW Q150 IF Q148= 3]

150. Why are the window kits not installed in your home? (Please select all that apply). **[MULTI-SELECT]**

1. I am unable to install them myself
2. I did not understand the installation instructions
3. Did not like the look of them
4. They do not fit on to my windows
5. I already have a similar product installed in my home.
6. I had no appropriate use for them

96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

[SHOW Q151, Q152, IF Q148= 1,2]

151. After installation, how long did you keep the window kits installed?

1. Less than one month
2. 1-3 months
3. 4-6 months
4. 7-9 months

96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

152. On a scale of 1 (very difficult) to 6 (very easy), how would you best describe your experience installing the window kits?

1. Very difficult
2. Quite difficult
3. Somewhat difficult
4. Somewhat easy
5. Quite easy
6. Very easy

98. Do not recall

153. Did you install the pipe insulation pieces from the weatherization kit in your home?

1. Yes, all four of them.
2. Yes, some of them. **[OPEN ENDED; NUMERICAL VALUE]**
3. No, none are installed

98. Do not recall

[SHOW Q154 IF Q153 = 2,3]

154. Why are the pipe insulation pieces not installed in your home? (Please select all that apply) **[MULTI-SELECT]**

1. I am unable to install them myself
2. I did not understand the installation instructions
3. I already have a similar product installed in my home.
4. I had no appropriate use for them

96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

[SHOW Q155, Q156, Q157 IF Q153= 1 OR 2]

155. Which best describes the type of energy source used to fuel your water heater?

1. Electric
2. Gas
3. Oil
4. Space heat
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

156. Where did you install the pipe insulation pieces in your home?

1. Domestic Hot Water
2. Hot Water Heat
3. Steam Heat
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

157. What type of piping did you install the insulation pieces on to?

1. Bare copper
2. Bare steel
3. Fiberglass
4. Rigid foam/ Cellular glass
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

158. How effective were the items in the weatherization kits at keeping your house heated more efficiently, compared to before they were installed?

1. Not very effective. I noticed no difference.
2. Slightly effective. I noticed a little difference.
3. Somewhat effective. I noticed some differences.
4. Quite effective. I noticed a difference.
5. Extremely effective. I noticed a large difference.
98. Do not recall

B.1.18 WINDOW FILM KIT (SINGLE)

[SHOW Q159-Q163 IF ${e://Field/WFK_QTY} = 1]

159. Did you install the window film kit in your home?

1. Yes
2. No
98. Do not recall

160. How many windows were you able to cover with the window film kit?

[OPEN-ENDED]

[SHOW Q161 IF Q159= 2]

161. Why are the window kits not installed in your home? (Please select all that apply). **[MULTI-SELECT]**

1. I am unable to install them myself
2. I did not understand the installation instructions
3. Did not like the look of them
4. They do not fit on to my windows
5. I already have a similar product installed in my home.
6. I had no appropriate use for them

96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

[SHOW Q162, Q163, Q164163 IF Q159 = 1]

162. After installation, how long did you keep the window kits installed?

1. Less than one month
2. 1-3 months
3. 4-6 months
4. 7-9 months

96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

163. On a scale of 1 (very difficult) to 6 (very easy), how would you best describe your experience installing the window kit?

1. Very difficult
2. Quite difficult
3. Somewhat difficult
4. Somewhat easy
5. Quite easy
6. Very easy

98. Do not recall

164. How effective were the window film kits at keeping your house heated more efficiently, compared to before they were installed?

1. Not very effective. I noticed no difference.
2. Slightly effective. I noticed a little difference.
3. Somewhat effective. I noticed some differences.
4. Quite effective. I noticed a difference.
5. Extremely effective. I noticed a large difference.

98. Do not recall

B.1.19 WINDOW FILM KIT (MULTIPLES)

[SHOW Q165-Q169 IF ${e://Field/WFK_QTY} > 1]

165. Did you install the window film kits in your home?

1. Yes, all of them
2. Yes, some of them **[OPEN ENDED; NUMERICAL VALUES]**
3. No, none of them
99. Do not recall

[SHOW Q166 IF Q165 = 1,2]

166. How many windows were you able to cover with the window film kits?

[OPEN-ENDED]

[SHOW Q167 IF Q165 = 2]

167. Why are the window kits not installed in your home? (Please select all that apply). **[MULTI-SELECT]**

1. I am unable to install them myself
2. I did not understand the installation instructions
3. Did not like the look of them
4. They do not fit on to my windows
5. I already have a similar product installed in my home.
6. I had no appropriate use for them
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

[SHOW Q168, Q169, Q170 IF Q165 = 1,2]

168. After installation, how long did you keep the window kits installed?

1. Less than one month
2. 1-3 months
3. 4-6 months
4. 7-9 months
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

169. On a scale of 1 (very difficult) to 6 (very easy), how would you best describe your experience installing the window kits?

1. Very difficult
2. Quite difficult
3. Somewhat difficult
4. Somewhat easy
5. Quite easy
6. Very easy

98. Do not recall

170. How effective were the window film kits at keeping your house heated more efficiently, compared to before they were installed?

1. Not very effective. I noticed no difference.
2. Slightly effective. I noticed a little difference.
3. Somewhat effective. I noticed some differences.
4. Quite effective. I noticed a difference.
5. Extremely effective. I noticed a large difference.
98. Do not recall

B.1.20 ELECTRIC SAVINGS KIT (SINGLE)

[SHOW Q171 – Q185 IF ${e://Field/Electric_Kit_QTY} = 1]

171. Did you install the Simply Conserve LED Night Light(s) from the electric savings kit in your house?

1. Yes, both of them.
2. Yes, one of them.
3. No, none are installed
98. Do not recall

[SHOW Q172 IF Q171 = 3]

172. Why are the LED night lights not installed in your home? (Please select all that apply). **[MULTI-SELECT]**

1. The bulb is too bright
2. The bulb is not bright enough
3. I do not like the look of it
4. I have no use for it
5. I already have a similar product
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

173. Did you install the Simply Conserve 9 watt A19 LED(s) from the electric savings kit in your house?

1. Yes, all of them.
2. Yes, some of them
3. No, none are installed
98. Do not recall

[SHOW Q174 IF Q173 = 2]

174. How many of the Simply Conserve 9 watt A19 LED(s) lightbulbs that were included in the energy saving kit are currently installed in your home?

1. 1 bulb

2. 2 bulbs
3. 3 bulbs
98. Do not recall

[SHOW Q175 IF Q174 = 1,2,3]

175. Why are the 9 watt A19 LEDs not installed in your home? (Please select all that apply). **[MULTI-SELECT]**

1. Waiting for old lightbulbs to burn out
2. Not the correct wattage for my needs
3. New bulbs are too bright
4. New bulbs are not bright enough
5. Do not fit into any fixtures
6. Did not like the color
7. Lights are used seasonally
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

176. How many of the 9 watt A19 LEDS from the electric savings kit are currently installed in the following areas? **[VERIFICATION; TOTAL MUST BE 4]**

1. Indoor - Residential **[OPEN-ENDED; NUMERIC VALUE]**
2. Outdoors **[OPEN-ENDED; NUMERIC VALUE]**
3. Commercial Spaces **[OPEN-ENDED; NUMERIC VALUE]**
4. Not **installed [OPEN-ENDED; NUMERIC VALUE]**
98. Do not recall

177. Did you install the Maxlite slim desk lamp from the electric savings kit?

1. Yes
2. No
98. Do not recall

[SHOW Q178 IF Q177 = 2]

178. Why is the Maxlite slim desk lamp not installed in your home? (Please select all that apply). **[MULTI-SELECT]**

1. The light is too bright
2. The light is not bright enough
3. It did not fit on my desk
4. Don’t like the look of it
5. I already have a similar product
6. Lights are used seasonally
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

179. How often do you use the Maxlite slim desk lamp in your home?

1. Every day

2. At least one time a week
3. At least one time a month
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

[SHOW Q180 IF Q179 = 1]

180. How many hours per day do you use the Maxlite slim desk lamp?

1. Less than one hour
2. 1-4 hours
3. 5-8 hours
4. 8+ hours
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

181. Have you installed the Simply Conserve 7-Outlet Advanced Power Strip from the energy savings kit in your home?

1. Yes
2. No
98. Do not recall

[SHOW Q182 IF Q181 = 2]

182. Why is the Simply Conserve 7-Outlet Advanced Power Strip not currently being used in your home? (Please select all that apply) [**MULTISELECT**]

1. Already have other power strips setup
2. Did not know how to set it up
3. Did not like the look of it
4. Had no appropriate use for it
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

[SHOW Q183 IF Q181 = 1]

183. Using the advanced power strip example below, please specify what is currently plugged into the "always on" outlet(s) (in black) for each of the following types of new advanced power strip(s) that are setup in your home. **[MULTI-SELECT OPTION: 1 = TELEVISION, 2 = DVD/BLU-RAY PLAYER, 3 = GAMING CONSOLE, 4 = SOUND BAR, 5 = COMPUTER OR LAPTOP, 6 = INTERNET MODEM/WI-FI ROUTER, 7 = COMPUTER KEYBOARD OR MOUSE, 8 = ROOM/PORTABLE FAN, 9 = FLOOR/DESK LAMP, 10 = KITCHEN APPLIANCES (SUCH AS REFRIGERATOR, MICROWAVE, TOASTER, COFFEE MAKER, ETC.), 11 = NOTHING, 96 = OTHER (PLEASE SPECIFY), 98 = DO NOT RECALL, AND 99 = NOT APPLICABLE]**



[SHOW Q184 IF Q181 = 1]

184. Using the advanced power strip example below, please specific what is currently plugged into the "switched" outlets (in teal) for each of the following types of new advanced power strip(s) that are setup in your home. **[MULTI-SELECT OPTIONS: 1 = TELEVISION, 2 = DVD/BLU-RAY PLAYER, 3 = GAMING CONSOLE, 4 = SOUND BAR, 5 = COMPUTER OR LAPTOP, 6 = INTERNET MODEM/WI-FI ROUTER, 7 = COMPUTER KEYBOARD OR MOUSE, 8 = ROOM/PORTABLE FAN, 9 = FLOOR/DESK LAMP, 10 = KITCHEN APPLIANCES (SUCH AS REFRIGERATOR, MICROWAVE, TOASTER, COFFEE MAKE, ETC.), 11 = NOTHING, 96 = OTHER (PLEASE SPECIFY), AND 98 = DO NOT RECALL]**



[SHOW Q185 IF Q181 = 1]

185. Using the advanced power strip example below, please specify what is currently plugged into the "master" outlet (in black) for each of the following types of new advanced power strip(s) that are setup in your home. **[SINGLE-SELECT OPTIONS: 1 = TELEVISION, 2 = DVD/BLU-RAY PLAYER, 3 = GAMING CONSOLE, 4 = SOUND BAR, 5 = COMPUTER OR LAPTOP, 6 = INTERNET MODEM/WI-FI ROUTER, 7 = COMPUTER KEYBOARD OR MOUSE, 8 = ROOM/PORTABLE FAN, 9 = FLOOR/DESK LAMP, 10 = KITCHEN APPLIANCES (SUCH AS REFRIGERATOR, MICROWAVE, TOASTER, COFFEE MAKER, ETC.), 11 = NOTHING, 96 = OTHER (PLEASE SPECIFY), 98 = DO NOT RECALL, AND 99 = NOT APPLICABLE]**



B.1.21 ELECTRIC SAVINGS KIT (MULTIPLES)

[SHOW Q186 – Q199 IF ${e://Field/Electric_Kit_QTY} > 1]

186. Did you install all four of the Simply Conserve LED Night Light(s) from the electric savings kits in your house?

1. Yes, all of them,
2. Yes, some of them. **[OPEN-ENDED; NUMERICAL VALUE]**
3. No, none are installed
98. Do not recall

[SHOW Q187 IF Q186 = 2,3]

187. Why are the LED night lights not installed in your home? (Please select all that apply). **[MULTI-SELECT]**

1. The bulb is too bright
2. The bulb is not bright enough
3. I do not like the look of it
4. I have no use for it
5. I already have a similar product
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

188. Did you install all eight of the Simply Conserve 9 watt A19 LED(s) from the electric savings kits in your house?

1. Yes, all of them.
2. Yes, some of them **[OPEN-ENDED; NUMERICAL VALUE]**
3. No, none are installed
98. Do not recall

[SHOW Q189 IF Q188 = 2,3]

189. Why are the 9 watt A19 LEDs not installed in your home? (Please select all that apply). **[MULTI-SELECT]**

1. Waiting for old lightbulbs to burn out
2. Not the correct wattage for my needs
3. New bulbs are too bright
4. New bulbs are not bright enough

5. Do not fit into any fixtures
6. Did not like the color
7. Lights are used seasonally
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

190. How many of the 9 watt A19 LEDs from the electric savings kits are currently installed in the following areas? **[VERIFICATION; TOTAL MUST BE 8]**

1. Indoor - Residential **[OPEN-ENDED; NUMERIC VALUE]**
2. Outdoors **[OPEN-ENDED; NUMERIC VALUE]**
3. Commercial Spaces **[OPEN-ENDED; NUMERIC VALUE]**
4. Not installed **[OPEN-ENDED; NUMERIC VALUE]**
98. Do not recall

191. Did you install the Maxlite slim desk lamps from the electric savings kits?

1. Yes, both of them
2. Yes, one of them
3. No, none of them
98. Do not recall

[SHOW Q192 IF Q191 = 2,3]

192. Why are the Maxlite slim desk lamps not installed in your home? (Please select all that apply). **[MULTI-SELECT]**

1. The light is too bright
2. The light is not bright enough
3. It did not fit on my desk
4. Don't like the look of it
5. I already have a similar product
6. Lights are used seasonally
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

193. How often do you use the Maxlite slim desk lamps in your home?

1. Every day
2. At least one time a week
3. At least one time a month
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

[SHOW Q194 IF Q193 = 1]

194. How many hours per day do you use the Maxlite slim desk lamps?

1. Less than one hour
2. 1-4 hours
3. 5-8 hours

4. 8+ hours
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

195. Have you installed the Simply Conserve 7-Outlet Advanced Power Strips from the energy savings kits in your home?

1. Yes, both of them
2. Yes, one of them
3. No, none of them
98. Do not recall

[SHOW Q196 IF Q195 = 2,3]

196. Why are the Simply Conserve 7-Outlet Advanced Power Strip not currently being used in your home? (Please select all that apply) [**MULTISELECT**]

1. Already have other power strips setup
2. Did not know how to set it up
3. Did not like the look of it
4. Had no appropriate use for it
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

[SHOW Q197 IF Q195 = 1,2]

197. Using the advanced power strip example below, please specify what is currently plugged into the "always on" outlet(s) (in black) for the new advanced power strip(s) that are setup in your home. **[MULTI-SELECT OPTIONS: 1 = TELEVISION, 2 = DVD/BLU-RAY PLAYER, 3 = GAMING CONSOLE, 4 = SOUND BAR, 5 = COMPUTER OR LAPTOP, 6 = INTERNET MODEM/WI-FI ROUTER, 7 = COMPUTER KEYBOARD OR MOUSE, 8 = ROOM/PORTABLE FAN, 9 = FLOOR/DESK LAMP, 10 = KITCHEN APPLIANCES (SUCH AS REFRIGERATOR, MICROWAVE, TOASTER, COFFEE MAKE, ETC.), 96 = OTHER (PLEASE SPECIFY), 11 = NOTHING, 97 = NOT APPLICABLE, 98 = DO NOT RECALL, AND 99 = NOT APPLICABLE]**



1. **[SHOW IF Q195 = 1 OR 2]** Advanced power strip #1
2. **[SHOW IF Q195 = 1]** Advanced power strip #2

[SHOW Q198 IF Q195 = 1 OR 2]

198. Using the color-coded advanced power strip example below, please specify what is currently plugged into the "switched" outlets (in teal) for the new advanced power strip(s) that are setup in your home. **[SINGLE-SELECT OPTIONS: 1 = TELEVISION, 2 = DVD/BLU-RAY PLAYER, 3 = GAMING CONSOLE, 4 = SOUND BAR, 5 = COMPUTER OR LAPTOP, 6 = INTERNET MODEM/WI-FI ROUTER, 7 = COMPUTER KEYBOARD OR MOUSE, 8 = ROOM/PORTABLE FAN, 9 = FLOOR/DESK LAMP, 10 = KITCHEN APPLIANCES (SUCH AS REFRIGERATOR, MICROWAVE, TOASTER, COFFEE MAKE, ETC.), 11 = NOTHING, 96 = OTHER (PLEASE SPECIFY), 97 = NOT APPLICABLE, 98 = DO NOT RECALL, AND 99 = NOT APPLICABLE]**



1. **[SHOW IF Q195 = 1 OR 2]** Advanced power strip #1
2. **[SHOW IF Q195 = 1]** Advanced power strip #2

[SHOW Q199 IF Q195 = 1 OR 2]

199. Using the color-coded advanced power strip example below, please specify what is currently plugged into the "master" outlet (in black) for the new advanced power strip(s) that are setup in your home. **[SINGLE-SELECT OPTIONS: 1 = TELEVISION, 2 = DVD/BLU-RAY PLAYER, 3 = GAMING CONSOLE, 4 = SOUND BAR, 5 = COMPUTER OR LAPTOP, 6 = INTERNET MODEM/WI-FI ROUTER, 7 = COMPUTER KEYBOARD OR MOUSE, 8 = ROOM/PORTABLE FAN, 9 = FLOOR/DESK LAMP, 10 = KITCHEN APPLIANCES (SUCH AS REFRIGERATOR, MICROWAVE, TOASTER, COFFEE MAKE, ETC.), 11 = NOTHING, 96 = OTHER (PLEASE SPECIFY), 97 = NOT APPLICABLE, 98 = DO NOT RECALL, AND 99 = NOT APPLICABLE]**



1. **[SHOW IF Q195 = 1 OR 2]** Advanced power strip #1
2. **[SHOW IF Q195 = 1]** Advanced power strip #2

B.1.22 WATER CONSERVATION KIT (SINGLE)

[SHOW Q200-Q209 IF ${e://Field/Water_Kit_QTY} = 1]

200. Is the Niagara Dual Spray Kitchen Swivel Aerator that was included in the water conservation kit currently installed in your home?

1. Yes
2. No
99. Do not recall

[SHOW Q201 IF Q200 = 2]

201. Why is the Niagara Dual Spray Kitchen Swivel Aerator not currently installed in your home? [**MULTISELECT**]

1. Unable to install myself
2. Did not fit the faucets in my home
3. Not enough water pressure
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

[SHOW Q202 IF Q200 = 1]

202. Where is the Niagara Dual Spray Kitchen Swivel Aerator currently installed in your home?

1. Kitchen
2. Bathroom
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

203. Is the Niagara Bubble Spray Faucet Aerator that was included in the water conservation kit currently installed in your home?

1. Yes
2. No
98. Do not recall

[SHOW Q204 IF Q203 = 2]

204. Why is the Niagara Bubble Spray Faucet Aerator not currently installed in your home? [**MULTISELECT**]

1. Unable to install myself
2. Did not fit the faucets in my home
3. Not enough water pressure
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

[SHOW Q205 IF Q203 = 1]

205. Where is the Niagara Bubble Spray Faucet Aerator currently installed in your home?

1. Kitchen
2. Bathroom
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

206. How many of the low flow showerheads that was included in your water conservation kit are currently installed in your home?

1. All of them
2. One of them
3. None of them

[SHOW Q207 IF Q206 = 2,3]

207. Why is the low flow showerhead not currently installed in your home? [**MULTISELECT**]

1. Unable to install myself
2. Did not fit the showerhead fixtures in my home
3. Not enough water pressure
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

208. Which type of water heater is in your home?

1. Gas-fired storage water heater
2. Oil-fired storage water heater
3. Electric storage water heater
4. Instantaneous gas fired water heater
5. Instantaneous electric water heater
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

209. How many people use the showerhead regularly?

1. 1 person
2. 2 people
3. 3 people
4. 4 or more
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

B.1.23 WATER CONSERVATION KIT (MULTIPLES)

[SHOW Q210-Q219 IF ${e://Field/Water_Kit_QTY} > 1]

210. Are both the Niagara Dual Spray Kitchen Swivel Aerators that was included in the water conservation kits currently installed in your home?

1. Yes, both of them
2. Yes, one of them
3. No, none of them
98. Do not recall

[SHOW Q211 IF Q210 = 2,3]

211. Why are the Niagara Dual Spray Kitchen Swivel Aerators not currently installed in your home? [**MULTISELECT**]

1. Unable to install myself
2. Did not fit the faucets in my home
3. Not enough water pressure
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

[SHOW Q212 IF Q210 = 1]

212. Where are the Niagara Dual Spray Kitchen Swivel Aerators currently installed in your home?

1. Kitchen **[OPEN-ENDED; NUMERICAL VALUE]**
2. Bathroom **[OPEN-ENDED; NUMERICAL VALUE]**
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

213. Are the Niagara Bubble Spray Faucet Aerators that was included in the water conservation kit currently installed in your home?

1. Yes, both of them
2. Yes, one of them
3. No, none of them
98. Do not recall

[SHOW Q214 IF Q203 = 2,3]

214. Why are the Niagara Bubble Spray Faucet Aerators not currently installed in your home? [**MULTISELECT**]

1. Unable to install myself
2. Did not fit the faucets in my home
3. Not enough water pressure
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

[SHOW Q215 IF Q213 = 1,2]

215. Where are the Niagara Bubble Spray Faucet Aerators currently installed in your home?

1. Kitchen **[OPEN-ENDED; NUMERICAL VALUE]**
2. Bathroom **[OPEN-ENDED; NUMERICAL VALUE]**
96. Other (Please specify) **[OPEN-ENDED]**

98. Do not recall

216. How many of the low flow showerheads that were included in your water conservation kit are currently installed in your home?

1. All of them
2. One of them
3. Two of them
4. Three of them
5. None of them
98. Do not recall

[SHOW Q217 IF Q216 = 2,3,4,5]

217. Why are the low flow showerheads not currently installed in your home? [**MULTISELECT**]

1. Unable to install myself
2. Did not fit the showerhead fixtures in my home
3. Not enough water pressure
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

218. Which type of water heater is in your home?

1. Gas-fired storage water heater
2. Oil-fired storage water heater
3. Electric storage water heater
4. Instantaneous gas fired water heater
5. Instantaneous electric water heater
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

219. How many people use the showerhead regularly?

1. 1 person
2. 2 people
3. 3 people
4. 4 or more
96. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall

B.1.24 FREERIDERSHIP

The next few questions are about your decision to purchase [energy-efficiency measure] through [WEBSITE].

220. For each of the products you purchased from [WEBSITE] in [YEAR], were you planning to purchase them before learning about [WEBSITE]?

	Yes, I was planning on purchasing (1)	No, I was not planning on purchasing (2)	Do not recall (3)
${e://Field/LED_bulb_QTY} LED light bulb(s) (1)	O	O	O
${e://Field/Faucet_Aerator_QTY} Faucet Aerator(s) (2)	O	O	O
${e://Field/Showerhead_QTY} Showerhead(s) (3)	O	O	O
${e://Field/ST_QTY} Smart thermostat(s) (4)	O	O	O
${e://Field/APS_QTY} Advanced power strip(s) (5)	O	O	O
${e://Field/AP_QTY} Air purifier(s) (6)	O	O	O
${e://Field/Water_Kit_QTY} Water Conservation Kit(s) (7)	O	O	O
${e://Field/TSV_QTY} TSV(s) (8)	O	O	O
${e://Field/ESK_QTY} Energy Saving Kit(s) (8)	O	O	O
${e://Field/Weather_Kit_QTY} Weatherization Kit(s) (9)	O	O	O
${e://Field/WFK_QTY} Window Film Kit(s) (10)	O	O	O
${e://Field/Electric_Kit_QTY} Electric Savings Kit(s) (11)	O	O	O
${e://Field/ SHOWERHEAD_WITH_TSV_QTY} Showerhead(s) with TSV (11)	O	O	O

221. For each of the products you purchased from [WEBSITE] in [YEAR], would your budget have accommodated the full cost of each item if you had not purchased the items from [WEBSITE]?

	Yes, my budget would have accommodated the full cost (1)	No, my budget would not have accommodated the full cost (2)	Do not recall (3)
${e://Field/LED_bulb_QTY} LED light bulb(s) (1)	O	O	O
${e://Field/Faucet_Aerator_QTY} Faucet Aerator(s) (2)	O	O	O
${e://Field/Showerhead_QTY} Showerhead(s) (3)	O	O	O
${e://Field/ST_QTY} Smart thermostat(s) (4)	O	O	O
${e://Field/APS_QTY} Advanced power strip(s) (5)	O	O	O
${e://Field/AP_QTY} Air purifier(s) (6)	O	O	O
${e://Field/Water_Kit_QTY} Water Conservation Kit(s) (7)	O	O	O
${e://Field/TSV_QTY} TSV(s) (8)	O	O	O
${e://Field/ESK_QTY} Energy Saving Kit(s) (8)	O	O	O
${e://Field/Weather_Kit_QTY} Weatherization Kit(s) (9)	O	O	O
${e://Field/WFK_QTY} Window Film Kit(s) (10)	O	O	O
${e://Field/Electric_Kit_QTY} Electric Savings Kit(s) (11)	O	O	O
${e://Field/ SHOWERHEAD_WITH_TSV_QTY} Showerhead(s) with TSV (11)	O	O	O

222. For each of the products you purchased from [WEBSITE] in [YEAR], would you have installed the same item or one that was even more energy efficient within one year if purchasing from [WEBSITE] was not an option?

	Yes, I would have installed the same item (1)	No, I would not have installed the same item (2)	Do not recall (3)
${e://Field/LED_bulb_QTY} LED light bulb(s) (1)	O	O	O
${e://Field/Faucet_Aerator_QTY} Faucet Aerator(s) (2)	O	O	O
${e://Field/Showerhead_QTY} Showerhead(s) (3)	O	O	O
${e://Field/ST_QTY} Smart thermostat(s) (4)	O	O	O
${e://Field/APS_QTY} Advanced power strip(s) (5)	O	O	O
${e://Field/AP_QTY} Air purifier(s) (6)	O	O	O
${e://Field/Water_Kit_QTY} Water Conservation Kit(s) (7)	O	O	O
${e://Field/TSV_QTY} TSV(s) (8)	O	O	O
${e://Field/ESK_QTY} Energy Saving Kit(s) (8)	O	O	O
${e://Field/Weather_Kit_QTY} Weatherization Kit(s) (9)	O	O	O
${e://Field/WFK_QTY} Window Film Kit(s) (10)	O	O	O
${e://Field/Electric_Kit_QTY} Electric Savings Kit(s) (11)	O	O	O
${e://Field/ SHOWERHEAD_WITH_TSV_QTY} Showerhead(s) with TSV (11)	O	O	O

B.1.25 SPILLOVER

223. Since purchasing an energy efficient product from [WEBSITE], have you purchased any other energy-efficiency items for your home?

5. Purchased an ENERGY STAR refrigerator
6. Purchased an ENERGY STAR clothes washer
7. Purchased an ENERGY STAR clothes dryer
8. Purchased an ENERGY STAR freezer
9. Purchased an ENERGY STAR room air conditioner
10. Installed ENERGY STAR windows
11. Installed water heater jacket, blanket, or insulation
12. Installed water heater pipe insulation
13. Installed energy/water efficient faucet aerators
14. Installed energy/water efficient showerheads
15. Installed a smart Wi-fi thermostat
16. Added attic insulation
17. Installed an energy efficient water heater
18. Installed a whole house fan
19. Installed a variable speed pool pump
20. Installed LED lightbulbs
21. Something else **[OPEN ENDED]**
22. No
98. Do not recall

[SHOW Q224 IF QB.1.25 = 1]

224. Did you install any of those energy-efficient items without receiving a discount from [UTILITY]?

1. Yes
2. No
98. Do not recall

[SHOW Q225 IF Q224 = 1]

225. Why did you not get a rebate or discount through one of [UTILITY] energy efficiency rebate programs for these actions? (Please select all that apply) **[MULTISELECT]**

1. Was not aware there was a program or rebate
2. Did not have the time to complete rebate application
3. Found out about rebate too late
4. Did not think my equipment was eligible
5. Submitted a rebate application that was rejected
6. For some other reason (Please describe) **[OPEN-ENDED]**
98. Do not recall

B.1.26 SATISFACTION (SMART SOLUTIONS ENERGY EFFICIENT PRODUCT)

[SHOW Q226 – Q231 IF LED LIGHT BULBS = 1, FAUCET AERATORS = 1, SHOWERHEADS = 1, SMART THERMOSTATS = 1, ADVANCED POWER STRIPS = 1, AIR PURIFIERS = 1, WATER CONSERVATION KITS = 1, TSVS = 1, WEATHERIZATION KITS = 1, WINDOW FILM KITS = 1, ELECTRIC SAVINGS KITS = 1, SHOWERHEADS AND TSV = 1]

226. How satisfied are you with the products purchased through the Smart Solution online marketplace? **[GRID FROM Q3=1; SCALE NOT AT ALL SATISFIED TO EXTREMELY SATISFIED AND 95=NOT APPLICABLE]**

227. What is your overall satisfaction with the Smart Solution online marketplace? **[INSERT 1-5 SCALE WITH 1=EXTREMELY DISSATISFIED TO 5=EXTREMELY SATISFIED AND 95=NOT APPLICABLE]**

228. What feedback or suggestions do you have to improve the Smart Solutions online marketplace?

[OPEN-ENDED]

229. Given your experience with purchasing an energy efficient product through Smart Solutions online marketplace, how likely are you to recommend it to friends or colleagues? **[INSERT 1-5 SCALE WITH 1=EXTREMELY DISSATISFIED TO 5=EXTREMELY SATISFIED AND 95=NOT APPLICABLE]**

230. Why did you give that rating?

[OPEN-ENDED]

[DISPLAY IF Q227 < 3]

231. What would have made your purchase experience better?

[OPEN-ENDED]

B.1.27 DEMOGRAPHICS

The following questions are regarding your household and residence characteristics. Your responses will be used to assess how well customers who purchased qualifying equipment from [WEBSITE] or had home energy-efficiency upgrades installed through Sealed resemble [UTILITY]'s customer population. Please feel free to select "Prefer not to answer" if you do not wish to answer any one of these questions.

232. Do you rent or own your home?
    1. Rent
    2. Own
    99. Prefer not to answer

233. How many people, including you, live in your household?
    1. Number of people: **[OPEN-ENDED]**
    99. Prefer not to answer

234. Which of the following best describes your home?
    1. Single-family home
    2. Manufactured or mobile home
    3. Duplex
    4. Townhome
    5. Condominium
    6. Apartment
    96. Other (Please specify) **[OPEN-ENDED]**
    98. Not sure
    99. Prefer not to answer

235. What is the primary fuel type used to heat your home?
    1. Electricity
    2. Natural gas
    3. Propane
    4. Wood/Pellet
    96. Other (Please specify) **[OPEN-ENDED]**
    98. Not sure
    99. Prefer not to answer

236. What is the primary heating system used in your home?

    1. Furnace, gas fired
    2. Furnace, oil fired
    3. Warm air unit heaters, gas fired
    4. Warm air unit heaters, oil fired
    5. Boiler, Hot water, gas-fired
    6. Boiler, Hot water, oil-fired
    7. Boiler, Steam, Gas-fired
    8. Boiler, Steam, oil-fired
    9. Electric heat
    10. Wood burning and/or pellet stove/fireplace
    11. Propane
    96. Other (Please specify) **[OPEN-ENDED]**
    98. Not sure
    99. Prefer not to answer

237. What type(s) of cooling system(s) does your new smart thermostat(s) control? (please select all that apply)
    1. Central air conditioning
    2. Heat pump
    3. Window unit
    4. I don’t have cooling
    5. Swamp cooler-Evaporative cooling

6. Portable room AC
96. Other (Please specify) **[OPEN-ENDED]**
98. Not sure
99. Prefer not to answer

238. Approximately when was your home built?
    1. Before 1960
    2. 1960 to 1969
    3. 1970 to 1979
    4. 1980 to 1989
    5. 1990 to 1999
    6. 2000 to 2019
    7. 2020 or newer
    98. Not sure
    99. Prefer not to answer

239. About how many square feet is your home? If you are unsure, an estimate is okay.
    1. Square footage: **[OPEN-ENDED; NUMERIC VALUE]**
    98. Not sure
    99. Prefer not to answer

240. What was your total household income before taxes in 2021?
    1. Less than $10,000
    2. $10,000 to less than $20,000
    3. $20,000 to less than $30,000
    4. $30,000 to less than $40,000
    5. $40,000 to less than $50,000
    6. $50,000 to less than $75,000
    7. $75,000 to less than $100,000
    8. $100,000 to less than $150,000
    9. $150,000 to less than $200,000
    10. $200,000 or more
    98. Not sure
    99. Prefer not to answer

241. What is your highest level of education?
    1. Up to 8th grade
    2. Some high school
    3. High school graduate or GED equivalent
    4. Some college
    5. Associate degree
    6. Bachelor’s degree
    7. Master’s degree
    8. Professional degree (MD, JD, DDS, DDO)
    9. Doctorate degree (Ph.D., D.Sc.)
    98. Not sure
    99. Prefer not to answer

B.1.28 DISQUALIFICATION MESSAGE

Sorry, but you do not qualify to take this survey. This survey is for [UTILITY] customers who purchased qualifying energy-efficient equipment/upgrades from [WEBSITE] or installed through Sealed. Thank you for your time and have a great day!

B.1.29 CONCLUSION

We have finished all the questions for this survey. Thank you for your time in answering questions about your purchase of qualifying energy-efficient equipment/upgrades from [WEBSITE] or installed through Sealed. [UTILITY] appreciates your participation, thank you again and have a great day!

B.2 Attribution Survey

Client: Avangrid (NYSEG and RG&E)
Program: Smart Solutions
Group: Participants
Mode: Online (Email)

B.2.1 PREDEFINED VARIABLES

Prepopulated variables are shown in all caps enclosed in brackets, e.g., [PREDEFINED VARIABLE]

Variable	Definition
YEAR	Year
PHONE	Phone number
DATE	Date received services
EMAIL	Email address
CONTACT_NAME	Name of respondent on file
PROG_NAME	Name of Program
MEASURES_ALL	Measure Name
MEASURE_QTY	Measure Quantity
UTILITY	NYSEG or RG&E

B.2.2 EMAIL SURVEY MESSAGE

Dear [CONTRACT_NAME],

Thank you for purchasing energy-efficient equipment on [UTILITY]’s the Smart Solutions Online Marketplace.

To evaluate the marketplace and to better understand your experience regarding your purchase, [UTILITY] has contracted with us, ADM Associates, to conduct a brief online survey. Once you

have completed the survey, you will have an opportunity to be entered into a drawing for a $50 gift card.

Click here to start the survey: [SURVEY LINK]

If you have questions or require technical assistance, please reach out to us at survey2121@admenergy.com. If you wish to no longer receive emails about this survey, please click on the "Unsubscribe" link below.

Thank you in advance for your time!

Kind Regards,

ADM Associates / Contractor to [UTILITY]

ADM conducts surveys to support research and evaluation in the energy sector. Survey data is not shared with third parties for marketing purposes.

B.2.3 SCREENING

242. Our records indicate you purchased the following energy efficiency products from [UTILITY]s Smart Solutions online marketplace. Please confirm that we have the correct quantity and product type(s) listed below:

[IF ALL ANSWERED 3 TERMINATE]

Measures	Yes, this is correct (1)	I purchased this item, but the quantity is wrong (2)	No, I did not purchase this item (3)	Do not recall (4)
Faucet Aerator	⌒	⌒	⌒	⌒
Air Purifier	⌒	⌒	⌒	⌒
Advanced Power Strip	⌒	⌒	⌒	⌒
Electric Savings Kit	⌒	⌒	⌒	⌒
Energy Saving Kit	⌒	⌒	⌒	⌒
Showerhead	⌒	⌒	⌒	⌒
Showerhead & TSV	⌒	⌒	⌒	⌒
Thermostat	⌒	⌒	⌒	⌒
Thermostatic Shower Valve (TSV)	⌒	⌒	⌒	⌒
Water Conservation Kit	⌒	⌒	⌒	⌒
Weatherization Kit	⌒	⌒	⌒	⌒
Foam Sealant	⌒	⌒	⌒	⌒
Smart Plugs	⌒	⌒	⌒	⌒
Window Film Kit	⌒	⌒	⌒	⌒

[SHOW Q4 IF Q3 = I purchased this item, but the quantity is wrong.]

243. What is the correct quantity that you purchased?

Faucet Aerator **[OPEN-ENDED]**
12. Air Purifier **[OPEN-ENDED]**
13. Advanced Power Strip **[OPEN-ENDED]**
14. Electric Savings Kit **[OPEN-ENDED]**
15. Energy Savings Kit **[OPEN-ENDED]**
16. Showerhead **[OPEN-ENDED]**
17. Showerhead and TSV **[OPEN-ENDED]**
18. Thermostat **[OPEN-ENDED]**
19. Thermostatic Shower Valve (TSV) **[OPEN-ENDED]**
20. Water Conservation Kit **[OPEN-ENDED]**
21. Weatherization Kit **[OPEN-ENDED]**
22. Foam Sealant **[OPEN-ENDED]**
23. Smart Plugs **[OPEN-ENDED]**
24. Window Film Kit **[OPEN-ENDED]**

[SHOW Q5 IF Q3 = No, I did not purchase this item.]

244. Are you sure you did not purchase any of the previously listed energy efficiency equipment? **[OPEN-ENDED]**

B.2.4 WEATHERIZATION MEASURE: ISR AND SATISFACTION

B.1.2.4. Door Sweeps

[DISPLAY Q245 IF WEATHER_KIT = 1]

245. Are both door sweeps that were included in the weatherization kit currently installed on exterior doors (doors leading to unconditioned space) in your home?
   1. Yes, both are installed on doors leading to unconditioned space.
   2. No, only one of them is installed on a door leading to unconditioned space.
   3. They are installed on interior doors.
   4. Some are installed on interior doors.
   5. No, none of them are installed.
   98. I Do not recall.

[DISPLAY Q110 IF Q245 = 2 , 4 OR 5]

246. Why are the door sweeps not installed in your home? (Please select all that apply). **[MULTI-SELECT]**

   I am unable to install it myself.
   25. I did not understand the installation instructions.
   26. It does not fit on the doors in my home.
   27. Did not like the look.
   28. I already have a similar product installed on my doors.
   29. I had no appropriate use for it.
   Other (Please specify) **[OPEN-ENDED]**
   I Do not recall.

[DISPLAY Q247 IF Q245=2]

247. When are you planning to install the remaining door sweeps?

   Within 6 months
   30. Within a year
   31. 1-2 years
   32. 3+ years
   33. Never

[DISPLAY Q248 IF Q245=3]

248. When are you planning to install any of the door sweeps?

   Within 6 months
   34. Within a year

35. 1-2 years
36. 3+ years
37. Never

[DISPLAY Q249-250 IF Q245 = 1 OR 2]

249. How satisfied are you with the door sweeps that were included in the weatherization kit? **[INSERT 1-5 SCALE WITH 1=EXTREMELY DISSATISFIED TO 5=EXTREMELY SATISFIED AND 95=NOT APPLICABLE]**

250. How would you best describe the installation process of the self-stick door sweeps? [**INSERT 1-5 SCALE WITH 1=EXTREMELY DIFFICULT TO 5=EXTREMELY EASY AND 95=NOT APPLICABLE]**

[DISPLAY Q251 IF Q250 = 1, 2, OR 3]

251. What were some of the challenges that you encountered when installing the self-stick door sweeps? **[OPEN ENDED]**

B.2.2.4. Door Jamb Pads

252. Are both corner door jamb pads that were included in the weatherization kit installed in your home?

Yes, both are installed.
No, only one of them is installed.
No, none of them are installed.
99. I Do not recall.

[DISPLAY Q112-0 IF Q111 = 3]

253. Why are the corner doorjamb pads not installed in your home? (Please select all that apply). **[MULTI-SELECT]**

I am unable to install it myself.
38. I did not understand the installation instructions.
39. It does not fit on the doors in my home.
40. Did not like the look.
41. I already have a similar product on my doors.
42. I have no appropriate use for it.
97. Other (Please specify) **[OPEN-ENDED]**
99. I Do not recall.

[DISPLAY Q254 IF Q111 = 2]

254. When are you planning to install the remaining door jamb pad?

Within 6 months
43. Within a year
44. 1-2 years
45. 3+ years
46. Never

[DISPLAY Q255 IF Q111 = 3]

255. When are you planning to install any of the door jamb pads?

Within 6 months
47. Within a year
48. 1-2 years
49. 3+ years
50. Never

256. How satisfied are you with the corner doorjambs that were included in the weatherization kit? **[INSERT 1-5 SCALE WITH 1=EXTREMELY DISSATISFIED TO 5=EXTREMELY SATISFIED AND 95=NOT APPLICABLE]**

257. How would you best describe the installation process of the door jambs? [**INSERT 1-5 SCALE WITH 1=EXTREMELY DIFFICULT TO 5=EXTREMELY EASY AND 95=NOT APPLICABLE]**

[DISPLAY Q258 IF Q257 = 1, 2, OR 3]

258. What were some of the challenges that you encountered when installing the corner door jambs? **[OPEN ENDED]**

B.3.2.4. Rope Door and Window Caulk

259. Is the rope door and window caulk that were included in the weatherization kit installed in your home?

Yes, on both windows and doors.
51. Yes, on windows.
52. Yes, on doors.
53. No, I did not install the film on either my windows or doors.
99. I Do not recall.

[DISPLAY Q115 IF Q259 = 4]

260. Why is the rope door and window caulk not installed in your home? (Please select all that apply). **[MULTI-SELECT]**

I am unable to install it myself.
54. I did not understand the installation instructions.
55. It cannot be installed on the windows and/or doors in my home.

56. Did not like the look.
57. I already have a similar product installed in my home.
58. I had no appropriate use for it.
97. Other (Please specify) **[OPEN-ENDED]**
98. Do not recall.

261. When are you planning to install the rope door and window caulk?

Within 6 months
59. Within a year
60. 1-2 years
61. 3+ years
62. Never

[DISPLAY Q262 IF Q259 = 1, 2, OR 3]

262. About how much of the door and window caulk was installed?

All of it
Half of it
99. I Do not recall.

[DISPLAY Q26 IF Q25 = 2]

263. When do you plan on installing the remainder of the rope door and window caulk?

Within 6 months
63. Within a year
64. 1-2 years
65. 3+ years
66. Never

[DISPLAY Q266 IF Q259 = 1, 2, OR 3]

264. How satisfied are you with the rope door and window caulk included in the weatherization kit? **[INSERT 1-5 SCALE WITH 1=EXTREMELY DISSATISFIED TO 5=EXTREMELY SATISFIED AND 95=NOT APPLICABLE]**

265. How would you best describe the installation process of the rope door and window caulk? **[INSERT 1-5 SCALE WITH 1=EXTREMELY DIFFICULT TO 5=EXTREMELY EASY AND 95=NOT APPLICABLE]**

[DISPLAY Q266 IF Q265 = 1, 2, OR 3]

266. What were some of the challenges that you encountered when installing the rope door and window caulk? **[OPEN ENDED]**

B.4.2.4. Switch and Outlet Gaskets

267. Did you install the switch and outlet gaskets that were included in the weatherization kit in your home?

Yes, all of them.
67. Yes, some of them.
68. No, none of them.
99. Do not recall.

[DISPLAY Q268 IF Q142 = 2]

268. How many switch and outlet gaskets included in the weatherization kit did you install in your home?

1 gasket
2 gaskets
3 gaskets
4 gaskets
5 gaskets
6 gaskets
7+ gaskets
Do not recall.

269. About how many of the gaskets that you installed are located on exterior walls?

1 gasket
69. 2 gaskets
70. 3 gaskets
71. 4 gaskets
72. 5 gaskets
73. 6 gaskets
74. 7+ gaskets
98. I Do not recall.

[DISPLAY Q118 IF Q142 = 3]

270. Why are the switch and outlet gaskets not installed in your home? (Please select all that apply). **[MULTI-SELECT]**

I am unable to install them myself.
75. I did not understand the installation instructions.
76. It cannot be installed behind the outlet covers in my home.
77. Did not like the look of them.
78. I already have a similar product installed in my home.
79. I had no appropriate use for them.
97. Other (Please specify) **[OPEN-ENDED]**
99. Do not recall.

271. When do you plan on installing the switch and outlet gaskets?

Within 6 months
80. Within a year
81. 1-2 years
82. 3+ years
83. Never

[DISPLAY Q272 IF Q268 < 8]

272. When do you plan on installing the remaining switch and outlet gasket(s)?

Within 6 months
84. Within a year
85. 1-2 years
86. 3+ years
87. Never

[DISPLAY Q273 IF Q142 = 1 OR 2]

273. How satisfied are you with the switch and outlet gaskets that were included in the weatherization kit? **[INSERT 1-5 SCALE WITH 1=EXTREMELY DISSATISFIED TO 5=EXTREMELY SATISFIED AND 95=NOT APPLICABLE]**

274. How would you best describe the installation process of the switch and outlet gasket(s)? **[INSERT 1-5 SCALE WITH 1=EXTREMELY DIFFICULT TO 5=EXTREMELY EASY AND 95=NOT APPLICABLE]**

[DISPLAY Q275 IF Q274= 1, 2, OR 3]

275. What were some of the challenges that you encountered when installing the switch and outlet gasket(s)? **[OPEN ENDED]**

B.5.2.4. Weather Strips

276. Did you install all four of the adhesive weather strips in your home?

Yes, both.
88. Yes, one of them.
89. No, none are installed.
99. I Do not recall.

[DISPLAY Q277 IF Q146 = 2]

277. How many of the adhesive weather strips do you have installed in your home?

1
90. 2
91. 3
I don’t know.

[DISPLAY Q123-279 IF Q146 = 3]

278. Why are the adhesive weather strips not installed in your home? (Please select all that apply). **[MULTI-SELECT]**

I am unable to install them myself.
I did not understand the installation instructions.
Did not like the look of them.
I already have a similar product installed in my home.
I had no appropriate use for them.
97. Other (Please specify) **[OPEN-ENDED]**
99. I Do not recall.

279. When do you plan on installing the adhesive weather strips?

Within 6 months
92. Within a year
93. 1-2 years
94. 3+ years
95. Never

[DISPLAY Q39 IF Q146 = 2]

280. When do you plan on installing the remaining adhesive weather strips?

Within 6 months
96. Within a year
97. 1-2 years
98. 3+ years
99. Never

[DISPLAY Q281 IF Q146 = 1 OR 2]

281. How satisfied are you with the adhesive weather strips that were included in the weatherization kit? **[INSERT 1-5 SCALE WITH 1=EXTREMELY DISSATISFIED TO 5=EXTREMELY SATISFIED AND 95=NOT APPLICABLE]**

282. How would you best describe the installation process of the adhesive weather strips? **[INSERT 1-5 SCALE WITH 1=EXTREMELY DIFFICULT TO 5=EXTREMELY EASY AND 95=NOT APPLICABLE]**

[DISPLAY Q283 IF Q282= 1, 2, OR 3]

283. What were some of the challenges that you encountered when installing the adhesive weather strips(s)? **[OPEN ENDED]**

B.6.2.4. Window Film Kits

284. Did you install the window film in your home?

Yes, installed on five windows.
Yes, on some windows.

No
99. Do not recall.

[DISPLAY Q285 IF Q284 = 2]

285. How many windows did you cover with the window film?
1
100. 2
101. 3
102. 4
I don't know.

[DISPLAY Q126-287 IF Q284 = 3]

286. Why are the window films not installed in your home? (Please select all that apply). **[MULTI-SELECT]**
I am unable to install them myself.
I did not understand the installation instructions.
Did not like the look of them.
They do not fit on to my windows.
I already have a similar product installed in my home.
I had no appropriate use for them.
97. Other (Please specify) **[OPEN-ENDED]**
99. Do not recall.

287. When do you plan to install the window film?
This winter
103. Next winter
104. Never

[DISPLAY Q288 IF Q284 = 2]

288. When do you plan on installing the window film on the remaining windows?
This winter
105. Next winter
106. Never

[DISPLAY Q289-290 IF Q284= 1 OR 2]

289. How satisfied are you with the window film that was included in the weatherization kit? **[INSERT 1-5 SCALE WITH 1=EXTREMELY DISSATISFIED TO 5=EXTREMELY SATISFIED AND 95=NOT APPLICABLE]**

290. How would you best describe the installation process of the window film? **[INSERT 1-5 SCALE WITH 1=EXTREMELY DIFFICULT TO 5=EXTREMELY EASY AND 95=NOT APPLICABLE]**

[DISPLAY Q291 IF Q290 = 1, 2, OR 3]

291. What were some of the challenges that you encountered when installing the window film? **[OPEN ENDED**

B.7.2.4. Pipe Insulation

292. Did you install the pipe insulation pieces from the weatherization kit in your home?

Yes, both.
Yes, one of them.
No, none are installed.
99. I Do not recall.

[SHOW Q52-133 IF Q129= 1 OR 2]

293. Which best describes the type of energy source used to fuel your water heater?

Electric
Gas
Oil
97. Other (Please specify) **[OPEN-ENDED]**
99. I Do not recall.

294. What type of piping did you install the insulation pieces on to?

Bare copper
Bare steel
Fiberglass
Rigid foam/ Cellular glass
97. Other (Please specify) **[OPEN-ENDED]**
99. I Do not recall.

[DISPLAY Q130 IF Q129= 3]

295. Why are the pipe insulation pieces not installed in your home? (Please select all that apply) **[MULTI-SELECT]**

I am unable to install them myself.
I did not understand the installation instructions.
I already have a similar product installed in my home.
I had no appropriate use for them.
97. Other (Please specify) **[OPEN-ENDED]**
99. I Do not recall.

296. When do you plan on installing the pipe insulation pieces?

Within 6 months
107. Within a year
108. 1-2 years
109. 3+ years
110. Never

[DISPLAY Q69 IF Q63 = 2]

297. When do you plan on installing the remaining pipe insulation piece?

Within 6 months
111. Within a year
112. 1-2 years
113. 3+ years
114. Never

[DISPLAY Q298 Q299 IF Q129 = 1 OR 2]

298. How satisfied are you with the pipe insulation that was included in the weatherization kit? **[INSERT 1-5 SCALE WITH 1=EXTREMELY DISSATISFIED TO 5=EXTREMELY SATISFIED AND 95=NOT APPLICABLE]**

299. How would you best describe the installation process of the pipe insulation? **[INSERT 1-5 SCALE WITH 1=EXTREMELY DIFFICULT TO 5=EXTREMELY EASY AND 95=NOT APPLICABLE]**

[DISPLAY Q300 IF Q299= 1, 2, OR 3]

300. What were some of the challenges that you encountered when installing the pipe insulation? **[OPEN ENDED]**

B.8.2.4. Window Film Kits—Stand alone.

[DISPLAY Q301 IF WFK = 1]

301. According to our records, you purchased [WFK_QTY] Window Film kits from the Smart Solutions Marketplace. Did you install the window film that you purchased in your home?

Yes, on all five windows.
Yes, on some windows.
No
98. I Do not recall.

[DISPLAY Q302 IF Q301 = 2]

302. How many windows did you cover with the window film?

1
115. 2
116. 3
117. 4
I don't know.

[DISPLAY Q303-304 IF Q301 = 3]

303. Why are the window films not installed in your home? (Please select all that apply). **[MULTI-SELECT]**

I am unable to install them myself.
I did not understand the installation instructions.
Did not like the look of them.
They do not fit on to my windows.
I already have a similar product installed in my home.
I had no appropriate use for them.
96. Other (Please specify) **[OPEN-ENDED]**
98. I Do not recall.

304. When do you plan to install the window film?

This winter
118. Next winter
119. Never

[DISPLAY Q305 IF Q301 = 2]

305. When do you plan on installing the window film on the remaining windows?

This winter
120. Next winter
121. Never

[DISPLAY Q306-307 IF Q301= 1 OR 2]

306. How satisfied are you with the window film? **[INSERT 1-5 SCALE WITH 1=EXTREMELY DISSATISFIED TO 5=EXTREMELY SATISFIED AND 95=NOT APPLICABLE]**

307. How would you best describe the installation process of the window film? **[INSERT 1-5 SCALE WITH 1=EXTREMELY DIFFICULT TO 5=EXTREMELY EASY AND 95=NOT APPLICABLE]**

[DISPLAY Q308 IF Q307 = 1, 2, OR 3]

308. What were some of the challenges that you encountered when installing the window film? **[OPEN ENDED**

B.9.2.4. Foam Sealant

[DISPLAY Q309 IF FOAM = 1]

309. According to our records, you purchased [FOAM_QTY] cans of foam sealant from the Smart Solutions Website. How many of those cans did you use?

1. All
2. 1
3. 2

4. 3
5. 4+
6. None
7. I don't know.

[DISPLAY Q309 IF FOAM = 1]

310. Approximately how much of each can of spray foam do you use?
    8. All
    9. Over half
    10. Half
    11. Less than half.
    12. I don't know.

[DISPLAY Q311 IF Q309 = 6]

311. Why have you not used the foam sealant? (Please select all that apply). **[MULTI-SELECT]**

    I had no appropriate use for it.
    96. Other (Please specify) **[OPEN-ENDED]**
    98. Do not recall.

[DISPLAY IF Q312 = 6 VALUE < [FOAM_QTY] VALUE]

312. When do you plan to use the foam sealant?

    Within 6 months
    122. Within a year
    123. 1-2 years
    124. 3+ years
    125. Never

[DISPLAY IF Q313 = 2-5 VALUE < [FOAM_QTY] VALUE]

313. When do you plan on using the remaining foam sealant?

    Within 6 months
    126. Within a year
    127. 1-2 years
    128. 3+ years

314. Where did you use the foam sealant or plan to use the foam sealant?

    Sealing air gaps for conditioned space in your house.
    129. Sealing air gaps for unconditioned space in your house.
    130. Other use **[OPEN ENDED]**
    131. I don't know.

315. What were some of the challenges that you encountered when installing the spray foam sealant? **[OPEN ENDED]**

[Cost Sensitivity, Freeridership, and Spillover Survey Sections Omitted from Report]

B.2.5 GIFT CARD INFORMATION

We appreciate your time. Please provide us with your email address to be entered to win a $50 digital gift certificate.

1. If selected, please send my digital gift card to the following email address: _____
2. I do not want to be entered to win a gift card.

If you have questions regarding this survey, you can send an email to survey2121@admenergy.com.

On behalf of [UTILITY], thank you for participating.

B.2.6 TERMINATE SURVEY TEXT

Disqualify Page: Thank you for your time. This survey is for [UTILITY] customers who received a rebate from the Smart Solutions Online Marketplace.