

2022 Indiana Residential Portfolio EM&V Report Volume I of II

Prepared for:
Indiana Michigan Power

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1. Introduction

Under contract with Indiana Michigan Power (I&M), ADM Associates, Inc., (ADM) performed evaluation, measurement and verification (EM&V) activities that confirmed the energy savings (kWh) and demand reduction (kW) realized through the energy efficiency programs that I&M implemented in Indiana from January 2022 through December 2022 (PY2022).

This chapter provides a summary of evaluation findings for the residential program portfolio and presents information regarding the organization of the report.

1.1. Summary of Data Collection

Table 1-1 summarizes data collection activities that supported the PY2022 evaluation of I&M’s residential programs.

Table 1-1 Summary of Survey Data Collection

<i>Survey</i>	<i>Mode</i>	<i>Time Frame</i>	<i>Number of Contacts</i>	<i>Number of Completions</i>
Home Energy Products – Online Marketplace Purchaser Survey	Email	January 2023	1,096	146
Home Energy Products – Products Component Participant Survey	Email	December 2022	383	36
Income Qualified Weatherproofing Participant Survey	Email	January 2023	46	9
Income Qualified Weatherproofing Participant Survey	Phone	January 2023	21	8
Income Qualified Weatherproofing Participant Survey - Virtual Kits	Email	December 2022 - January 2023	335	44
Donated Measures	Online	November 2022 - January 2023	NA	58

1.2. Impact Evaluation Findings

The savings variables presented in this evaluation report are defined in Table 1-2.

Table 1-2 Savings-Related Terminology

<i>Variable</i>	<i>Definition</i>
kWh Savings Goal	<i>kWh Savings Goal</i> is the energy savings goal cited in the applicable portfolio plan.
Ex Ante Gross kWh Savings	<i>Ex Ante Gross kWh Savings</i> are the annual energy savings reported by I&M and are typically obtained from I&M’s DSM/EE Program Scorecard documents.
Gross Audited kWh Savings	<i>Gross Audited kWh Savings</i> are determined by reviewing tracking data and looking for any errors and adjusting <i>Ex Ante Gross kWh Savings</i> accordingly.

<i>Variable</i>	<i>Definition</i>
Gross Verified kWh Savings	<i>Gross Verified kWh Savings</i> are determined by applying an installation rate to the <i>Gross Audited kWh Savings</i> . The installation rate is defined as the ratio of units that were installed (verified) to the number of units reported (claimed).
Ex Post Gross kWh Savings	<i>Ex Post Gross kWh Savings</i> are the realized annual gross kWh savings reflecting all adjustments made by ADM, without accounting for free ridership or spillover.
Ex Post Net kWh Savings	<i>Ex Post Net kWh Savings</i> are equal to <i>Ex Post Gross kWh Savings</i> , adjusted to account for free ridership and spillover. ¹
Ex Post Net Lifetime kWh Savings	<i>Ex Post Net Lifetime kWh Savings</i> is the <i>Ex Post Net kWh Savings</i> occurring over the course of the applicable measure effective useful life (EUL).
Gross Realization Rate	<i>Gross Realization Rate</i> is equal to <i>Ex Post Gross kWh Savings</i> divided by <i>Ex Ante Gross kWh Savings</i> .
Net-to-Gross Ratio	<i>Net-to-Gross Ratio</i> is equal to <i>Ex Post Net kWh Savings</i> divided by <i>Ex Post Gross kWh Savings</i> .
Free Rider ²	A <i>free rider</i> is a program participant who would have implemented the program measure or practice in the absence of the program. Free riders can be: 1) total, in which the participant's activity would have completely replicated the program measure; 2) partial, in which the participant's activity would have partially replicated the program measure; or 3) deferred, in which the participant's activity would have completely replicated the program measure, but at a future time than the program's timeframe. The free ridership estimate are the savings attributable to free riders.
Spillover (Participant and Non-Participant) ³	<i>Spillover effects</i> are reductions in energy consumption and/or demand caused by the presence of an energy efficiency program, beyond the program-related gross savings of the participants and without financial or technical assistance from the program. There can be participant and/or non-participant spillover. <i>Participant spillover</i> is the additional energy savings that occur when a program participant independently installs energy efficiency measures or applies energy saving practices after having participated in the efficiency program because of the program's influence. <i>Non-participant</i> spillover refers to energy savings that occur when a program non-participant installs energy efficiency measures or applies energy saving practices as a result because of a program's influence.

¹ ADM conducted a non-participant spillover study in 2021 to estimate non-participant spillover and concluded that there was not any qualifying non-participant spillover. Spillover savings presented in this report reflect participant spillover.

² Northeast Energy Efficiency Partnerships (NEEP) EMV Glossary version 2.1. <https://neep.org/media/4330>

³ Ibid.

Based on the definitions presented in Table 1-2, Table 1-3 presents a summary of the components of the impact evaluation that are accounted for in savings variables presented in this report.

Table 1-3 Components of Impact Evaluation Accounted for in Savings Variables

Category	Tracking Data Review	In-Service Rates	Ex Post Gross Analysis	Net-to-Gross Analysis
Gross Audited	✓			
Gross Verified	✓	✓		
Ex Post Gross	✓	✓	✓	
Ex Post Net	✓	✓	✓	✓

ADM performed EM&V activities for three residential programs and one residential pilot program offered by I&M during PY2022. Total residential portfolio ex post gross energy savings are 1,894,050 kWh, while ex post net energy savings are 1,659,810 kWh, as shown in Table 1-4.

Table 1-4 Summary of Energy Savings – PY2022

Program Name	Ex Ante Annual kWh Savings	Gross Audited kWh Savings	Gross Verified kWh Savings	Ex Post Annual Gross kWh Savings	Gross Realization Rate	Ex Post Annual Net kWh Savings	Net-to-Gross Ratio	Lifetime Net Ex Post kWh Savings
Residential Income Qualified Weatherproofing	1,313,378	1,313,378	873,507	1,172,724	89%	1,172,724	100%	13,092,458
Home Energy Products	930,983	930,983	773,999	598,936	64%	381,291	64%	3,756,661
Home Energy Management	-	-	-	76,295	N/A	76,295	100%	1,144,422
Mid-Stream Appliances Pilot	25,768	25,768	25,768	46,095	179%	29,501	64%	267,715
Residential Portfolio Totals	2,270,130	2,270,130	1,673,274	1,894,050	83%	1,659,810	88%	18,261,256

Total residential portfolio ex post gross peak demand savings are 3,958.20 kW, while ex post net peak demand savings are 3,923.07 kW, as shown in Table 1-5.

Table 1-5 Summary of Peak Demand Impacts – PY2022

Program	Ex Ante Gross kW Savings	Gross Audited kW Savings	Gross Verified kW Savings	Ex Post Gross kW Savings	Gross Realization Rate	Ex Post Net kW Savings	Net-to-Gross Ratio
Residential Income Qualified Weatherproofing	49.01	49.01	31.21	68.42	140%	68.42	100%
Home Energy Products	261.96	261.96	135.33	81.19	31%	50.36	62%
Home Energy Management	2,928.00	2,928.00	2,928.00	3,796.66	130%	3,796.66	100%
Mid-Stream Appliances Pilot	0.33	0.33	0.33	11.93	3615%	7.63	64%
Residential Portfolio Totals	3,239.30	3,239.30	3,094.87	3,958.20	122%	3,923.07	99%

1.3. Cost Effectiveness Evaluation Findings

The following cost effectiveness tests were performed for the programs: Total Resource Cost (TRC) test, Utility Cost Test (UCT), Participant Cost Test (PCT), and Ratepayer Impact Measure (RIM) test. A test score above one signifies that, from the perspective of the test, the program

benefits were greater than the program costs. The test results for each program are presented in Table 1-6.

Table 1-6 Summary of PY2022 Benefit-Cost Ratios

<i>Program</i>	<i>Program Administrator Cost Test</i>	<i>Total Resource Cost Test</i>	<i>Ratepayer Impact Measure</i>	<i>Participant Cost Test</i>
Home Energy Management	0.20	0.29	0.19	N/A
Home Energy Products	0.32	0.33	0.16	2.58
Mid-Stream Appliances Pilot	0.10	0.08	0.08	1.09
Residential Income Qualified Weatherproofing	0.61	0.61	0.21	N/A
Residential Portfolio Total - without Low Income	0.20	0.29	0.19	12.78
Residential Portfolio Total - with Low Income	0.24	0.33	0.19	17.29

1.4. Evaluation Findings and Recommendations

1.4.1. Residential New Construction

No new construction projects were completed through the program in 2022. The I&M Oversight Board voted to not continue the New Construction Program in 2023, 2024, and 2025.

1.4.2. Residential Income Qualified Weatherproofing

The program marketing and design are intended to efficiently use resources by aligning the costs of the service provided with the energy savings potential. Alignment of program resources and savings potential is accomplished through targeting marketing towards households that energy-use analysis identifies as likely to have electric heating and through the use of virtual audits instead of in-home audits for homes with non-electric heating. This approach focuses more expensive in-home audits on homes that are more likely to lead to cost-effective deeper retrofits. During the year, 10% of the participating homes received additional improvements beyond the direct install and virtual verification kit measure and I&M noted that contractor availability had constrained program activity.

In-home assessment participant satisfaction with the program was mixed. Approximately two-thirds of respondents stated that they were satisfied with the program overall and a third were dissatisfied with it. Item performance and the quality of installation work were the areas that respondents were most likely to be dissatisfied with. Similarly, one-third of participants reported that they were somewhat or very dissatisfied with the in-home assessment. Comments provided by survey respondents indicate that the main issues were with not receiving report results (33% reported that they received a report or recommendations), lack of follow-up after the assessment that the assessor said would occur, and issues with scheduling the visit. Some of these concerns may reflect challenges in finding sufficient staff to deliver the in-home assessments and may be resolved during PY2023.

- **Recommendation 1:** Review communication protocols with program participants to ensure that all participants receive the results of the assessment and a clear statement on whether or not they qualify for additional home energy improvements.

Most participants in the virtual audit component were satisfied with it. Eighty-six percent were somewhat or very satisfied with the service. Seven percent were dissatisfied with the program overall. Satisfaction was lower with the kit items – 14% reported that they were dissatisfied with the items received. The reasons customers gave for their dissatisfaction were that they did not understand how to use the power strip, that they did not receive a kit, and that they did not get a report of the audit findings.

The in-service rate for advanced power strips may have been adversely impacted due to the item being left for customers to install without directions on how to install the measure. The measure in-service rate was adversely impacted because reported that nothing was installed in the switched or controlled outlets. Additionally, one participant commented that they did not know how to install the device.

- **Recommendation 2a:** Leverage the presence of the energy auditor by having them install the advanced power strip for customers to improve the rate at which the devices are properly used to generate energy savings.
- **Recommendation 2b:** Either instead of direct installation of the power strip or in addition, the program should provide instructions to customers on how to install the device. The instructions could include examples of a typical entertainment center setup and a typical office setup to increase the correct use of the device.

1.4.3. Home Energy Products

Midstream HVAC incentives launched at midyear and achieved limited sales in the first year of operation. The midstream incentives launched in June. Participation during the year was limited as the implementer focused on recruiting and training distributors. Other evaluations have reported that multiple years are needed for midstream programs to ramp up their sales of efficient equipment.

- **Recommendation 1:** We recommend that the program continue to work with distributors to encourage participation. Outreach to contractors that have historically completed projects through the downstream program may lead them to seek out incentives from distributors and increase participation. Distributor participation should be monitored during PY2023 and a significant increase in sales should occur during the year.

Efficient Product rebate participants were satisfied with their program experience. Eighty-nine of the respondents were satisfied with the program overall and the incidence of dissatisfaction was very low.

Overall, 84% of participants were satisfied with their online marketplace purchase. Additionally, 51% of customers were classified as promoters based on their likelihood of

recommending the program to others. The ease of using the marketplace and the affordability of the products were key factors in customers' willingness to promote the service. Nineteen percent of respondents were classified as detractors. For these customers, the most common issue was the product purchased rather than the service. However, 20% of detractors who commented mentioned that the website was difficult to use.

- **Recommendation 2:** Consider expanding the marketplace as an alternative to the downstream rebate program because of the convenience it affords customers. For example, measures such as dehumidifiers could be moved to the marketplace.

Ex ante savings estimates, primarily for marketplace measures differed in many cases from the ex post estimates. Ex ante savings estimates were high for air purifiers, Wi-Fi thermostats, and kitchen aerators. The estimates for advanced power strips were also high, but this was largely a function of the in-service rate.

- **Recommendation 3:** Review marketplace ex ante savings estimates particularly for air purifiers, Wi-Fi thermostats, and kitchen aerators.

1.4.4. Home Energy Management

The Home Energy Management Program achieved 3,796.66 kW in demand reductions and 76,295 kWh in energy savings. Ten events were called during the summer, four of which coincided with PJM 5 CP hours.

1.5. Organization of Report

This report is divided into two volumes that provide information on the impact, process, and cost effectiveness evaluation of the Indiana Michigan Power portfolio of residential programs implemented in Indiana during the 2022 program year. Volume I is organized as follows:

- Chapter 2: Residential New Construction
- Chapter 3: Residential Income Qualified Weatherproofing
- Chapter 4: Home Energy Products
- Chapter 5: Home Energy Management
- Chapter 6: Cost Effectiveness Evaluation

See report Volume II for chapters presenting survey instruments and tabulated survey response information.

2. Residential New Construction

2.1. Program Description

The Home New Construction Program is offered to home builders that construct their homes to be more energy efficient than the same home built to the current building energy code (the 2020 Indiana Residential Building Code, which is the 2018 IRC that references the 2018 IECC with amendments).

In 2021, the program transitioned to an all-electric homes design that assumes an all-electric baseline home built to the current energy code. To participate in the new program, newly constructed homes must be all-electric and obtain a HERS score of 75 or below.⁴ Incentives are available for equipment and building construction that exceed the requirement of the building code for the following types of measures: HVAC equipment, heat pump water heaters, LED lighting, and shell weatherproofing. The incentives are payable on a per measure type basis, which allows builders to select which efficiency measures they want to incorporate in the building.

No new construction projects were completed through the program in 2022. The I&M Oversight Board voted to not continue the New Construction Program in 2023, 2024, and 2025.

⁴ HERS stands for Home Energy Rating System. A score of 100 is a code-built reference home. A score of 75, for example, means the home is 25% more efficient than the code-built reference home.

3. Residential Income Qualified Weatherproofing

This chapter presents the results of both the impact and process evaluations of the 2022 Income Qualified Weatherproofing Program that Indiana Michigan Power (I&M) offered to its residential customers during the period of January 2022 through December 2022.

The objectives of the evaluation were to:

- Assess gross and net energy (kWh) savings and peak demand (kW) reductions resulting from participation in the program during the program year;
- Review and assess the quality of program documentation and quality control procedures; and
- Provide recommendations for program improvement.

3.1. Program Description

The Income Qualified Weatherproofing Program is offered to residential customers who would not otherwise be able to make energy efficiency improvements. The program provides energy audits, direct install measures, and weatherization services to qualifying customers at no additional cost.

Eligible customers must reside in a single-family home or duplex with electric heating and have a household income below 200% of the Federal Poverty Level. Incentives are also available for non-tenant owned multi-family properties.

I&M works with a third party, SEEL, to conduct in-home and virtual audits.

3.2. Data Collection

3.2.1. Participant Survey

ADM completed three surveys of program participants to collect data to verify that the recorded measures were installed.

To determine the minimum sample size needed to meet this precision requirement, ADM assumed a CV of .5, as is typically used in residential program evaluations. The sample size requirement was estimated using the following formula:

$$n_0 = \left(\frac{1.645 * CV}{TP} \right)^2$$

Where,

1.645 = Z Score for 90% confidence interval in a normal distribution

CV = Coefficient of Variation

TP = Targeted Precision, 10% in this evaluation

With 10% targeted precision (TP), this called for a minimum sample of 68 participants.

ADM administered the survey to a census of unique contacts for the Income Qualified Weatherproofing in-home assessment component of the program. For the email survey, ADM contacted each participant up to three times to ask them to complete the survey. For contacts without an email address available, ADM contacted participants up to four times to complete the survey. Table 3-1 summarizes the results of the survey data collection effort.

Table 3-1 Income Qualified Weatherproofing In-Home Participant Survey

<i>Mode</i>	<i>Time Frame</i>	<i>Number of Contacts</i>	<i>Number of Completions</i>
Email	January 2023	46	9
Phone	January 2023	21	8
Total		67	17

ADM contacted all participants who received a virtual assessment and had an email address by email to complete the survey. ADM contacted customers who participated in Q1 of 2022 in December 2022 to complete the survey. We contacted Q2 through Q4 participants in January to complete the survey. Each contact received up to three emails asking them to complete the survey.

Table 3-2 Income Qualified Weatherproofing Virtual Assessment Kit Survey

<i>Mode</i>	<i>Time Frame</i>	<i>Number of Contacts</i>	<i>Number of Completions</i>
Email	December 2022 - January 2023	335	44

I&M distributed advance power strips and door weatherstripping materials through three foodbanks in October and December. ADM targeted 50 survey responses from the recipients for each measure type (i.e., a total of 100 responses). Each of the distributed measures had a sticker placed on it that provided a web link, QR code, and information about the \$10 incentive offered to those who completed the survey. To receive the incentive, the respondent was required to provide a mailing address.

Table 3-3 summarizes the response to the survey. Fifty-seven of the 58 responses came from participants who received an advanced power strip and one response came from an individual who received the door weatherstripping.

Table 3-3 Donated Measure Recipient Survey

<i>Mode</i>	<i>Time Frame</i>	<i>Number of Contacts</i>	<i>Number of Completions</i>
Online	November 2022 - January 2023	NA	58

3.2.2. Program Staff Interviews

ADM completed two interviews with program staff; one interview was completed with an I&M program representative and another with two representatives of the implementation contractor firm, Solutions for Energy Efficient Logistics (SEEL).

3.3. Estimation of Ex Post Gross Savings

3.3.1. Methodology for Estimating Ex Post Gross Energy Savings

3.3.1.1. *Sampling Plan*

ADM contacted a census of participants in the Income Qualified Weatherproofing Program to complete a survey used to verify the installation of the equipment installed through the program.

3.3.1.2. *Review of Documentation*

I&M maintains program tracking information that includes a list of all participants, the measures that were installed in their homes, and the kWh and kW savings associated with each measure. The first aspect of conducting measurements of program activity was to verify that the tracking data report of participants and measures was accurate. To this end, ADM reviewed the program data to verify that the fields required for performing the evaluation are tracked and populated (i.e., the data is not missing) and that the values are reasonable. ADM took several steps in verifying the number of weatherproofing measures installed, which consist of the following:

- Validating program tracking data by checking for duplicate or erroneous entries; and
- Conducting verification surveys with a sample of program participants to verify that customers listed in the program tracking database did indeed participate and that the number of measures claimed to be installed is accurate.

ADM also reviewed the savings estimates used to calculate ex ante energy impacts for installed measures. This evaluation activity is intended to support development of any actionable recommendations for refinement of the ex ante savings calculation approach.

3.3.1.3. *Procedures for Estimating Measure-Level Gross Energy Savings*

Table 3-4 presents information on savings calculation formulas, savings calculation inputs, incremental cost, and effective useful life values and data sources applicable to the Income Qualified Weatherproofing Program.

Table 3-4 Income Qualified Weatherproofing Program Calculation Input Information

Variable Type	Variable Name	Variable Value	Variable Value Source
Measure Name: Ductless Heat Pump			
Savings - 1	ΔkWh Baseline 1		$((\text{Capacity_heat} / \text{HSPF_base}) - (\text{Capacity_heat} / \text{HSPF_ee})) / 1000 * \text{EFLH_heat} * \text{HLAF}) + (((\text{Capacity_cool} / \text{SEER_base}) - (\text{Capacity_cool} / \text{SEER_ee})) / 1000 * \text{EFLH_cool} * \text{CLAF}) + (((\text{Capacity_heat} / \text{HSPF_exist}) - (\text{Capacity_heat} / \text{HSPF_base})) / 1000 * \text{ER_factor} * \text{EFLH_heat} * \text{HLAF}) + (((\text{Capacity_cool} / \text{SEER_exist}) - (\text{Capacity_cool} / \text{SEER_base})) / 1000 * \text{ER_factor} * \text{EFLH_cool} * \text{CLAF})$
Savings - 2	ΔkW Baseline 1		$(\text{Capacity_cool} * ((1 / \text{EER_base}) - (1 / \text{EER_ee}))) / 1000 * \text{CF} + (\text{ER_factor} * \text{Early Replacement Incremental kW Savings})$
Savings - 2	ΔkWh (Baseline 2)		$((\text{CLAF} * \text{Capacity_heat} * \text{EFLH_heat} * ((1 / \text{HSPF_base}) - (1 / \text{HSPF_ee})) / 1000) + ((\text{Capacity_cool} * \text{EFLH_cool} * ((1 / \text{SEER_base}) - (1 / \text{SEER_ee})) / 1000))$
Savings - 2	ΔkW (Baseline 2)		$(\text{Capacity_cool} * ((1 / \text{EER_base}) - (1 / \text{EER_ee}))) / 1000 * \text{CF}$
Input	Capacity_cool	Varies	Tracking data.
Input	EFLH_cool	Varies	Indiana TRM V2.2, p. 104.
Input	SEER_exist	11.15	Indiana TRM V2.2, p. 104.
Input	SEER_base	14	Federal appliance standard.
Input	SEER_ee	Varies	AHRI. Characteristics of applicable equipment.
Input	EER_exist	Varies	Indiana TRM V2.2, p. 105.
Input	EER_base	11.7	Federal appliance standard.
Input	EER_ee	Varies	AHRI. Characteristics of applicable equipment.
Input	Capacity_heat	Varies	Tracking data.
Input	EFLH_heat	Varies	Indiana TRM V2.2, p. 104.
Input	HSPF_exist	3.412	Tracking data.
Input	HSPF_base	8.2	Federal appliance standard.
Input	HSPF_ee	Varies	AHRI. Characteristics of applicable equipment.
Input	CF	Varies	Indiana TRM V2.2, p. 105.
Input	CLAF	Varies	Cooling load adjustment factor, based on analysis of baseline energy usage data. Value is less than or equal to 1.
Input	HLAF	Varies	Heating load adjustment factor, based on analysis of baseline energy usage data. Value is less than or equal to 1.
Input	ER_factor	1	Assumption. Low income program.
EUL - 1		5	Indiana TRM V2.2, p. 102-103.
EUL - 2		13	Indiana TRM V2.2, p. 102-103.
Inc Cost		\$ -	Measure cost accounted for by program costs.
Measure Name: Air Sealing			
Savings	ΔkWh		$(\text{CFM50_before} - \text{CFM50_after}) / \text{Nfactor} * \text{kWh_CFM}$
Savings	ΔkW		$(\text{CFM50_before} - \text{CFM50_after}) / \text{Nfactor} * \text{kW_CFM} * \text{CF}$
Input	CFM50_after	Varies	Tracking data.
Input	CFM50_before	Varies	Tracking data.

<i>Variable Type</i>	<i>Variable Name</i>	<i>Variable Value</i>	<i>Variable Value Source</i>
Input	<i>Nfactor</i>	Varies	Indiana TRM V2.2, p. 51.
Input	<i>kWh_CFM</i>	Varies	Indiana TRM V2.2, p. 53.
Input	<i>kW_CFM</i>	Varies	Indiana TRM V2.2, p. 53.
Input	<i>CF</i>	0.88	Indiana TRM V2.2, p. 52.
Input	<i>Exposure Level</i>	Varies	Tracking data.
Input	<i>Heat Type</i>	Varies	Tracking data.
Input	<i>Area</i>	Varies	Based on zip code.
EUL		15	Indiana TRM V2.2, p. 51.
Inc Cost		\$ -	Measure cost accounted for by program costs.
Measure Name: Ceiling Insulation			
Savings	ΔkWh		$ksf * kWh_ksf$
Savings	ΔkW		$ksf * kW_ksf * CF$
Input	<i>ksf</i>	Varies	Tracking data. Area insulated (1,000 sqft.).
Input	<i>kWh_ksf</i>	Varies	Indiana TRM V2.2, p. 43.
Input	<i>kW_ksf</i>	Varies	Indiana TRM V2.2, p. 43.
Input	<i>CF</i>	0.88	Indiana TRM V2.2, p. 43.
EUL		25	Indiana TRM V2.2, p. 40.
Inc Cost		\$ -	Measure cost accounted for by program costs.
Measure Name: Wall Insulation			
Savings	ΔkWh		$ksf * kWh / ksf$
Savings	ΔkW		$ksf * kW / ksf * CF$
Input	<i>ksf</i>	Varies	Tracking data. Area insulated (1,000 sqft.).
Input	<i>kWh/ksf</i>	Varies	Indiana TRM V2.2, p. 43.
Input	<i>kW/ksf</i>	Varies	Indiana TRM V2.2, p. 43.
Input	<i>CF</i>	0.88	Indiana TRM V2.2, p. 43.
EUL		25	Indiana TRM V2.2, p. 40.
Inc Cost		\$ -	Measure cost accounted for by program costs.
Measure Name: Duct Sealing			
Savings	ΔkWh		$((DE_cool_post - DE_cool_pre) / DE_cool_post * EFLH_cool * BTUh_cool / (SEER * 1000)) + ((DE_heat_post - DE_heat_pre) / DE_heat_post * EFLH_heat * BTUh_heat / (3412 * nHeat))$
Savings	ΔkW		$(DE_cool_pk_post - DE_cool_pk_pre) / DE_cool_pk_post * BTUh_cool / (EER * 1000) * CF$
Input	<i>DE_cool_pre</i>	Varies	Indiana TRM V2.2, p. 58-59. Based on measured leakage levels and location.
Input	<i>DE_cool_post</i>	Varies	Indiana TRM V2.2, p. 58-59. Based on measured leakage levels and location.
Input	<i>EFLH_cool</i>	Varies	Indiana TRM V2.2, p. 56.
Input	<i>BTUh_cool</i>	Varies	Tracking data.
Input	<i>SEER</i>	Varies	Tracking data.
Input	<i>DE_heat_pre</i>	Varies	Indiana TRM V2.2, p. 58-59. Based on measured leakage levels and location.

<i>Variable Type</i>	<i>Variable Name</i>	<i>Variable Value</i>	<i>Variable Value Source</i>
Input	<i>DE_heat_post</i>	Varies	Indiana TRM V2.2, p. 58-59. Based on measured leakage levels and location.
Input	<i>EFLH_heat</i>	Varies	Indiana TRM V2.2, p. 57.
Input	<i>BTUh_heat</i>	Varies	Tracking data.
Input	<i>nHeat</i>	Varies	Tracking data.
Input	<i>DE_cool_pk_pre</i>	Varies	Indiana TRM V2.2, p. 58-59. Based on measured leakage levels and location.
Input	<i>DE_cool_pk_post</i>	Varies	Indiana TRM V2.2, p. 58-59. Based on measured leakage levels and location.
Input	<i>EER</i>	Varies	Tracking data.
Input	<i>CF</i>	0.88	Indiana TRM V2.2, p. 58.
EUL		20	Indiana TRM V2.2, p. 55.
Inc Cost		\$ -	Measure cost accounted for by program costs.
Measure Name: Bathroom Faucet Aerators			
Savings	<i>ΔkWh</i>		$((GPM_{base} - GPM_{low}) * MPD * (PH / FH) * DR * 8.3 * (T_{mix} - T_{in}) * 365) / (RE * 3412)$
Savings	<i>ΔkW</i>		$((GPM_{base} - GPM_{low}) * 60 * DR * 8.3 * (T_{mix} - T_{in}) * CF) / (RE * 3412)$
Input	<i>GPMbase</i>	1.9	Indiana TRM V2.2, p. 69.
Input	<i>GPMlow</i>	Varies	Characteristics of applicable equipment.
Input	<i>MPD</i>	1.6	Indiana TRM V2.2, p. 69.
Input	<i>PH</i>	Varies	Indiana TRM V2.2, p. 69. Varies based on housing type.
Input	<i>FH</i>	Varies	Indiana TRM V2.2, p. 69. Varies based on installation location and housing type.
Input	<i>DR</i>	Varies	Indiana TRM V2.2, p. 70
Input	<i>Tmix</i>	Varies	Indiana TRM V2.2, p. 70
Input	<i>Tin</i>	Varies	Area-specific value, Indiana TRM V2.2
Input	<i>CF</i>	Varies	Indiana TRM V2.2, p. 71.
Input	<i>RE</i>	0.98	Indiana TRM V2.2, p. 71.
EUL		10	Indiana TRM V2.2, p. 68.
Inc Cost		\$ -	Measure cost accounted for by program costs.
Measure Name: Shower Head			
Savings	<i>ΔkWh</i>		$((GPM_{base} - GPM_{low}) * MS * SPD * (PH / SH) * 8.3 * (T_{mix} - T_{in}) * 365) / (RE * 3412)$
Savings	<i>ΔkW</i>		$((GPM_{base} - GPM_{low}) * 60 * 8.3 * (T_{mix} - T_{in}) * CF) / (RE * 3412)$
Input	<i>GPMbase</i>	2.63	Indiana TRM V2.2, p. 74.
Input	<i>GPMlow</i>	1.5	Characteristics of applicable equipment.
Input	<i>MS</i>	7.8	Indiana TRM V2.2, p. 74.
Input	<i>SPD</i>	0.6	Indiana TRM V2.2, p. 74.
Input	<i>PH</i>	Varies	Indiana TRM V2.2, p. 74. Varies based on housing type.
Input	<i>SH</i>	Varies	Indiana TRM V2.2, p. 74. Varies based on housing type.
Input	<i>Tmix</i>	101	Indiana TRM V2.2, p. 75.

<i>Variable Type</i>	<i>Variable Name</i>	<i>Variable Value</i>	<i>Variable Value Source</i>
Input	<i>Tin</i>	Varies	Indiana TRM V2.2, p. 75. Varies based on climate zone.
Input	<i>RE</i>	0.98	Indiana TRM V2.2, p. 75.
Input	<i>CF</i>	0.0023	Indiana TRM V2.2, p. 75. Varies based on climate zone.
EUL		10	Indiana TRM V2.2, p. 73.
Inc Cost		\$ -	Measure cost accounted for by program costs.
Measure Name: Direct Install Lighting			
Savings - 1	<i>ΔkWh Baseline 1</i>		$(WattsBase - WattsEE) * Hours * (1 + WHFe) / 1000$
Savings - 2	<i>ΔkW Baseline 1</i>		$(WattsBase - WattsEE) * CF * (1 + WHFd) / 1000$
Savings - 2	<i>ΔkWh (Baseline 2)</i>		$(WattsBase - WattsEE) * Hours * (1 + WHFe) / 1000 * MidlifeAdjustmentFactor$
Savings - 2	<i>ΔkW (Baseline 2)</i>		$(WattsBase - WattsEE) * CF * (1 + WHFd) / 1000 * MidlifeAdjustmentFactor$
Input	<i>WattsBase</i>	Varies	Illinois TRM V10.0 Vol. 3, p. 273 and p. 289.
Input	<i>WattsEE</i>	Varies	Illinois TRM V10.0 Vol. 3, p. 273 and p. 289.
Input	<i>Hours</i>	Varies	Indiana TRM V2.2, p. 133 and Illinois TRM V10.0 Vol. 3, p. 276.
Input	<i>WHFe</i>	Varies	Indiana TRM V2.2, p. 133.
Input	<i>WHFd</i>	Varies	Indiana TRM V2.2, p. 133.
Input	<i>CF</i>	0.11	Indiana TRM V2.2, p. 134.
Input	<i>MidlifeAdjustmentFactor</i>	Varies	Illinois TRM V10.0 Vol. 3, p. 293 and p. 278.
Input	<i>lighting_Type</i>	WHFe	Tracking Data.
EUL - 1		7	Illinois TRM V10.0 Vol. 3, p. 270, 276, 288, 293.
EUL - 2		3	Illinois TRM V10.0 Vol. 3, p. 270, 276, 288, 293.
Inc Cost		\$ -	Measure cost accounted for by program costs.
Measure Name: Customer Education			
Savings	<i>ΔkWh</i>		<i>kWh_Savings_per_Customer</i>
Savings	<i>ΔkW</i>		<i>kW_Savings_per_Customer</i>
Input	<i>kWh_Savings_per_Customer</i>	115.14815	Analysis of customer survey response data, 2012 Energizing Indiana Programs EM&V Report.
Input	<i>kW_Savings_per_Customer</i>	0.0051852	Analysis of customer survey response data, 2012 Energizing Indiana Programs EM&V Report.
EUL		1	Behavioral Measure
Inc Cost		\$ -	Measure cost accounted for by program costs.
Measure Name: Lighting (Kit)			
Savings - 1	<i>ΔkWh Baseline 1</i>		$(WattsBase - WattsEE) * Hours * (1 + WHFe) / 1000$
Savings - 2	<i>ΔkW Baseline 1</i>		$(WattsBase - WattsEE) * CF * (1 + WHFd) / 1000$
Savings - 2	<i>ΔkWh (Baseline 2)</i>		$(WattsBase - WattsEE) * Hours * (1 + WHFe) / 1000 * MidlifeAdjustmentFactor$
Savings - 2	<i>ΔkW (Baseline 2)</i>		$(WattsBase - WattsEE) * CF * (1 + WHFd) / 1000 * MidlifeAdjustmentFactor$
Input	<i>WattsBase</i>	Varies	Illinois TRM V10.0 Vol. 3, p. 289.

<i>Variable Type</i>	<i>Variable Name</i>	<i>Variable Value</i>	<i>Variable Value Source</i>
Input	<i>WattsEE</i>	Varies	Program tracking data.
Input	<i>Hours</i>	902	Indiana TRM V2.2, p. 133.
Input	<i>WHFe</i>	Varies	Indiana TRM V2.2, p. 133.
Input	<i>WHFd</i>	Varies	Indiana TRM V2.2, p. 133.
Input	<i>CF</i>	0.11	Indiana TRM V2.2, p. 134.
Input	<i>MidlifeAdjustmentFactor</i>	0.81	Illinois TRM V10.0 Vol. 3, p. 293.
EUL - 1		7	Illinois TRM V10.0 Vol. 3, p. 288, 293.
EUL - 2		3	Illinois TRM V10.0 Vol. 3, p. 288, 293.
Inc Cost		\$ -	Measure cost accounted for by program costs.
Measure Name: LED Nightlight (Kit)			
Savings	<i>ΔkWh</i>		$(WattsBase - WattsEff) * Hours / 1000$
Savings	<i>ΔkW</i>		0
Input	<i>WattsBase</i>	5	Indiana TRM V2.2, p. 136.
Input	<i>WattsEff</i>	0.33	Indiana TRM V2.2, p. 136.
Input	<i>Hours</i>	2920	Indiana TRM V2.2, p. 136.
EUL		16	Indiana TRM V2.2, p. 135.
Inc Cost		\$ -	Measure cost accounted for by program costs.
Measure Name: Showerhead (Kit)			
Savings	<i>ΔkWh</i>		$((GPMbase - GPMlow) * MS * SPD * (PH / SH) * 8.3 * (Tmix - Tin) * 365) / (RE * 3412)$
Savings	<i>ΔkW</i>		$((GPMbase - GPMlow) * 60 * 8.3 * (Tmix - Tin) * CF) / (RE * 3412)$
Input	<i>GPMbase</i>	2.63	Indiana TRM V2.2, p. 74.
Input	<i>GPMlow</i>	1.5	Characteristics of applicable equipment.
Input	<i>MS</i>	7.8	Indiana TRM V2.2, p. 74.
Input	<i>SPD</i>	0.6	Indiana TRM V2.2, p. 74.
Input	<i>PH</i>	Varies	Indiana TRM V2.2, p. 74. Varies based on housing type.
Input	<i>SH</i>	Varies	Indiana TRM V2.2, p. 74. Varies based on housing type.
Input	<i>Tmix</i>	101	Indiana TRM V2.2, p. 75.
Input	<i>Tin</i>	Varies	Indiana TRM V2.2, p. 75. Varies based on climate zone.
Input	<i>RE</i>	0.98	Indiana TRM V2.2, p. 75.
Input	<i>CF</i>	0.0023	Indiana TRM V2.2, p. 75. Varies based on climate zone.
EUL		10	Indiana TRM V2.2, p. 73.
Inc Cost		\$ -	Measure cost accounted for by program costs.
Measure Name: Advanced Power Strip (Kit)			
Savings	<i>ΔkWh</i>		<i>kWh</i>
Savings	<i>ΔkW</i>		<i>kWh / Hours * CF</i>
Input	<i>kWh</i>	Varies	Illinois TRM V10.0 Vol. 3, p. 64. Varies based on number of plugs.
Input	<i>Number_of_Plugs</i>	Varies	Tracking data.

<i>Variable Type</i>	<i>Variable Name</i>	<i>Variable Value</i>	<i>Variable Value Source</i>
Input	<i>Hours</i>	7129	Illinois TRM V10.0 Vol. 3, p. 65. Varies based on number of plugs.
Input	<i>CF</i>	0.8	Illinois TRM V10.0 Vol. 3, p. 65. Varies based on number of plugs.
EUL		7	Illinois TRM V10.0 Vol. 3, p. 63.
Inc Cost		\$ -	Measure cost accounted for by program costs.
<i>Measure Name: Bathroom Faucet Aerator (Kit)</i>			
Savings	<i>ΔkWh</i>		$((GPM_{base} - GPM_{low}) * MPD * (PH / FH) * DR * 8.3 * (T_{mix} - T_{in}) * 365) / (RE * 3412)$
Savings	<i>ΔkW</i>		$((GPM_{base} - GPM_{low}) * 60 * DR * 8.3 * (T_{mix} - T_{in}) * CF) / (RE * 3412)$
Input	<i>GPM_{base}</i>	1.9	Indiana TRM V2.2, p. 69.
Input	<i>GPM_{low}</i>	Varies	Characteristics of applicable equipment.
Input	<i>MPD</i>	1.6	Indiana TRM V2.2, p. 69.
Input	<i>PH</i>	Varies	Indiana TRM V2.2, p. 69. Varies based on housing type.
Input	<i>FH</i>	Varies	Indiana TRM V2.2, p. 69. Varies based on installation location and housing type.
Input	<i>DR</i>	Varies	Indiana TRM V2.2, p. 70
Input	<i>T_{mix}</i>	Varies	Indiana TRM V2.2, p. 70
Input	<i>T_{in}</i>	Varies	Area-specific value, Indiana TRM V2.2
Input	<i>CF</i>	Varies	Indiana TRM V2.2, p. 71.
Input	<i>RE</i>	0.98	Indiana TRM V2.2, p. 71.
EUL		10	Indiana TRM V2.2, p. 68.
Inc Cost		\$ -	Measure cost accounted for by program costs.
<i>Measure Name: Kitchen Faucet Aerator (Kit)</i>			
Savings	<i>ΔkWh</i>		$((GPM_{base} - GPM_{low}) * MPD * (PH / FH) * DR * 8.3 * (T_{mix} - T_{in}) * 365) / (RE * 3412)$
Savings	<i>ΔkW</i>		$((GPM_{base} - GPM_{low}) * 60 * DR * 8.3 * (T_{mix} - T_{in}) * CF) / (RE * 3412)$
Input	<i>GPM_{base}</i>	2.44	Indiana TRM V2.2, p. 69.
Input	<i>GPM_{low}</i>	Varies	Characteristics of applicable equipment.
Input	<i>MPD</i>	4.5	Indiana TRM V2.2, p. 69.
Input	<i>PH</i>	Varies	Indiana TRM V2.2, p. 69. Varies based on housing type.
Input	<i>FH</i>	Varies	Indiana TRM V2.2, p. 69. Varies based on installation location and housing type.
Input	<i>DR</i>	Varies	Indiana TRM V2.2, p. 70
Input	<i>T_{mix}</i>	Varies	Indiana TRM V2.2, p. 70
Input	<i>T_{in}</i>	Varies	Area-specific value, Indiana TRM V2.2
Input	<i>CF</i>	Varies	Indiana TRM V2.2, p. 71.
Input	<i>RE</i>	0.98	Indiana TRM V2.2, p. 71.
EUL		10	Indiana TRM V2.2, p. 68.
Inc Cost		\$ -	Measure cost accounted for by program costs.
<i>Measure Name: LED Nightlight</i>			

Variable Type	Variable Name	Variable Value	Variable Value Source
Savings	ΔkWh		$(WattsBase - WattsEff) * Hours / 1000$
Savings	ΔkW		0
Input	WattsBase	5	Indiana TRM V2.2, p. 136.
Input	WattsEff	0.33	Indiana TRM V2.2, p. 136.
Input	Hours	2920	Indiana TRM V2.2, p. 136.
EUL		16	Indiana TRM V2.2, p. 135.
Inc Cost		\$ -	Measure cost accounted for by program costs.
Measure Name: Advanced Power Strip			
Savings	ΔkWh		kWh
Savings	ΔkW		$kWh / Hours * CF$
Input	kWh	Varies	Illinois TRM V10.0 Vol. 3, p. 64. Varies based on number of plugs.
Input	Number_of_Plugs	Varies	Tracking data.
Input	Hours	7129	Illinois TRM V10.0 Vol. 3, p. 65. Varies based on number of plugs.
Input	CF	0.8	Illinois TRM V10.0 Vol. 3, p. 65. Varies based on number of plugs.
EUL		7	Illinois TRM V10.0 Vol. 3, p. 63.
Inc Cost		\$ -	Measure cost accounted for by program costs.
Measure Name: Kitchen Aerator			
Savings	ΔkWh		$((GPMbase - GPMlow) * MPD * (PH / FH) * DR * 8.3 * (Tmix - Tin) * 365) / (RE * 3412)$
Savings	ΔkW		$((GPMbase - GPMlow) * 60 * DR * 8.3 * (Tmix - Tin) * CF) / (RE * 3412)$
Input	GPMbase	2.44	Indiana TRM V2.2, p. 69.
Input	GPMlow	Varies	Characteristics of applicable equipment.
Input	MPD	4.5	Indiana TRM V2.2, p. 69.
Input	PH	Varies	Indiana TRM V2.2, p. 69. Varies based on housing type.
Input	FH	Varies	Indiana TRM V2.2, p. 69. Varies based on installation location and housing type.
Input	DR	Varies	Indiana TRM V2.2, p. 70
Input	Tmix	Varies	Indiana TRM V2.2, p. 70
Input	Tin	Varies	Area-specific value, Indiana TRM V2.2
Input	CF	Varies	Indiana TRM V2.2, p. 71.
Input	RE	0.98	Indiana TRM V2.2, p. 71.
Input	Area	Varies	Based on program tracking data zip code
Input	Housing_Type	Varies	Tracking data.
Input	Location	Kitchen	Tracking data.
EUL		10	Indiana TRM V2.2, p. 68.
Inc Cost		\$ -	Measure cost accounted for by program costs.
Measure Name: Pipe Wrap			
Savings	ΔkWh		$((1 / R_Exist) - (1 / R_New)) * ((L * C * delta_T * 8760) / (n_DHW * 3412))$

Variable Type	Variable Name	Variable Value	Variable Value Source
Savings	ΔkW		$((1/R_{Exist}) - (1/R_{New})) * ((L * C * \Delta T * 8760) / (n_{DHW} * 3412))) / 8760$
Input	R_{Exist}	Varies	Indiana TRM V2.2, p. 78.
Input	R_{New}	Varies	Indiana TRM V2.2, p. 78.
Input	ΔT	Varies	Indiana TRM V2.2, p. 78.
Input	n_{DHW}	Varies	Indiana TRM V2.2, p. 78.
Input	L	Varies	Tracking data.
Input	C	Varies	Tracking data.
EUL		15	Indiana TRM V2.2, p. 77.
Inc Cost		\$ -	Measure cost accounted for by program costs.
Measure Name: Refrigerators			
Savings - 1	ΔkWh Baseline 1		$(kWh_{exist} - kW_{hee}) * 365.25$
Savings - 2	ΔkW Baseline 1		$((kWh_{exist} - kW_{hee}) * 365.25) / Hours * CF$
Savings - 2	ΔkWh (Baseline 2)		$(kWh_{base} - kW_{hee}) * 365.25$
Savings - 2	ΔkW (Baseline 2)		$((kWh_{base} - kW_{hee}) * 365.25) / Hours * CF$
Input	kWh_{base}	Varies	Illinois TRM V10.0, p. 31
Input	kW_{hee}	Varies	Illinois TRM V10.0, p. 31
Input	$Hours$	8766	Illinois TRM V10.0, p. 32
Input	CF	0.937	Illinois TRM V10.0, p. 32
Input	kWh_{exist}	Varies	Pre-existing unit specifications.
EUL - 1		8	Indiana TRM V2.2, p. 13-14.
EUL - 2		9	Indiana TRM V2.2, p. 13-14.
Inc Cost		\$ -	Measure cost accounted for by program costs.
Measure Name: Weatherstrip			
Savings	ΔkWh		$(\Delta kWh_{WX_ft_hp} * share_hp + \Delta kWh_{WX_ft_elec_resist} * share_elec_resist) * ln_ft$
Savings	ΔkW		Cooling savings not quantified using selected IL-TRM V8.0-based approach.
Input	$\Delta kWh_{WX_ft_hp}$	Varies	Weather-adjusted value based on Illinois TRM V10.0 Vol. 3, p. 327.
Input	$share_hp$	Varies	Estimated share of installed weatherstripping installed in homes with heat pump. 2020 RECS Midwest Census Region data.
Input	$\Delta kWh_{WX_ft_elec_resist}$	Varies	Weather-adjusted value based on Illinois TRM V10.0 Vol. 3, p. 327.
Input	$share_elec_resist$	Varies	Estimated share of installed weatherstripping installed in homes with electric resistance heating. 2020 RECS Midwest Census Region data.
Input	ln_ft	Varies	Linear feet of weather stripping.
EUL		15	Indiana TRM V2.2, p. 50.
Inc Cost		\$ -	Measure cost accounted for by program costs.

3.3.1.4. Verification and In-Service Rates

Table 3-5 shows the verification rates for program measures installed through the income-qualified program for in-home participants. None of the respondents received air sealing, refrigerators, or ductless heat pumps. For these measures, ADM applied the average verification rate from the 2019 – 2021 participant surveys. For the remaining measures, in-service rates were developed from surveys of participants.

The primary reason the in-service rate for advanced power strips was low was that participants reported that they did not have equipment plugged into the control outlet, the controlled outlet, or both. The in-service rate for night lights was low primarily because 42% of the night lights were installed in an empty outlet, rather than replacing an existing night light.

Comments made by survey respondents suggest that the items are not consistently installed during the home visit. Such comments include “The bathroom thing was just given to me, not installed” and in reference to the power strip “I’m not using it because I have no clue how to. I’ve tried multiple ways of plugging items in and can’t figure it out.” To the extent that devices are left for residents to self-install, the measure in-service rates, particularly for measures like power strips which customers may not understand how to best use, are likely to be adversely impacted.

Table 3-5 Verification Rates for In-Home Participant Measures

<i>Measure</i>	<i>Number Installed in Survey Sample</i>	<i>Verification / In-Service Rate</i>	<i>Source</i>
Air sealing	21	90%	Average 2019 -2021 survey value
Energy efficient refrigerator	15	100%	
Ductless heat pump	3	100%	
LED	132	91%	2022 participant survey
Bathroom Aerator	12	83%	
Kitchen Aerator	5	80%	
Showerheads	8	100%	
Pipewrap	4	100%	
Advanced Power Strips	10	30%	
Night Lights	59	40%	

I&M distributed kits with energy saving measures to program participants who completed a virtual assessment. Table 3-6 summarizes the kit contents.

Table 3-6 Virtual Assessment Efficiency Kits

<i>Electric Water Heater Kit</i>		<i>Gas Water Heater Kit</i>	
<i>Item</i>	<i>Quantity</i>	<i>Item</i>	<i>Quantity</i>
Advanced Power Strip (7 Plug)	1	Advanced Power Strip (7 Plug)	1
LED bulbs (9 W)	8	LED bulbs (9 W)	8
High efficiency showerheads (1.5 gpm)	2	LED night lights (.33 W)	2
Kitchen faucet aerator (1.5 gpm)	1		
Bathroom faucet aerators (1 gpm)	2		
LED night lights (.33 W)	2		

Table 3-7 summarizes the in-service rates for the efficiency measures distributed in the virtual assessment efficiency kits.

Table 3-7 Virtual Assessment Efficiency Kit In-Service Rates

<i>Measure</i>	<i>Number Received in the Survey Sample</i>	<i>In-Service Rate</i>
9W LED	320	81%
Advanced power strips	37	59%
Showerhead	24	58%
Kitchen aerator	12	58%
Bath aerator	24	58%
LED Nightlight	86	51%

Table 3-8 summarizes the in-service rates for the distributed measure component of the program (measures distributed through three foodbanks in October and December).

Table 3-8 Distributed Measures In-Service Rates

<i>Measure</i>	<i>Number of Units in Sample</i>	<i>In-Service Rate</i>
Weatherstripping	NA	63%
Advanced power strips	57	63%

Because a single respondent received the weatherstripping, ADM referenced a study completed in Illinois that found an in-service rate for weatherstripping provided in a weatherization kit of 63%.

<https://www.ilsag.info/wp-content/uploads/PGL-Income-Eligible-Gas-Kits-2019-Process-Evaluation-Report-2020-06-16-Final.pdf>

3.3.2. Results of Ex Post Gross Savings Estimation

Table 3-9 summarizes the gross kWh savings of the Income Qualified Weatherization Program by measure. The ex post annual energy savings for the program were 1,172,724 kWh with a realization rate of 89%.

Table 3-9 Measure-Level Annual Gross kWh Savings

<i>Measure</i>	<i>Quantity of Measures Incented</i>	<i>Ex Ante Gross kWh Savings</i>	<i>Gross Audited kWh Savings</i>	<i>Gross Verified kWh Savings</i>	<i>Ex Post Gross kWh Savings</i>	<i>Gross Realization Rate</i>
Ductless Heat Pump	6	27,787	27,787	27,787	32,966	119%
Air Sealing	6	1,562	1,562	1,562	3,977	255%
Ceiling Insulation	2	1,562	1,562	1,562	922	59%
Weatherstrip	25,008	410,131	410,131	258,383	496,733	121%
Kitchen Aerator	46	7,258	7,258	5,806	6,690	92%
Bathroom Faucet Aerators	45	1,598	1,598	1,331	1,312	82%
Shower Head	47	20,374	20,374	20,374	16,540	81%
Pipe Wrap	12	4,189	4,189	4,189	4,853	116%
Direct Install Lighting	584	47,552	47,552	43,229	16,690	35%
LED Nightlight	286	6,292	6,292	2,517	1,560	25%
Advanced Power Strip	5,081	519,593	519,593	324,745	327,089	63%
Refrigerators	1	1,135	1,135	1,135	222	20%
Lighting (Kit)	4,872	117,801	117,801	95,714	112,419	95%
LED Nightlight (Kit)	1,218	9,095	9,095	4,653	8,498	93%
Showerhead (Kit)	382	77,126	77,126	44,990	77,463	100%
Advanced Power Strip (Kit)	609	30,238	30,238	17,979	37,297	123%
Bathroom Faucet Aerator (Kit)	382	7,032	7,032	4,102	7,722	110%
Kitchen Faucet Aerator (Kit)	191	23,053	23,053	13,447	19,771	86%
Total		1,313,378	1,313,378	873,507	1,172,724	89%

The following discusses factors affecting realization rates that differed substantially from 100%.

- **Air sealing (255%). Multiple projects had 0 ex ante savings.** For the one project with a non-zero ex ante savings estimate, the ex ante savings estimate was higher than the ex post result. It is not clear how the ex ante savings value was calculated. ADM applied a different *N* factor from the Indiana TRM than what was recorded in the program tracking data for this project, but this did not account for the difference in savings when applying the Indiana TRM.
- **Ceiling insulation (59%).** The ex ante savings for one project was 0 kWh. A second project overestimated savings relative to the ex post savings calculation based on the Indiana TRM.
- **Nightlights (25%).** The 22 kWh per unit ex ante savings value was higher than the savings calculation based on the Indiana TRM, which resulted in a 13.6 kWh per unit savings value

(the calculation is based on a 5W base nightlight and .33 W efficient nightlight). Additionally, ADM applied a 40% in-service rate to the direct install nightlights. This value was developed from a survey of respondents and reflects that some nightlights did not replace an existing nightlight.

- **Direct install lighting (35%).** Some lamps had high ex ante savings estimates; in particular, the per unit ex ante savings estimates for the exterior BR30 lamps were about 3.5 times higher than the ex post estimate.
- **Advanced power strip (63%).** Ex ante savings were less than ex post savings because the ex post analysis applied the in-service rate developed from surveys of customers that received the direct install power strips or the power strips distributed through food banks.
- **Refrigerators (20%).** The ex ante savings estimate referenced the stipulated energy consumption of a replaced unit specified in the Indiana TRM, while the ex post savings estimate referenced the energy consumption of the applicable pre-existing unit.

Table 3-10 summarizes the gross peak demand reduction of the Income Qualified Weatherization Program. The gross peak demand reduction for the program was 68.42 kW, with a realization rate of 140%.

Table 3-10 Measure-level Gross kW Reduction

<i>Measure</i>	<i>Quantity of Measures Incented</i>	<i>Ex Ante Gross kW Savings</i>	<i>Gross Audited kW Savings</i>	<i>Gross Verified kW Savings</i>	<i>Ex Post Gross kW Savings</i>	<i>Gross Realization Rate</i>
Ductless Heat Pump	6	-	-	-	2.46	
Air Sealing	6	-	-	-	-	
Ceiling Insulation	2	-	-	-	0.09	
Weatherstrip	25,008	-	-	-	-	
Kitchen Aerator	46	0.12	0.12	0.10	0.31	262%
Bathroom Faucet Aerators	45	0.15	0.15	0.13	0.13	83%
Shower Head	47	0.66	0.66	0.66	0.81	123%
Pipe Wrap	12	0.17	0.17	0.17	0.55	330%
Direct Install Lighting	584	0.57	0.57	0.52	2.25	393%
LED Nightlight	286	-	-	-	-	
Advanced Power Strip	5,081	46.33	46.33	28.96	36.71	79%
Refrigerators	1	0.01	0.01	0.01	0.02	242%
Lighting (Kit)	4,872	0.39	0.39	0.32	15.40	3973%
LED Nightlight (Kit)	1,218	-	-	-	-	
Showerhead (Kit)	382	0.10	0.10	0.06	3.83	3838%
Advanced Power Strip (Kit)	609	0.47	0.47	0.28	4.19	895%
Bathroom Faucet Aerator (Kit)	382	0.02	0.02	0.01	0.74	4269%
Kitchen Faucet Aerator (Kit)	191	0.03	0.03	0.02	0.94	3366%
Total		49.01	49.01	31.21	68.42	140%

3.4. Estimation of Ex Post Net Savings

3.4.1. Methodology for Estimating Ex Post Net Energy Savings

ADM applied an NTG ratio of 1.0 for the Income Qualified Weatherproofing Program in line with common practice for the estimation of low-income program net savings.⁵ An NTG ratio of 1.0 was also applied to the efficiency kits and distributed measures.

⁵ See Violette and Rathbun, Chapter 21: Estimating Net Savings: Common Practices. The Uniform Methods Project: Methods for Determining Energy Efficiency Savings for Specific Measures, available electronically at <https://www.nrel.gov/docs/fy17osti/68578.pdf>, p. 45

3.4.2. Results of Ex Post Net Savings Estimation

Table 3-11 summarizes the ex post annual net kWh and kW savings of the Residential Income Qualified Weatherproofing Program. The annual net savings totaled 1,172,724 kWh and 68.40 kW.

Table 3-11 Program-Level Annual Net kWh and kW Savings

Category	kWh	kW
Ex Ante Gross Savings	1,313,378	49.01
Gross Audited Savings	1,313,378	49.01
Gross Verified Savings	873,507	31.21
Ex Post Gross Savings	1,172,724	68.40
Gross Realization Rate	89%	140%
Ex Post Free Ridership	0	-
Ex Post Non-Participant Spillover	0	-
Ex Post Participant Spillover	0	-
Ex Post Net Savings	1,172,724	68.40
Net-to-Gross Ratio	100%	100%
Ex Post Net Lifetime Savings	13,092,458	na

Energy savings associated with virtual assessment efficiency kits are presented by kit type in Table 3-12.

Table 3-12 Virtual Assessment Efficiency Kit Ex Post kWh Savings Estimates

Kit Type	Number of Kits	Ex Ante Gross kWh Savings	Gross Audited kWh Savings	Gross Verified kWh Savings	Ex Post Gross kWh Savings	Gross Realization Rate	Ex Post Net kWh Savings	Net-to-Gross Ratio
Electric Water Heater Kit	191	155,665	155,665	99,031	154,577	99%	154,577	100%
Gas Water Heater Kit	418	108,680	108,680	81,855	108,593	100%	108,593	100%
Total	609	264,345	264,345	180,886	263,170	100%	263,170	100%

Peak demand impacts associated with virtual assessment efficiency kits are presented by kit type in Table 3-13.

Table 3-13 Virtual Assessment Efficiency Kit Ex Post Peak Demand Reduction Estimates

<i>Kit Type</i>	<i>Number of Kits</i>	<i>Ex Ante Gross kW Savings</i>	<i>Gross Audited kW Savings</i>	<i>Gross Verified kW Savings</i>	<i>Ex Post Gross kW Savings</i>	<i>Gross Realization Rate</i>	<i>Ex Post Net kW Savings</i>	<i>Net-to-Gross Ratio</i>
Electric Water Heater Kit	191	0.43	0.43	0.28	11.65	2695%	11.65	100%
Gas Water Heater Kit	418	0.57	0.57	0.39	13.44	2367%	13.44	100%
Total	609	1.00	1.00	0.68	25.09	2509%	25.09	100%

3.5. Process Evaluation

ADM completed a process evaluation of the Income Qualified Weatherization Program. The process evaluation activities consisted of a review of program documentation, interviews and discussions with program staff, and interviews with participating distributors.

3.5.1. Process Evaluation Findings

The following sections summarize findings on program design and operations based on interviews and discussions with the I&M and implementation contractor program managers, a review of program documents, and a review of the program tracking data.

3.5.1.1. Summary of Program Participation

Table 3-14 through Table 3-16 summarize participation in the virtual assessment and in-home assessment components of the program. As shown, the program had many more virtual assessment participants than in-home participants. For in-home participants, 10% received a major measure (i.e., HVAC system, insulation, air sealing, refrigerator), and 95% received a direct install measure (Table 3-15). Savings were considerably higher for those customers that received a major measure and direct install measures (average of 4,830 kWh) and those that just received a major measure (average of 3,158 kWh), than the savings for customers that received direct install measures alone (average of 1,112 kWh).

Table 3-14 Summary of Virtual Assessment Participation

<i>Kit</i>	<i>Percent of Virtual Audit Participants (N = 1,233)</i>
Gas	34%
Electric	66%

Table 3-15 Summary of In-Home Assessment Participation

<i>Measure</i>	<i>Percent of In-Home Participants (N = 87)</i>
Direct Install Measure	95%
Major Measure	10%
Ductless Heat Pump	7%
Air Sealing	7%
Insulation	2%
Refrigerator	1%

Table 3-16 Summary of In-Home Assessment Ex Ante Savings

<i>Major Measure</i>	<i>Direct Install Measure</i>	<i>Number of Customers</i>	<i>Average Ex Ante kWh Savings</i>	<i>Average Incentive Amount</i>
No	Yes	79	1,112	\$38
Yes	No	4	3,158	\$2,933
Yes	Yes	5	4,830	\$3,795

3.5.1.2. Program Design and Operations

3.5.1.2.1. Program Design

The Income Qualified Weatherization program provides services to qualified low-income homes to improve their energy efficiency. The program offers virtual audits, in-home audits, and major measures such as air sealing and insulation. To qualify for the program, the customer’s household income must be equal to or less than 200% of the Federal Poverty Guideline.

The program is open to customers with electric or non-electric heating. Customers with non-electric heating may receive a virtual audit and kit of energy-saving measures, but do not qualify for in-home audits or major measures. Major measure projects must be cost effective to receive the improvements.

The program is open to single and multifamily customers. Customers can participate if they rent their homes, but permission from the property owner is necessary. For multifamily properties, the program can provide services to tenants if the tenant meets the income qualification requirements

for the program. Additionally, the building is eligible for weatherization measures if the tenants on the upper floor meet the program income requirements.

I&M works with a third-party contractor, Solutions for Energy Efficient Logistics (SEEL), to deliver the program. I&M supports SEEL in its implementation and markets the program to its customers. I&M will provide referrals of interested customers to SEEL and can also qualify customers that contact them if they have received assistance through the Low-income Energy Assistance Program (LEAP) in the past 12 months.

SEEL handles program functions that include customer recruitment, customer intake and qualification, delivery of program audits and direct installation of measures, development of scopes of work for major measure projects, and contractor management. SEEL works with a network of contractors to complete the major measure installation work and performs quality control verification activities of the installing contractors' work.

I&M also supports work done by community action agencies on behalf of I&M customers. Brightpoint, a community action agency (CCA) based in Fort Wayne, completed projects during PY2022. I&M also collaborated with another CCA, Jobsource, to complete weatherization work on audited homes and to make additional health and safety improvements with funding from the Indiana Community Action Association.

3.5.1.2.2. Marketing and Outreach

The primary channels used by I&M to market the program to its customers are:

- Emails sent to customers;
- Billing messages sent to customers via postal mail; and
- Information on the program website.

When marketing the program, I&M targets low-income customers with electrically heated homes, which is determined through an analysis of energy consumption patterns. The program uses a mix of email and postal mail recruitment because the staff has found that older customers may not use email or engage with it. Aside from the targeting of electrically heated homes, the program markets to all customers in the territory rather than focusing on specific communities or areas.

SEEL also engages in customer recruitment, with a focus on in-person forms of customer recruitment. Examples of the activities SEEL has engaged in include meeting with housing authorities and setting up a table in a mobile home community to offer audits to residents.

3.5.1.2.3. Participation Process

Customers begin their participation by applying to the program either by using an online form or by telephone. Customers who rent their homes need to obtain permission from the property owner to have the home audit and work performed. The tenant obtains this permission by having the property owner complete a form and return it to the program.

Income qualifications can be established in one of two ways. First, if the customer contacts I&M to participate, I&M can determine if the customer has received LEAP assistance in the past 12

months. If they have received that assistance, I&M will forward their information to SEEL and note that they meet the income requirements. If the customer contacts SEEL or is not identified as having received LEAP in the past 12 months, for single-family properties, SEEL will determine if they meet the income eligibility criteria. For multifamily properties, the property owner or manager provides a letter with information on the number of tenants that meet the income criteria and the units they live in.

The program has two tracks for customers depending on their space heating fuel. For customers with non-electric heating, or for whom the heating fuel type cannot be determined at the time of enrollment, the participant receives a virtual audit to identify energy savings opportunities for the home. For customers that receive a virtual audit, the direct installed measures are mailed to the customers. Customers receive one of two kits, depending on water heating fuel. All customers receive a kit with LED lightbulbs, an advanced power strip, and LED nightlights. Customers with electric water heating also receive faucet aerators and low-flow shower heads.

Customers with electric heating receive an in-person home audit. During the audits, the auditor collects data on the home's insulation, age, square footage, and orientation. The auditor takes photos to document the existing insulation and records the heating and cooling system equipment size and serial number. Additionally, the auditor installs the direct install measures.

When conducting the audit, the auditor discusses any areas of concern that the home occupant would like to try to address. SEEL also uses the audit process to educate the occupant about energy efficiency. SEEL staff noted that during the audit, they will point out things that the owner or tenant can consider for the future if it is not something the program will provide to them. For example, the auditor may note that when the tenant or owner replaces their appliances, they should purchase ENERGY STAR appliances. After the audit, SEEL generates a report of the audit and provides it to the participant.

After the audit is complete, SEEL reviews the information collected to determine what, if any, major measure improvements the customer is eligible for. Data collected through the audit is used to estimate the savings potential for the major measures and the cost-effectiveness of the project. To be eligible for improvements, the efficiency project, inclusive of all measures planned, must be cost-effective. I&M staff noted that the opportunity for air sealing improvements was typically necessary for a project to pass cost-effectiveness screening (in fact, six of the nine major measure projects completed during PY2022 included air sealing.)

For projects that are eligible for major measure improvements, SEEL provides the customer information to a contractor, who will in turn contact the customer to schedule the work.

The participation steps are similar for multifamily properties, but there are some differences. For multifamily projects, the program works with the property manager or owner and uses information on tenant income provided by the property manager or owner to determine the number of units eligible for program services. When performing the site audits, program staff will visit a representative selection of the units in the building to determine what opportunities there are for energy efficiency improvements.

3.5.1.2.4. Barriers to Participation

ADM discussed barriers to participation with I&M staff and the approximate proportion of homes impacted by that barrier. The condition of the home is the most significant barrier to participation for qualifying homes. Homes that do not qualify are placed on a deferral list and program staff estimated that the deferral rate may be as high as 7 out of 10 homes, however ADM did not receive data on the disposition of all homes that sought to participate. Once on a deferral list, efforts are made to restore the home to a condition that would make the energy efficiency improvements beneficial. To do this, the program provides health and safety funding that the implementation contractor can use to restore the condition of the home to a qualifying status. This funding is only available to make improvements that are preventing completing the weatherization work. If more significant improvements are needed, such as the replacement of knob and tube wiring, asbestos abatement, and roof replacement or repair of drainage issues, I&M tries to work with the local community action agency (CAA). I&M has provided funding to the Indiana Community Action Association to distribute to the CAAs to aid this effort.

I&M noted that most of the health and safety funding is used to repair homes on the deferral list. The program is also working with community action agencies to utilize other funding streams to repair homes on the deferral list.

For the remaining 3 in 10 homes that do not require significant structural repair before participating, staff estimated that one or two of those homes will qualify for major measures based on the cost-effectiveness criteria.

Staff noted that there is limited opportunity for duct sealing measures in the state. A lot of the homes serviced by the program have ductwork installed in conditioned spaces such as the basement, in which case there is minimal energy-saving benefit from sealing leaky ducts.

Another barrier that the staff mentioned was the availability of contractors to perform the installation work. I&M noted that some of the community action agencies they have worked with have had particular difficulties finding enough contractors, but this issue does not act as a major constraint on the completion of program projects. Additionally, SEEL said that while they are actively seeking to recruit additional contractors, to date, the availability of contractors has not limited program participation.

3.5.1.2.5. Data Management and Savings Calculations

SEEL uses its internal tracking system to record information about program projects. The data system is set up to perform savings calculations based on the measure and building inputs they add into the system. The program activity records, and estimated savings, are transferred to I&M's data system.

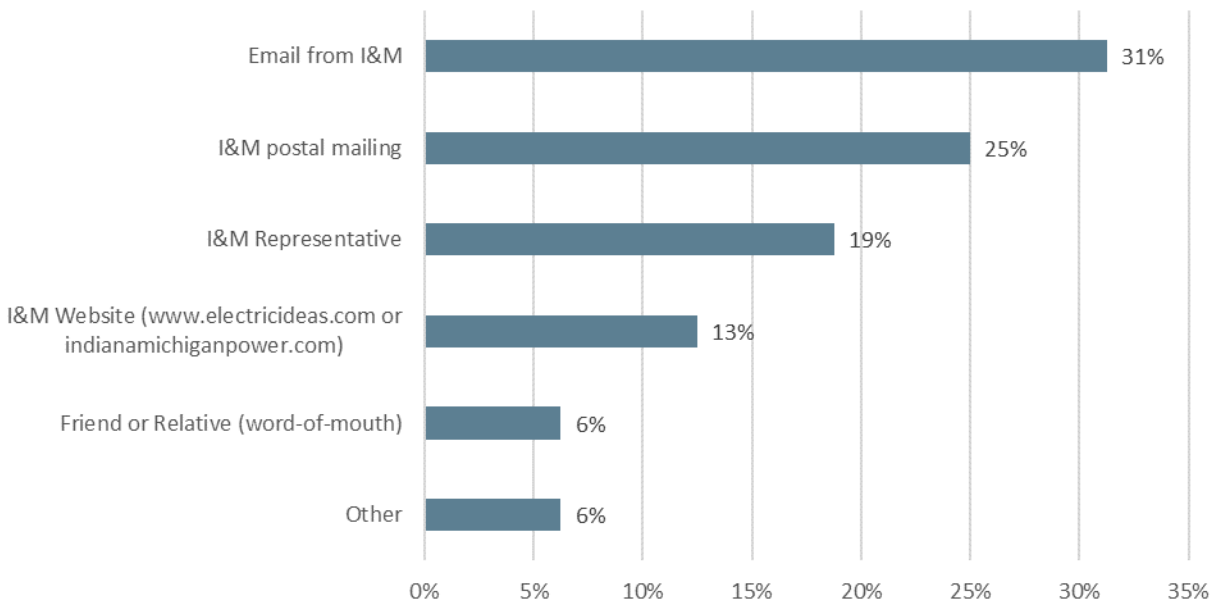
3.5.1.2.6. Verification Procedures

SEEL performs quality control and field verification inspections of completed contractor work. Additionally, pre- and post-installation photos are taken and reviewed.

3.5.1.3. In-Home Participant Survey Results

I&M marketing efforts drove participation in the Income Qualified Weatherproofing Program. I&M primarily marketed the program through emails, mailings, and providing information on its website. Collectively, 69% of respondents first learned of the program through one of these means (see Figure 3-1). Emails and mailings were more frequently reported to be the initial source of awareness than the website. An I&M representative was another common way participants learned of the program.

Figure 3-1 Initial Source of Awareness (n = 17)



Saving energy, making the home more comfortable, and wanting to better understand the condition of their home were the most common motivations for participating in the home energy checkup (see Table 3-17). Relatedly, 24% were concerned about a specific issue with their home.

Table 3-17 Motivations for Getting the Energy Checkup

<i>Reason for Having Checkup Done</i>	<i>Percent of Respondents (n = 17)</i>
Save energy to save money	88%
Wanted to make my home more comfortable	53%
Wanted to better understand the condition of my home	41%
Concerned about a specific issue(s) in my home	24%
Required to receive the home improvements	18%
Save energy to protect the environment	18%
Recommended by friend or family	12%

Participants raised concerns about their experience with the home energy checkup. As shown in Figure 3-2, 31% of respondents were very dissatisfied (25%) or somewhat dissatisfied (6%) with the home energy checkup. Additionally, 19% were dissatisfied with the quality of work performed. While two-thirds of respondents thought the information provided through the home energy checkup provided useful information, one-third did not think it provided useful information (see Figure 3-3). In open-ended comments, respondents said their concerns were that they had not received the report or results, had issues with the scheduling of the checkup, or stated that there was not any follow-up after the checkup. Relatedly, a small share of respondents, 33%, reported that they received a report or recommendations based on the energy assessment (Table 3-18).

Program staff noted that the program has faced labor constraints during its initial year, and these constraints have resulted in challenges in implementing the program.

Despite the respondents' concerns, it is also worth noting that more participants, 63%, were satisfied with the program than were dissatisfied (discussed below).

Figure 3-2 Satisfaction with the Energy Checkup

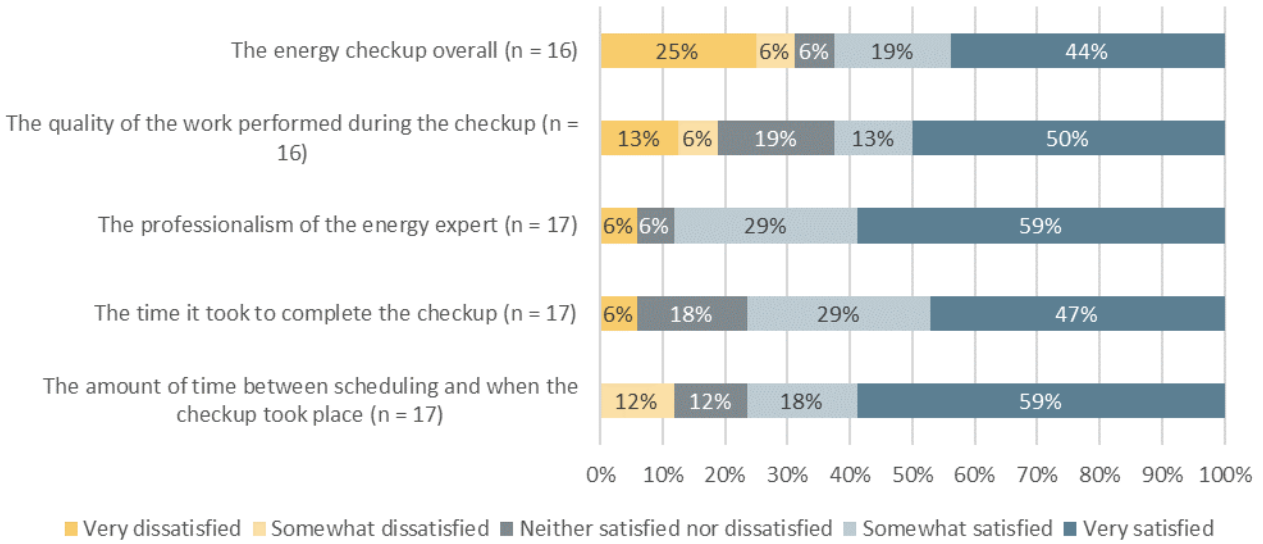
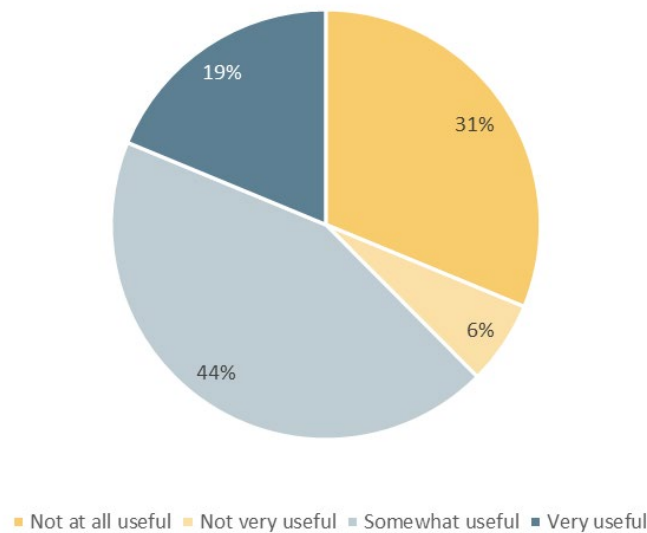


Table 3-18 Home Checkup Experience

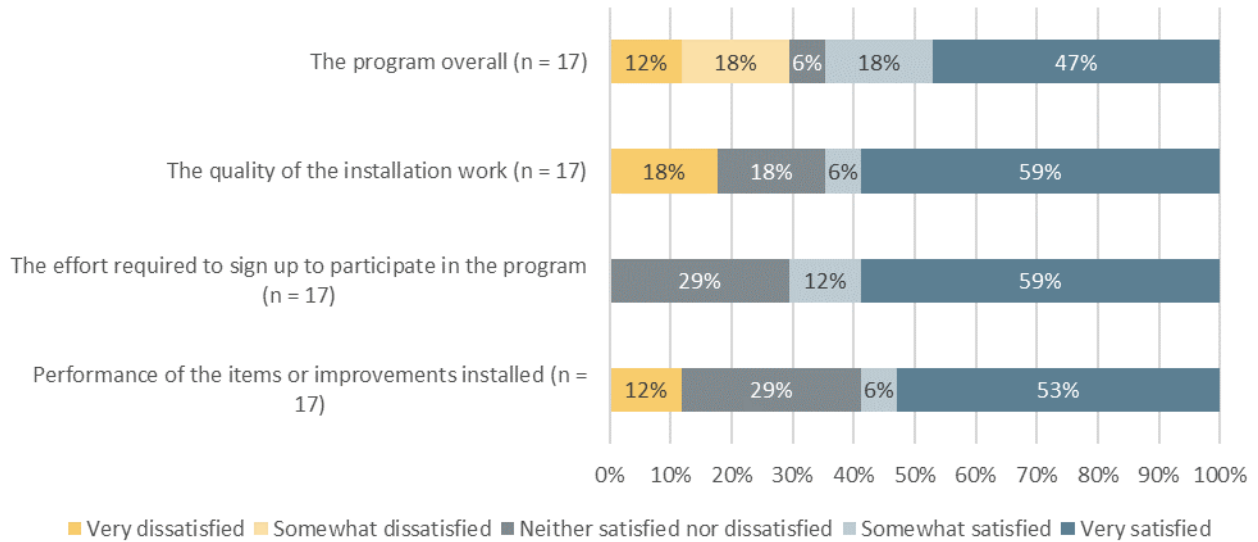
Home Checkup Experience	Percent of Respondents
The energy expert asked about concerns (n = 15)	73%
Received a report or recommendations for making home more efficient (n = 12)	33%

Figure 3-3 How Useful was the Information from the Home Energy Checkup (n = 16)



Participant satisfaction with the program was mixed. Approximately two-thirds of respondents stated that they were satisfied with the program overall and a third were dissatisfied with it. Item performance and the quality of installation work were the areas that respondents were most likely to be dissatisfied with.

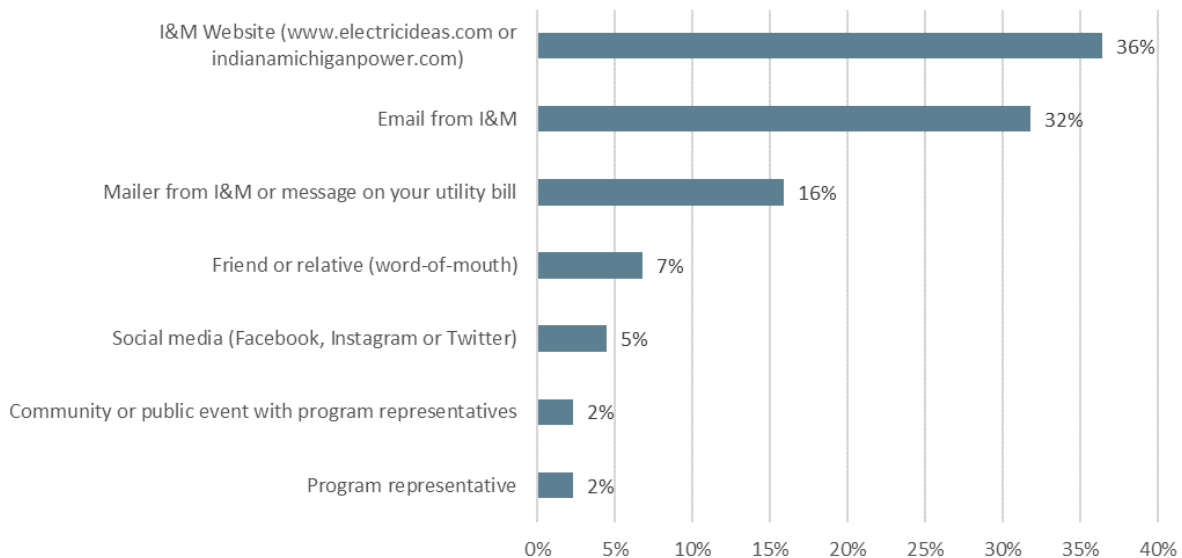
Figure 3-4 Program Satisfaction



3.5.1.4. Virtual Audit Participant Survey Results

The program website and email communications from I&M drove initial program awareness. Sixty-eight percent of respondents reported that they learned of the program through these two sources. Another 16% reported that they learned of the program from an I&M mailer.

Figure 3-5 Initial Source of Program Awareness



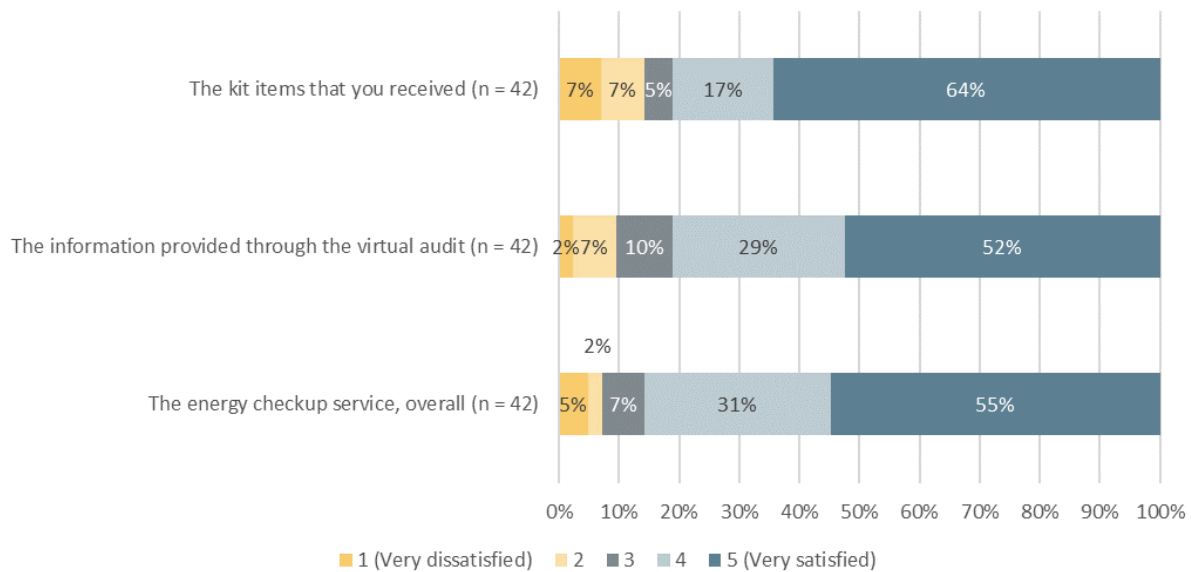
Nearly all participants thought that it was easy or very easy to sign up for the virtual audit. Seventy-seven percent of respondents reported that it was very easy to sign up and 21% said that it was somewhat easy to sign up.

Table 3-19 Ease of Signing up for Virtual Audit

How easy or difficult was it to sign up for the program?	Number of Respondents (n = 44)
Very easy	77%
Somewhat easy	21%
Somewhat difficult	2%
Very difficult	0%

Most participants in the virtual audit component were satisfied with it. Eighty-six percent were somewhat or very satisfied with the service. Seven percent were dissatisfied with the program overall. Satisfaction was lower with the kit items – 14% reported that they were dissatisfied with the items received. The reasons customers gave for their dissatisfaction were that they did not understand how to use the power strip, that they did not receive a kit, and that they did not get a report of the audit findings.

Figure 3-6 Satisfaction with Virtual Audit



3.6. Findings and Recommendations

The program marketing and design are intended to efficiently use resources by aligning the costs of the service provided with the energy savings potential. Alignment of program resources and savings potential is accomplished through targeting marketing towards households that energy-use analysis identifies as likely to have electric heating and through the use of virtual audits instead of in-home audits for homes with non-electric heating. This approach focuses more

expensive in-home audits on homes that are more likely to lead to cost-effective deeper retrofits. During the year, 10% of the participating homes received additional improvements beyond the direct install and virtual verification kit measure and I&M noted that contractor availability had constrained program activity.

I&M partners with community action agencies (CCAs) to facilitate weatherization and health and safety improvements. I&M supports work done by community action agencies on behalf of I&M customers. Examples of this collaboration during PY2022 include collaborations with Brightpoint and Jobsource to complete weatherization work on audited homes and to make additional health and safety improvements with funding from the Indiana Community Action Association.

In-home assessment participant satisfaction with the program was mixed. Approximately two-thirds of respondents stated that they were satisfied with the program overall and a third were dissatisfied with it. Item performance and the quality of installation work were the areas that respondents were most likely to be dissatisfied with. Similarly, one-third of participants reported that they were somewhat or very dissatisfied with the in-home assessment. Comments provided by survey respondents indicate that the main issues were with not receiving report results (33% reported that they received a report or recommendations), lack of follow-up after the assessment that the assessor said would occur, and issues with scheduling the visit. Some of these concerns may reflect challenges in finding sufficient staff to deliver the in-home assessments and may be resolved during PY2023.

- **Recommendation 1:** Review communication protocols with program participants to ensure that all participants receive the results of the assessment and a clear statement on whether or not they qualify for additional home energy improvements.

Most participants in the virtual audit component were satisfied with it. Eighty-six percent were somewhat or very satisfied with the service. Seven percent were dissatisfied with the program overall. Satisfaction was lower with the kit items – 14% reported that they were dissatisfied with the items received. The reasons customers gave for their dissatisfaction were that they did not understand how to use the power strip, that they did not receive a kit, and that they did not get a report of the audit findings.

The in-service rate for advanced power strips may have been adversely impacted due to the item being left for customers to install without directions on how to install the measure. The measure in-service rate was adversely impacted because reported that nothing was installed in the switched or controlled outlets. Additionally, one participant commented that they did not know how to install the device.

- **Recommendation 2a:** Leverage the presence of the energy auditor by having them install the advanced power strip for customers to improve the rate at which the devices are properly used to generate energy savings.
- **Recommendation 2b:** Either instead of direct installation of the power strip or in addition, the program should provide instructions to customers on how to install the device. The

instructions could include examples of a typical entertainment center setup and a typical office setup to increase the correct use of the device.

4. Home Energy Products

This chapter presents the results of the impact and process evaluations of the 2022 Home Energy Products Program that Indiana Michigan Power (I&M) offered to its residential customers during the period of January 2022 through December 2022.

The objectives of the evaluation were to:

- Assess gross and net energy (kWh) savings and peak demand (kW) reductions resulting from participation in the program during the program year;
- Perform a review of the new midstream program component processes; and
- Provide recommendations for program improvement.

4.1. Program Description

The Home Energy Products Program aims to increase customer awareness and uptake for energy-efficient products. The program provides:

- Cash-back rebates designed to cover a portion of the incremental cost of upgrading to efficient technologies;
- Incentives to distributors with a customer pass-through requirement to encourage stocking of efficient HVAC equipment and to cover a portion of the incremental cost of the efficient equipment, and
- Instant rebates through the I&M marketplace on energy-saving household items.

The objectives of the program include lowering electric consumption in the residential market sector through the purchase and installation of eligible energy efficiency measures and attributing electric energy savings to those purchases that receive a rebate or upstream incentive through the program, educating residential customers regarding the opportunities to decrease their overall energy consumption, and encouraging equipment distributors, vendors, and contractors to actively market eligible energy efficient technologies to residential customers.

Between January 1, 2022 and June 14, 2022, the Home Energy Products Program provided cash-back rebates to residential customers who upgrade to more efficient HVAC products such as air conditioners and heat pumps (central split systems or mini-split ductless units). After June 15, 2022, the program offered midstream discounts through participating distributors and discontinued the HVAC rebates. Midstream discounts were provided for the following measures:

- Central air conditioners (SEER 16 +);
- Mini splits (SEER 19 +, 9.5 + HSPF);
- Heat pumps (SEER 16 +);
- Heat pump water heaters (2.0 EF); and
- Geothermal heat pump (17.1 + and 3.6 + COP)

The program also provides rebates on energy-efficient appliances. The rebated measures were:

- Wi-Fi Programmable Thermostats;
- Smart Thermostats;
- Efficient Electric Resistance Water Heaters;
- Dehumidifiers;
- Electronically Commutated Furnace Fan Motors (ECMs); and
- Variable Speed Pool Pumps.

Through I&M’s Marketplace I&M customers can purchase energy-efficient products and receive an instant rebate on the following measures:

- Air Purifiers;
- Advanced Power Strips;
- Smart Thermostats;
- Faucet Aerators; and
- Showerheads

4.2. Data Collection

4.2.1. Participant Survey

ADM completed two surveys of program participants to collect data to:

- Verify the rebated equipment was installed and estimate gross savings; and
- Estimate net savings.

The surveys were administered to customers that participated in the appliance/HVAC component of the program, and those that purchased energy-saving items through I&M’s online energy marketplace.

The sample size requirement was calculated to meet 90% confidence and 10% precision (90/10). To determine the minimum sample size needed to meet this precision requirement, ADM assumed a CV of .5, as is typically used in residential program evaluations. The sample size requirement was estimated using the following formula:

$$n_0 = \left(\frac{1.645 * CV}{TP} \right)^2$$

Where,

1.645 = Z Score for 90% confidence interval in a normal distribution

CV = Coefficient of Variation

TP = Targeted Precision, 10% in this evaluation

With 10% targeted precision (TP), this called for a minimum sample of 68 participants.

Table 4-1 summarizes data collection activities for the Home Energy Products Program evaluation.

Table 4-1 Summary of Data Collection Activities for the Home Energy Products Program

<i>Survey</i>	<i>Mode</i>	<i>Time Frame</i>	<i>Number of Contacts</i>	<i>Number of Completions</i>
Home Energy Products – Online Marketplace Purchaser Survey	Email	January 2023	1,096	146
Home Energy Products – Products Component Participant Survey	Email	December 2022	383	36

4.3. Estimation of Ex Post Gross Savings

The following section presents the methodology used to estimate the PY2022 gross energy and demand impacts resulting from the Home Energy Products Program.

4.3.1. Methodology for Estimating Ex Post Gross Energy Savings – Efficient Products Component

The M&V approach for the Home Energy Products Program focused on determining the following:

- Number of appliances and products rebated and sold through the program;
- Average annual energy savings per purchased appliance; and
- Average kW reduction per purchased appliance.

4.3.1.1. Review of Documentation

ADM reviewed data tracking systems associated with the program to ensure that the data provided sufficient information to identify unique customers for surveying and to calculate energy and demand impacts in accordance with the savings calculation source defined in Section 4.3.1.2 below. ADM further reviewed the program data to verify that the fields required for performing the evaluation were tracked and populated (i.e., the data was not missing) and that the values were reasonable. ADM took these steps to verify the number of products rebated:

- Validating program tracking data by checking for duplicate or erroneous entries;
- Conducting verification surveys with a sample of program participants to verify that customers listed in the program tracking database did indeed participate, that the number of appliances claimed to be rebated was accurate, and that appliances were rebated according to the process I&M had in place.

4.3.1.2. Procedures for Estimating Measure-Level Gross Energy Savings

Table 4-2 presents information on savings calculation formulas, savings calculation inputs, incremental cost, and effective useful life values and data sources applicable to the Home Energy Products Program.

Table 4-2 Home Energy Products Program Calculation Input Information

<i>Variable Type</i>	<i>Variable Name</i>	<i>Variable Value</i>	<i>Variable Value Source</i>
Measure Name: Ductless Heat Pump Displacement			
Savings - 1	<i>ΔkWh Baseline 1</i>		$\begin{aligned} &(((\text{Capacity_heat} / \text{HSPF_base}) - (\text{Capacity_heat} / \text{HSPF_ee})) / 1000 * \text{EFLH_heat} * \text{HLAF}) + \\ &(((\text{Capacity_cool} / \text{SEER_base}) - (\text{Capacity_cool} / \text{SEER_ee})) / 1000 * \text{EFLH_cool} * \text{CLAF}) + \\ &(((\text{Capacity_heat} / \text{HSPF_exist}) - (\text{Capacity_heat} / \text{HSPF_base})) / 1000 * \text{ER_factor} * \text{EFLH_heat} * \\ &\text{HLAF}) + (((\text{Capacity_cool} / \text{SEER_exist}) - (\text{Capacity_cool} / \text{SEER_base})) / 1000 * \text{ER_factor} * \\ &\text{EFLH_cool} * \text{CLAF}) \end{aligned}$
Savings - 2	<i>ΔkW Baseline 1</i>		$(\text{Capacity_cool} * ((1 / \text{EER_base}) - (1 / \text{EER_ee}))) / 1000 * \text{CF} + (\text{ER_factor} * \text{Early Replacement Incremental kW Savings})$
Savings - 2	<i>ΔkWh (Baseline 2)</i>		$\begin{aligned} &((\text{CLAF} * \text{Capacity_heat} * \text{EFLH_heat} * ((1 / \text{HSPF_base}) - (1 / \text{HSPF_ee})) / 1000) + \\ &((\text{Capacity_cool} * \text{EFLH_cool} * ((1 / \text{SEER_base}) - (1 / \text{SEER_ee})) / 1000)) \end{aligned}$
Savings - 2	<i>ΔkW (Baseline 2)</i>		$(\text{Capacity_cool} * ((1 / \text{EER_base}) - (1 / \text{EER_ee}))) / 1000 * \text{CF}$
Input	<i>Capacity_cool</i>	Varies	Tracking data.
Input	<i>EFLH_cool</i>	Varies	Indiana TRM V2.2, p. 104.
Input	<i>SEER_exist</i>	11.15	Indiana TRM V2.2, p. 104.
Input	<i>SEER_base</i>	14	Federal appliance standard.
Input	<i>SEER_ee</i>	Varies	AHRI. Characteristics of applicable equipment.
Input	<i>EER_exist</i>	Varies	Indiana TRM V2.2, p. 105.
Input	<i>EER_base</i>	11.7	Federal appliance standard.
Input	<i>EER_ee</i>	Varies	AHRI. Characteristics of applicable equipment.
Input	<i>Capacity_heat</i>	Varies	Tracking data.
Input	<i>EFLH_heat</i>	Varies	Indiana TRM V2.2, p. 104.
Input	<i>HSPF_exist</i>	3.412	Tracking data.
Input	<i>HSPF_base</i>	8.2	Federal appliance standard.
Input	<i>HSPF_ee</i>	Varies	AHRI. Characteristics of applicable equipment.
Input	<i>CF</i>	Varies	Indiana TRM V2.2, p. 105.
Input	<i>CLAF</i>	Varies	Cooling load adjustment factor, based on analysis of baseline energy usage data. Value is less than or equal to 1.
Input	<i>HLAF</i>	Varies	Heating load adjustment factor, based on analysis of baseline energy usage data. Value is less than or equal to 1.
Input	<i>ER_factor</i>	Varies	Based on analysis of survey responses.
EUL - 1		5	Indiana TRM V2.2, p. 102-103.

Variable Type	Variable Name	Variable Value	Variable Value Source
EUL - 2		13	Indiana TRM V2.2, p. 102-103.
Inc Cost		Varies	Illinois TRM V10.0 Vol. 3, p. 154-155.
Measure Name: Ductless Heat Pump Replacement			
Savings - 1	ΔkWh Baseline 1		$\left(\frac{Capacity_heat}{HSPF_base} - \frac{Capacity_heat}{HSPF_ee} \right) / 1000 * EFLH_heat * HLAF + \left(\frac{Capacity_cool}{SEER_base} - \frac{Capacity_cool}{SEER_ee} \right) / 1000 * EFLH_cool * CLAF + \left(\frac{Capacity_heat}{HSPF_base} - \frac{Capacity_heat}{HSPF_exist} \right) / 1000 * ER_factor * EFLH_heat * HLAF + \left(\frac{Capacity_cool}{SEER_base} - \frac{Capacity_cool}{SEER_exist} \right) / 1000 * ER_factor * EFLH_cool * CLAF$
Savings - 2	ΔkW Baseline 1		$\left(\frac{Capacity_cool * ((1 / EER_base) - (1 / EER_ee))}{1000 * CF} + (ER_factor * Early\ Replacement\ Incremental\ kW\ Savings) \right)$
Savings - 2	ΔkWh (Baseline 2)		$\left(CLAF * Capacity_heat * EFLH_heat * \left(\frac{1}{HSPF_base} - \frac{1}{HSPF_ee} \right) / 1000 \right) + \left(\frac{Capacity_cool * EFLH_cool * \left(\frac{1}{SEER_base} - \frac{1}{SEER_ee} \right)}{1000} \right)$
Savings - 2	ΔkW (Baseline 2)		$\frac{Capacity_cool * ((1 / EER_base) - (1 / EER_ee))}{1000 * CF}$
Input	Capacity_cool	Varies	Tracking data.
Input	EFLH_cool	Varies	Indiana TRM V2.2, p. 104.
Input	SEER_exist	11.15	Indiana TRM V2.2, p. 104.
Input	SEER_base	14	Federal appliance standard.
Input	SEER_ee	Varies	AHRI. Characteristics of applicable equipment.
Input	EER_exist	Varies	Indiana TRM V2.2, p. 105.
Input	EER_base	11.7	Federal appliance standard.
Input	EER_ee	Varies	AHRI. Characteristics of applicable equipment.
Input	Capacity_heat	Varies	Tracking data.
Input	EFLH_heat	Varies	Indiana TRM V2.2, p. 104.
Input	HSPF_exist	7.7	Indiana TRM V2.2, p. 104.
Input	HSPF_base	8.2	Federal appliance standard.
Input	HSPF_ee	Varies	AHRI. Characteristics of applicable equipment.
Input	CF	Varies	Indiana TRM V2.2, p. 105.
Input	CLAF	Varies	Cooling load adjustment factor, based on analysis of baseline energy usage data. Value is less than or equal to 1.
Input	HLAF	Varies	Heating load adjustment factor, based on analysis of baseline energy usage data. Value is less than or equal to 1.
Input	ER_factor	Varies	Based on analysis of survey responses.
Measure Name: Air Source Heat Pump			
Savings - 1	ΔkWh Baseline 1		$\left(\frac{Capacity_heat}{HSPF_base} - \frac{Capacity_heat}{HSPF_ee} \right) / 1000 * EFLH_heat * HLAF + \left(\frac{Capacity_cool}{SEER_base} - \frac{Capacity_cool}{SEER_ee} \right) / 1000 * EFLH_cool * CLAF + \left(\frac{Capacity_heat}{HSPF_base} - \frac{Capacity_heat}{HSPF_exist} \right) / 1000 * ER_factor * EFLH_heat * HLAF + \left(\frac{Capacity_cool}{SEER_base} - \frac{Capacity_cool}{SEER_exist} \right) / 1000 * ER_factor * EFLH_cool * CLAF$

Variable Type	Variable Name	Variable Value	Variable Value Source
			$(Capacity_cool / SEER_base) / 1000 * ER_factor * EFLH_cool * CLAF$
Savings - 2	ΔkW Baseline 1		$(Capacity_cool * ((1 / EER_base) - (1 / EER_ee))) / 1000 * CF + (ER_factor * Early Replacement Incremental kW Savings)$
Savings - 2	ΔkWh (Baseline 2)		$((CLAF * Capacity_heat * EFLH_heat * ((1 / HSPF_base) - (1 / HSPF_ee)) / 1000) + ((Capacity_cool * EFLH_cool * ((1 / SEER_base) - (1 / SEER_ee)) / 1000))$
Savings - 2	ΔkW (Baseline 2)		$(Capacity_cool * ((1 / EER_base) - (1 / EER_ee))) / 1000 * CF$
Input	Capacity_cool	Varies	Tracking data.
Input	EFLH_cool	Varies	Indiana TRM V2.2, p. 104.
Input	SEER_exist	11.15	Indiana TRM V2.2, p. 104.
Input	SEER_base	14	Federal appliance standard.
Input	SEER_ee	Varies	AHRI. Characteristics of applicable equipment.
Input	EER_exist	Varies	Indiana TRM V2.2, p. 105.
Input	EER_base	11.7	Federal appliance standard.
Input	EER_ee	Varies	AHRI. Characteristics of applicable equipment.
Input	Capacity_heat	Varies	Tracking data.
Input	EFLH_heat	Varies	Indiana TRM V2.2, p. 104.
Input	HSPF_exist	7.7	Indiana TRM V2.2, p. 104.
Input	HSPF_base	8.2	Federal appliance standard.
Input	HSPF_ee	Varies	AHRI. Characteristics of applicable equipment.
Input	CF	Varies	Indiana TRM V2.2, p. 105.
Input	CLAF	Varies	Cooling load adjustment factor, based on analysis of baseline energy usage data. Value is less than or equal to 1.
Input	HLAF	Varies	Heating load adjustment factor, based on analysis of baseline energy usage data. Value is less than or equal to 1.
Input	ER_factor	Varies	Based on analysis of survey responses.
EUL - 1		5	Indiana TRM V2.2, p. 102-103.
EUL - 2		13	Indiana TRM V2.2, p. 102-103.
Inc Cost		Varies	Illinois TRM V10.0 Vol. 3, p. 73.
Measure Name: Heat Pump Water Heater			
Savings	ΔkWh		$(1 / UEF_base - 1 / UEF_new) * GPD * Household * 365.25 * \gamma_{Water} * ((Temp_out - Temp_in) / 3412) + kWh_cooling - kWh_heating$
Savings	ΔkW		$IFERROR(((1 / UEF_base - 1 / UEF_new) * GPD * Household * 365.25 * \gamma_{Water} * ((Temp_out - Temp_in) / 3412) + kWh_cooling - kWh_heating) / Hours * CF, 0)$
Input	UEF_base	Varies	Federal appliance standard.

Variable Type	Variable Name	Variable Value	Variable Value Source
Input	UEF_new	Varies	Tracking data. Characteristics of applicable equipment.
Input	GPD	Varies	Illinois TRM 10.0 Vol. 3, p. 217.
Input	γ Water	8.33	Illinois TRM 10.0 Vol. 3, p. 217.
Input	kWh_cooling	Varies	Indiana TRM V2.2, p. 65.
Input	kWh_heating	Varies	Indiana TRM V2.2, p. 65. Based on heating type.
Input	Hours	Varies	Indiana TRM V2.2, p. 66.
Input	CF	0.346	Indiana TRM V2.2, p. 66.
Input	Heat Type	Varies	Based on review of tracking data
Input	Household	Varies	Illinois TRM 10.0 Vol. 3, p. 217. Varies based on household type.
Input	Temp_in	Varies	Indiana TRM V2.2, p. 71. Varies by location.
Input	Temp_out	Varies	Illinois TRM 10.0 Vol. 3, p. 217.
EUL		10	Indiana TRM V2.2, p. 64.
Inc Cost		\$ 700.00	Indiana TRM V2.2, p. 64.
Measure Name: Electric Resistance Water Heater			
Savings	ΔkWh		$IFERROR((1 / UEF_base - 1 / UEF_new) * GPD * Household * 365.25 * \gamma Water * ((Temp_out - Temp_in) / 3412) + kWh_cooling - kWh_heating, 0)$
Savings	ΔkW		$IFERROR(((1 / UEF_base - 1 / UEF_new) * GPD * Household * 365.25 * \gamma Water * ((Temp_out - Temp_in) / 3412) + kWh_cooling - kWh_heating) / Hours * CF, 0)$
Input	UEF_base	Varies	Federal appliance standard.
Input	UEF_new	Varies	Tracking data. Characteristics of applicable equipment.
Input	GPD	Varies	Illinois TRM 10.0 Vol. 3, p. 217.
Input	γ Water	8.33	Illinois TRM 10.0 Vol. 3, p. 217.
Input	kWh_cooling	Varies	Indiana TRM V2.2, p. 65.
Input	kWh_heating	Varies	Indiana TRM V2.2, p. 65. Based on heating type.
Input	Hours	Varies	Indiana TRM V2.2, p. 66.
Input	CF	0.346	Indiana TRM V2.2, p. 66.
Input	Heat Type	Varies	Based on review of tracking data
Input	Household	Varies	Illinois TRM 10.0 Vol. 3, p. 217. Varies based on household type.
Input	Temp_in	Varies	Indiana TRM V2.2, p. 71. Varies by location.
Input	Temp_out	Varies	Illinois TRM 10.0 Vol. 3, p. 217.
EUL		10	Indiana TRM V2.2, p. 64.
Inc Cost		\$ 50.00	Incentive amount (assumption).
Measure Name: ECM Fan Motor			
Savings	ΔkWh		kWh_savings
Savings	ΔkW		kW_savings
Input	kWh_savings	415	Indiana TRM V2.2, p. 114.

Variable Type	Variable Name	Variable Value	Variable Value Source
Input	<i>kW_savings</i>	0	Indiana TRM V2.2, p. 115.
EUL		10	Indiana TRM V2.2, p. 114.
Inc Cost		\$ 250.00	Indiana TRM V2.2, p. 114.
Measure Name: Wi-Fi Smart Thermostat			
Savings	<i>ΔkWh</i>		$(1 / SEER * EFLH_cool * Btuh_cool / 1000 * ESF_cool * Cooling_Savings_Adjustment_Factor) + IF(Electric_Heating=1, (EFLH_heat * Btuh_heat / COP / 3412 * ESF_heat * Heating_Savings_Adjustment_Factor), 0)$
Savings	<i>ΔkW</i>		0
Input	<i>SEER</i>	Varies	Program tracking data.
Input	<i>EFLH_cool</i>	Varies	Indiana TRM V2.2, p. 121.
Input	<i>Btuh_cool</i>	Varies	Program tracking data.
Input	<i>ESF_cool</i>	Varies	Indiana TRM V2.2, p. 122 if replace manual thermostat. Illinois TRM 9.0 Vol. 3, p. 179 if replacing programmable thermostat.
Input	<i>Cooling_Savings_Adjustment_Factor</i>	Varies	Rate of cooling.
Input	<i>EFLH_heat</i>	Varies	Indiana TRM V2.2, p. 122.
Input	<i>Btuh_heat</i>	Varies	Program tracking data.
Input	<i>COP</i>	Varies	Program tracking data.
Input	<i>ESF_heat</i>	Varies	Indiana TRM V2.2, p. 123 if replace manual thermostat. Illinois TRM 9.0 Vol. 3, p. 177 if replacing programmable thermostat.
Input	<i>Heating_Savings_Adjustment_Factor</i>	Varies	Rate of electric heating.
Input	<i>Electric_Heating</i>	Varies	Tracking data review. Equals 1 if electrically heated, 0 if not.
EUL		15	Indiana TRM V2.2, p. 120.
Inc Cost		\$ 250.00	Indiana TRM V2.2, p. 120.
Measure Name: Dehumidifier			
Savings	<i>ΔkWh</i>		$Pints_per_Day * 0.473 / 24 * HOU * ((1 / L_kWh_base) - (1 / L_kWh_EE))$
Savings	<i>ΔkW</i>		$(Pints_per_Day * 0.473 / 24 * HOU * ((1 / L_kWh_base) - (1 / L_kWh_EE))) / HOU * CF$
Input	<i>HOU</i>	1620	Indiana TRM V2.2, p. 23.
Input	<i>L_kWh_base</i>	Varies	Federal appliance standard. Based on unit capacity.
Input	<i>L_kWh_EE</i>	Varies	Characteristics of applicable equipment.
Input	<i>Pints_per_Day</i>	Varies	Characteristics of applicable equipment.
Input	<i>CF</i>	0.37	Indiana TRM V2.2, p. 24.
EUL		12	Indiana TRM V2.2, p. 23.
Inc Cost		\$ 45.00	Indiana TRM V2.2, p. 23.
Measure Name: Variable Speed Pool Pump			

Variable Type	Variable Name	Variable Value	Variable Value Source
Savings	ΔkWh		$(hp * LF * 0.746) / \eta PUMP * Hrs_day * Days_yr * ESF$
Savings	ΔkW		$(hp * LF * 0.746) / \eta PUMP * CF * DSF$
Input	hp	Varies	Characteristics of applicable equipment.
Input	LF	0.66	Indiana TRM V2.2, p. 147.
Input	$\eta PUMP$	0.325	Indiana TRM V2.2, p. 147.
Input	Hrs_day	6	Indiana TRM V2.2, p. 147.
Input	$Days_yr$	100	Indiana TRM V2.2, p. 147.
Input	ESF	Varies	Indiana TRM V2.2, p. 147. Based on pump type.
Input	CF	Varies	Indiana TRM V2.2, p. 148.
Input	DSF	Varies	Indiana TRM V2.2, p. 148. Based on pump type.
EUL		10	Indiana TRM V2.2, p. 146.
Inc Cost		Varies	Indiana TRM V2.2, p. 146. Based on pump type.
Measure Name: Ground Source Heat Pump			
Savings	ΔkWh		$(EFLH_cool * Capacity_cool * ((1 / SEER_base) - (1 / (EER_ee * 1.02))) / 1000) + (EFLH_heat * Capacity_heat * ((1 / HSPF_base) - (1 / (COP_ee * 3.412))) / 1000)$
Savings	ΔkW		$(Capacity_cool * CF * ((1 / EER_base) - (1 / (EER_ee * 1.02 * 0.37 + 6.43))) / 1000)$
Input	$Capacity_cool$	Varies	AHRI. Characteristics of applicable equipment.
Input	$EFLH_cool$	Varies	Indiana TRM V2.2, p. 111.
Input	$SEER_base$	14	Federal appliance standard.
Input	EER_base	11.7	Federal appliance standard.
Input	EER_ee	Varies	AHRI. Characteristics of applicable equipment.
Input	$Capacity_heat$	Varies	AHRI. Characteristics of applicable equipment.
Input	$EFLH_heat$	Varies	Indiana TRM V2.2, p. 112.
Input	$HSPF_base$	8.2	Federal appliance standard.
Input	COP_ee	Varies	AHRI. Characteristics of applicable equipment.
Input	CF	0.88	Indiana TRM V2.2, p. 113.
EUL		18	Indiana TRM V2.2, p. 111.
Inc Cost		Varies	Illinois TRM V9.0 Vol. 3, p. 127
Measure Name: Bathroom Aerator			
Savings	ΔkWh		$((GPMbase - GPMlow) * MPD * (PH / FH) * DR * 8.3 * (Tmix - Tin) * 365) / (RE * 3412)$
Savings	ΔkW		$((GPMbase - GPMlow) * 60 * DR * 8.3 * (Tmix - Tin) * CF) / (RE * 3412)$
Input	$GPMbase$	1.9	Indiana TRM V2.2, p. 69.
Input	$GPMlow$	Varies	Characteristics of applicable equipment.
Input	MPD	1.6	Indiana TRM V2.2, p. 69.
Input	PH	Varies	Indiana TRM V2.2, p. 69. Varies based on housing type.
Input	FH	Varies	Indiana TRM V2.2, p. 69. Varies based on installation location and housing type.

<i>Variable Type</i>	<i>Variable Name</i>	<i>Variable Value</i>	<i>Variable Value Source</i>
Input	<i>DR</i>	Varies	Indiana TRM V2.2, p. 70
Input	<i>Tmix</i>	Varies	Indiana TRM V2.2, p. 70
Input	<i>Tin</i>	Varies	Area-specific value, Indiana TRM V2.2
Input	<i>CF</i>	Varies	Indiana TRM V2.2, p. 71.
Input	<i>RE</i>	0.98	Indiana TRM V2.2, p. 71.
EUL		10	Indiana TRM V2.2, p. 68.
Inc Cost		\$ -	Accounted for in program cost.
Measure Name: Kitchen Aerator			
Savings	ΔkWh		$((GPM_{base} - GPM_{low}) * MPD * (PH / FH) * DR * 8.3 * (T_{mix} - T_{in}) * 365) / (RE * 3412)$
Savings	ΔkW		$((GPM_{base} - GPM_{low}) * 60 * DR * 8.3 * (T_{mix} - T_{in}) * CF) / (RE * 3412)$
Input	<i>GPMbase</i>	1.9	Indiana TRM V2.2, p. 69.
Input	<i>GPMlow</i>	Varies	Characteristics of applicable equipment.
Input	<i>MPD</i>	1.6	Indiana TRM V2.2, p. 69.
Input	<i>PH</i>	Varies	Indiana TRM V2.2, p. 69. Varies based on housing type.
Input	<i>FH</i>	Varies	Indiana TRM V2.2, p. 69. Varies based on installation location and housing type.
Input	<i>DR</i>	Varies	Indiana TRM V2.2, p. 70
Input	<i>Tmix</i>	Varies	Indiana TRM V2.2, p. 70
Input	<i>Tin</i>	Varies	Area-specific value, Indiana TRM V2.2
Input	<i>CF</i>	Varies	Indiana TRM V2.2, p. 71.
Input	<i>RE</i>	0.98	Indiana TRM V2.2, p. 71.
EUL		10	Indiana TRM V2.2, p. 68.
Inc Cost		\$ -	Accounted for in program cost.
Measure Name: Shower Head			
Savings	ΔkWh		$((GPM_{base} - GPM_{low}) * MS * SPD * (PH / SH) * 8.3 * (T_{mix} - T_{in}) * 365) / (RE * 3412)$
Savings	ΔkW		$((GPM_{base} - GPM_{low}) * 60 * 8.3 * (T_{mix} - T_{in}) * CF) / (RE * 3412)$
Input	<i>GPMbase</i>	2.63	Indiana TRM V2.2, p. 74.
Input	<i>GPMlow</i>	1.5	Characteristics of applicable equipment.
Input	<i>MS</i>	7.8	Indiana TRM V2.2, p. 74.
Input	<i>SPD</i>	0.6	Indiana TRM V2.2, p. 74.
Input	<i>PH</i>	Varies	Indiana TRM V2.2, p. 74. Varies based on housing type.
Input	<i>SH</i>	Varies	Indiana TRM V2.2, p. 74. Varies based on housing type.
Input	<i>Tmix</i>	101	Indiana TRM V2.2, p. 75.
Input	<i>Tin</i>	Varies	Indiana TRM V2.2, p. 75. Varies based on climate zone.
Input	<i>RE</i>	0.98	Indiana TRM V2.2, p. 75.

<i>Variable Type</i>	<i>Variable Name</i>	<i>Variable Value</i>	<i>Variable Value Source</i>
Input	<i>CF</i>	0.0023	Indiana TRM V2.2, p. 75. Varies based on climate zone.
EUL		10	Indiana TRM V2.2, p. 73.
Inc Cost		\$ -	Accounted for in program cost.
Measure Name: Advanced Power Strip			
Savings	ΔkWh		<i>kWh</i>
Savings	ΔkW		<i>kWh / Hours * CF</i>
Input	<i>kWh</i>	Varies	Illinois TRM 10.0 Vol. 3, p. 64. Varies based on number of plugs.
Input	<i>Number_of_Plugs</i>	Varies	Tracking data.
Input	<i>Hours</i>	7129	Illinois TRM 10.0 Vol. 3, p. 65. Varies based on number of plugs.
Input	<i>CF</i>	0.8	Illinois TRM 10.0 Vol. 3, p. 65. Varies based on number of plugs.
EUL		7	Illinois TRM 10.0 Vol. 3, p. 63.
Inc Cost		Varies	Cost of measure accounted for by program costs.
Measure Name: Air Purifier			
Savings	ΔkWh		<i>ΔkWh</i>
Savings	ΔkW		<i>ΔkWh / Hours * CF</i>
Input	ΔkWh	Varies	Mid-Atlantic TRM V10.0, p. 189.
Input	<i>Hours</i>	5840	Mid-Atlantic TRM V10.0, p. 189.
Input	<i>CF</i>	0.67	Mid-Atlantic TRM V10.0, p. 189.
Input	<i>CADR</i>	Varies	Product specifications.
EUL		7	Mid-Atlantic TRM V10.0, p. 190.
Inc Cost		Varies	Cost of measure accounted for by program costs.
Measure Name: Smart Socket			
Savings	ΔkWh		$(((WBase * OnAdj) - WEff) * (hrswkday - hrswkday_open)) + (((WBase * OnAdj) - WEff) * (hrswkend - hrswkend_open)) / 1000 * weeks_year$
Savings	ΔkW		0
Input	<i>WBase</i>	Varies	Illinois TRM 10.0 Vol. 2, p. 799.
Input	<i>OnAdj</i>	1	Illinois TRM 10.0 Vol. 2, p. 800.
Input	<i>WEff</i>	0.7	Illinois TRM 10.0 Vol. 2, p. 800.
Input	<i>hrswkday</i>	106	Illinois TRM 10.0 Vol. 2, p. 800.
Input	<i>hrswkday_open</i>	30	Illinois TRM 10.0 Vol. 2, p. 800, provides estimate of 48 for offices; ADM estimate for residences is 30.
Input	<i>hrswkend</i>	62	Illinois TRM 10.0 Vol. 2, p. 800.
Input	<i>hrswkend_open</i>	16	Illinois TRM 10.0 Vol. 2, p. 800, provides estimate of 10 for offices; ADM estimate for residences is 16.
Input	<i>weeks_year</i>	52.2	Illinois TRM 10.0 Vol. 2, p. 800.
EUL		7	Illinois TRM 10.0 Vol. 2, p. 798
Inc Cost		Varies	Cost of measure accounted for by program costs.

4.3.1.2.1. Verification and In-Service Rates

ADM applied verification rates developed from the participant survey responses to estimate the gross energy savings of the Home Energy Products Program. As shown in Table 4-3, all respondents verified that the rebated measure was installed, except for dehumidifiers which had a verification rate of 86%.

Table 4-3 Summary of Measure Verification for Products Component

<i>Measure</i>	<i>Number of Responses</i>	<i>Verification Rate</i>
Ductless heat pump	4	100%
Heat pump water heater	2	100%
Smart thermostat	9	100%
Dehumidifier	14	86%
Pool pump	2	100%
Electric water heater	6	100%

Table 4-4 summarizes the in-service rates for the online energy marketplace measures. Table 4-5 provides additional information on the power strips installed – 37% of the power strips were not used at all and 23% were not used to control entertainment or computer equipment. Table 4-6 shows the percentage of units reported to not be in use at all. The share of units not in use was greater for customers who purchased more than one unit.

Table 4-4 In-Service Rates for Online Energy Marketplace Measures

<i>Measure</i>	<i>Number of Units in Sample</i>	<i>In-Service Rate</i>
Showerhead	3	100%
Kitchen Faucet Aerator	2	50%
Bathroom Faucet Aerator	3	100%
Smart Thermostat	1	100%
Wifi Plus Bluetooth Smart Socket	2	100%
Advanced Power Strip	265	40%

Table 4-5 In-Service Rates for Advanced Power Strips

<i>Installation Status</i>	<i>Percent of Advanced Power Strips (n = 265)*</i>
In use	40%
Not in use	
Not using the power strip	37%
Nothing in the control outlet or does not have computer or television peripherals plugged into the switched outlet	23%

Table 4-6 Average Not-In-Use Rate for Advanced Power Strips by Number of Power Strips Purchased

<i>Number of Power Strips Purchased</i>	<i>Number of Customers in Survey Sample</i>	<i>Percent of Power Strips Not Used at All</i>
1	69	19%
2	41	41%
3	6	50%
4	24	45%

4.3.2. Results of Ex Post Gross Savings Estimation

ADM estimated ex post gross electric savings and peak demand reductions for the Home Energy Products Program through detailed analysis of program tracking data and participant survey data. This section presents the results of the gross savings calculation activities.

4.3.2.1. Ex Post Gross kWh Savings

Table 4-7 below shows the estimated measure-level and program-level annual gross energy savings. The gross kWh realization rate for the program is 67%.

Table 4-7 Measure-Level Annual Gross kWh Savings

<i>Measure</i>	<i>Quantity of Measures Incented</i>	<i>Ex Ante Gross kWh Savings</i>	<i>Gross Audited kWh Savings</i>	<i>Gross Verified kWh Savings</i>	<i>Ex Post Gross kWh Savings</i>	<i>Gross Realization Rate</i>
Ductless Heat Pump	45	191,991	191,991	191,991	212,036	110%
Air Source Heat Pump	-	2,000	2,000	2,000	0	0%
Ground Source Heat Pump	3	18,314	18,314	18,314	5,546	30%
Ductless Heat Pump (Midstream)	10	20,881	20,881	20,881	41,895	201%
Air Source Heat Pump (Midstream)	1	1,840	1,840	1,840	600	33%
Central Air Conditioner (Midstream)	12	3,047	3,047	3,047	3,600	118%
ECM Fan Motor	3	1,245	1,245	1,245	1,245	100%
Heat Pump Water Heater	14	19,847	19,847	19,847	17,584	89%
Electric Resistance Water Heater	87	2,349	2,349	2,349	56,567	2408%
Dehumidifier	96	17,089	17,089	14,648	14,571	85%
Air Purifier	20	19,151	19,151	16,415	2,063	11%
Variable Speed Pool Pump	191	25,934	25,934	25,934	25,960	100%
Wi-Fi Smart Thermostat	175	104,680	104,680	104,680	144,745	138%
Wi-Fi Smart Thermostat (Marketplace)	14	262,724	262,724	262,724	15,115	6%
Bathroom Aerator	14	494	494	494	484	98%
Kitchen Aerator	38	3,906	3,906	1,953	190	5%
Shower Head	38	13,172	13,172	13,172	13,378	102%
Advanced Power Strip	2,164	248,045	248,045	98,191	88,234	36%
Smart Socket	22	44	44	44	1,219	2770%
Total		956,751	956,751	799,767	645,031	67%

The following discusses factors affecting realization rates that differed substantially from 100%.

- **Air source heat pumps (0%).** The program tracking data listed a single air source heat pump with an efficiency rating that met the minimum Federal efficiency standard. Although savings were recorded for the measure in the tracking data, the data indicated that an incentive was not paid for the measure.
- **Ground source heat pumps (30%).** The difference between ex ante and ex post savings estimates was likely due to differences in the efficiency of the units recorded in the program data from what ADM identified by referencing the characteristics of the units available in the AHRI database. The program tracking data indicated that the rated efficiency of the units was higher than was indicated in the AHRI database.
- **Ductless heat pumps (Midstream) (201%).** Ex ante estimates appear not to vary in accordance with capacity and efficiency of the unit. Ex ante savings estimates ranged from 2,030 to 2,323 kWh, and the ex ante savings estimate for eight of the ten units was 2,066

kWh. As shown in Table 4-8, those ex ante estimates covered a variety of unit capacities and efficiencies, suggesting that the ex ante estimates were not based on the unit characteristics. The ex post savings analysis was based on the specific unit characteristics and hours for the installation location.

Table 4-8 Midstream Ductless Heat Pump Ex Ante Savings Estimates

<i>Ex Ante Gross kWh Savings</i>	<i>Ex Post Gross kWh Savings</i>	<i>SEER</i>	<i>EER</i>	<i>Heating Capacity</i>	<i>Cooling Capacity</i>
2,030	4,013	19	13.5	25,000	22,000
2,066	4,299	22.5	13.5	24,600	23,600
2,066	3,408	21	12.5	20,200	17,200
2,066	4,299	22.5	13.5	24,600	23,600
2,066	3,408	21	12.5	20,200	17,200
2,066	4,922	21	10	30,000	30,000
2,066	4,607	21.5	13	26,000	22,000
2,066	6,027	21.5	13.5	36,000	34,400
2,066	4,695	22.5	13	26,000	22,000
2,323	2,219	25.5	14	12,000	12,000

- **Air Source Heat Pump (Midstream) (33%).** A single unit was rebated through the program with an ex ante savings estimate of 1,840 kWh. The ex ante estimate may have assumed early replacement / less than standard efficiency for the replaced unit.
- **Air Purifier (11%).** Two ex ante savings values were used for the air purifiers (433 kWh and 664.5 kWh). These values do not appear to correspond to the clean air delivery rates (CADR) of the rebated units (see Table 4-9). These values also appear to reflect the ENERGY STAR standard that ended on July 7, 2020. ADM recommends application of the following values based on those presented in the Mid-Atlantic TRM V10.0, p. 189.

Table 4-9 Air Purifier Ex Ante Savings Estimates

<i>CADR</i>	<i>Ex Ante Savings Value (kWh)</i>	<i>Number of Units</i>	<i>Recommended Ex Ante per Unit Savings Estimate (kWh)</i>
73.1	433	6	39
	664.5	7	
134.8	433	6	95
	664.5	14	

- **Wi-Fi Smart Thermostat (Marketplace) (6%).** Most of the Wi-Fi thermostats delivered through the online marketplace assumed either 1,523 kWh or 2,031 kWh for the ex ante savings, both of which are high.

- **Electric Resistance Water Heater (2408%).** The ex ante savings estimate was 27 kWh per unit compared to an average of 650 kWh per unit ex post savings estimate.
- **Kitchen Aerator (5%).** The realization rate for kitchen aerators was low because of the 50% in-service rate and a high ex ante estimate of 279 kWh. The average ex post kWh savings were 14 kWh or 27 kWh without adjustment for the in-service rate.
- **Advanced Power Strip (36%).** The 77 kWh ex ante savings estimate was reasonable and the in-service rate of 40% was the primary reason why ex post savings differed from ex ante savings.
- **Smart Socket (2770%).** The ex ante savings estimate was 2 kWh per unit. ADM referenced the Illinois TRM v. 10 to estimate savings of 27.7 kWh per unit.

4.3.2.2. *Ex Post Gross kW Reductions*

Table 4-10 below shows the estimated measure-level and program-level gross demand reduction resulting from the program. The gross kW realization rate for the program is 52%.

Table 4-10 Measure-Level Gross kW Reduction

<i>Measure</i>	<i>Quantity of Measures Incited</i>	<i>Ex Ante Gross kW Savings</i>	<i>Gross Audited kW Savings</i>	<i>Gross Verified kW Savings</i>	<i>Ex Post Gross kW Savings</i>	<i>Gross Realization Rate</i>
Ductless Heat Pump	45	1.25	1.25	1.25	16.15	1293%
Air Source Heat Pump	0	0.50	0.50	0.50	-	0%
Ground Source Heat Pump	3	2.72	2.72	2.72	0.99	37%
Ductless Heat Pump (Midstream)	10	-	-	-	4.10	
Air Source Heat Pump (Midstream)	1	0.33	0.33	0.33	0.70	212%
Central Air Conditioner (Midstream)	12	-	-	-	7.13	
ECM Fan Motor	3	-	-	-	-	
Heat Pump Water Heater	14	2.39	2.39	2.39	2.40	101%
Electric Resistance Water Heater	87	0.09	0.09	0.09	7.73	8239%
Dehumidifier	96	4.03	4.03	3.45	3.33	83%
Air Purifier	20	2.21	2.21	1.89	0.24	11%
Variable Speed Pool Pump	191	39.92	39.92	39.92	39.72	100%
Wi-Fi Smart Thermostat	175	-	-	-	-	
Wi-Fi Smart Thermostat (Marketplace)	14	-	-	-	-	
Bathroom Aerator	14	0.05	0.05	0.05	0.05	96%
Kitchen Aerator	38	0.45	0.45	0.23	0.03	6%
Shower Head	38	0.60	0.60	0.60	0.66	110%
Advanced Power Strip	2164	207.75	207.75	82.24	9.90	5%
Smart Socket	22	-	-	-	-	
Total		262.29	262.29	135.66	93.12	52%

4.4. Estimation of Ex Post Net Savings

The following section presents the methodology used to estimate the net energy impacts resulting from the Home Energy Products Program.

4.4.1. Methodology for Estimating Ex Post Net Energy Savings

The net savings analysis is used to determine what part of the gross energy savings achieved by program participants can be attributed to the effects of the program. The net savings attributable to program participants are the gross savings less free ridership, plus spillover. ADM estimated free ridership and participant spillover through surveys of program participants.

The following sections discuss the approach taken to evaluate the net savings of the HVAC and appliance measures that I&M rebated through the program. ADM evaluated the net savings of the

HVAC and appliance measures using data obtained through a survey of participating customers and a survey of participating HVAC contractors.

Also discussed is the approach taken to evaluate the net savings of the efficient products sold through the I&M marketplace website (online marketplace). Through the online marketplace, customers can purchase efficient measures and receive an instant discount. The products are shipped to the customer's home for free if the purchase is greater than \$25, or for \$8 if the order is less than \$25. Table 4-11 summarizes the marketplace measures and incentives paid.

ADM evaluated the net savings of the marketplace program using data collected from a survey of customers who purchased measures through the marketplace.

Table 4-11 Summary of Marketplace Measures and Incentives Paid

<i>Measure</i>	<i>Quantity Sold</i>	<i>Minimum per Unit Incentive</i>	<i>Average per Unit Incentive</i>	<i>Maximum per Unit Incentive</i>
Advanced Power Strips	2,164	\$10	\$10	\$10
Advanced Power Strips - Free promotion	501	--	--	--
Smart Thermostats	195	\$8	\$89	\$100
Air Purifiers	33	\$25	\$25	\$25
Showerheads	32	\$4	\$8	\$9
Bathroom Faucet Aerator	22	\$1	\$1	\$1
WiFi Plus Bluetooth Smart Sockets	22	\$2	\$2	\$2
Kitchen Faucet Aerator	14	\$1	\$1	\$1

4.4.1.1. Methodology for Estimating Free Ridership for Rebated Appliances and HVAC Equipment

Survey respondents were asked a series of questions designed to elicit information regarding the following factors:

- Financial ability and plans and intentions to implement the efficiency measure;
- The program influence on the decision to implement the efficiency measure;
- The program’s influence on the timing of the measure installation.

The calculation of a free ridership score was based on the responses to questions about the participants’ prior plans and intentions, program influence on measure selection, and program influence on timing of measure implementation.

4.4.1.1.1. Financial Ability and Plans and Intentions

Two indicator variables were developed based on responses to the survey questions on plans and intentions. The first corresponds to financial ability. Respondents were considered to have not been financially able to install the efficient equipment if they answer “no” to either of the two questions below:

- FR1: Would you have been able to afford to purchase the efficient [MEASURE] if the rebate was not available from the program?
- FR2: [IF YES] Just to confirm, if the rebate was not available through the program, would you still have paid the additional cost to purchase an [EFF_MEASURE] instead of a [STAND_MEASURE]?

The second indicator variable is related to whether the customer had plans to implement the efficiency measure. Respondents were considered to have had plans if they answer “yes” to the following two questions:

- FR3: Were you planning to purchase an [EFF_MEASURE] before you learned of I&M’s rebate program?
- FR4: [IF YES] Just to be clear, did you have plans to specifically purchase an [EFF_MEASURE] as opposed to a [STAND_MEASURE]?

Respondents who were found to not have plans or the financial ability to implement the measures were deemed to not be free riders.

4.4.1.1.2. Program Influence on Decision to Implement Energy Efficiency Measure

Participants were asked about the direct influence of the program on their decision to implement the energy efficiency measures. Specifically, participants were asked:

- FR5: Now we would like to know how likely you would have been to install the [MEASURE] if the program was not available. Using a scale where 0 is “not at all likely” and 10 is “very likely”, how likely is it that you would have installed the same [EFF_MEASURE] if you had not received the financial or information assistance through the program?

A program influence score was developed based on this response in the following manner:

$$\text{Program Influence} = \text{FR5} / 10$$

An aspect of program influence is the indirect influence of trade allies on customer decisions. This indirect influence occurs when the program influences the recommendations made by trade allies, and the trade allies’ recommendations were influenced by the program. To account for this type of influence, customers that installed efficient HVAC equipment were asked to report on the extent to which their decisions were influenced by the recommendations provided by their contractor. Specifically, respondents were asked the following questions:

- FR7: Did the contractor that you worked with provide you with information, marketing material or a recommendation to purchase or install the [EFF_MEASURE]?
- FR8: Using a scale where 0 is “not at all influential” and 10 is “very influential, how influential was the information, marketing material, or recommendation provided by this contractor in your decision to purchase the [EFF_MEASURE]?

Participants’ program influence scores were substituted with a trade ally influence score if they provide a response of 7 or greater to FR8 and the indirect influence on the participant through the trade ally was greater than the direct influence on the participant.

The trade ally influence scores were based on the responses provided by trade allies to the following questions on a survey completed for the PY2021 evaluation:

- TA1: How important is the I&M program and incentives to how much your company markets energy-efficient HVAC equipment? (Rated on a 0 – 10 scale)
- TA2: How important how often your company recommends energy efficient HVAC equipment to customers? (Rated on a 0 – 10 scale)
- TA3: Thinking about the projects that you completed as part of I&M’s program, if the program was not available, do you think you would have recommended the same energy efficient equipment most of the time, some of the time, or generally not at all?

The trade ally score was calculated as shown in Table 4-12.

Table 4-12 Calculation of Trade Ally Influence Score

<i>Response to TA3</i>	<i>Trade Ally Score</i>
Some of the time or generally not at all	1 - TA1/10
Most of the time	1 - (TA1/10)*.5

4.4.1.1.3. Program Influence on Project Timing

To account for deferred free ridership due to the program’s effect on the timing of the implementation of the efficiency measure, respondents were asked the following two questions:

- Did you purchase and install the [EFF_MEASURE] sooner than you would have if the information and financial assistance from the program had not been available?
- When might you have purchased or installed the same [EFF_MEASURE] if you had not participated in the program?

Based on the responses to those questions a timing adjustment was calculated as shown in Table 4-13.

Table 4-13 Timing Adjustment Score

<i>Likely Timing of Project in Absence of the Program</i>	<i>Timing Score</i>
Within 6 months	1
Between 6 months and 1 year	.67
In more than 1 year to 2 years	.33
In two years or more	0

4.4.1.1.4. Free Ridership Scoring

For respondents that did not have plans or intentions, an overall free ridership score was developed based on the program influence score and timing score. ADM calculated an overall project free ridership score combining the scores described above (Equation 4-1).

Equation 4-1

$$\text{Free Ridership} = \text{Program Influence} * \text{Timing Score}$$

4.4.1.2. Methodology for Estimating Free Ridership for Midstream HVAC

A limited number of HVAC units (23) were purchased through the midstream channel during the 2022 program year. Because of the limited volume of participation, ADM conducted a literature review to estimate the program's net impact rather than collecting primary data from participating distributors. Table 4-14 summarizes the free ridership findings. ADM applied the average free ridership rate of 36% to the PY2022 midstream units.

Table 4-14 Midstream HVAC Free Ridership Benchmark Values

<i>State</i>	<i>Sector</i>	<i>Program Year</i>	<i>Free Ridership</i>
California	C&I and Residential	2013-14	36%
Illinois	Residential	2022	42%
Indiana*	Residential	2015	29%
Average			36%

*Includes downstream rebates and rebates to vendors and distributors.

*4.4.1.3. Methodology for Estimating Free Ridership for Online Marketplace Sales**4.4.1.3.1. Prior Plans*

A score to reflect the presence of prior plans was based on the responses to the following two questions:

- Did you decide to purchase the measure before you learned about I&M's Online Marketplace or After viewing products on I&M's Online Marketplace?
- Were you planning to purchase the measure before you learned that you could get an instant rebate through I&M's Online Marketplace?

Respondents who indicated that they decided to purchase the measure after viewing it on I&M's online marketplace and who said that they were not planning to purchase the item before learning of the marketplace were considered not to have prior plans and assigned a plans score of 0 and all other respondents were assigned a plans score of 1.

4.4.1.3.2. Likelihood of Purchasing

A likelihood of purchasing score was developed by dividing the numeric response to the following question by 10.

- How likely is it that you would have purchased the same measure at about the same time if you could not have received the instant rebate through the I&M Online Marketplace? [Rated on a 0 – 10 Scale]

4.4.1.3.3. *Timing and Quantity Adjustments*

A timing adjustment score was developed based on respondents reporting when they would have purchased the equipment if they had not purchased the item through the marketplace. Table 4-13 shows how the score was developed.

A quantity adjustment score was developed based on how many percent fewer of the measures would have been purchased if they were not available through the online marketplace.

4.4.1.3.4. *Free Ridership Scoring*

ADM calculated an overall project free ridership by combining the scores described above (Equation 4-2).

Equation 4-2

$$\text{Free Ridership} = \text{Prior Plans Score} * \text{Program Influence} * \text{Timing Score} * \text{Quantity Adjustment}$$

4.4.1.4. *Methodology for Estimating Spillovers*

Program participants may implement additional energy saving measures without receiving a program incentive because they participated in the program. The energy savings resulting from these additional measures constitute program participant spillover effects.

To assess participant spillover savings, survey respondents were asked whether they implemented any additional energy saving measures for which they did not receive a program incentive. Respondents were also asked to provide information on the attributes of the measures implemented for use in estimating the associated energy savings.

Participants who reported implementing one or more efficiency measures were asked two questions for use in developing a spillover score:

- SO1: On a scale of 0 to 10, where 0 represents “not at all important” and 10 represents “extremely important”, how important was your experience with [PROGRAM] in your decision to purchase the items you just mentioned?
- SO2: On a scale of 0 to 10, where 0 represents “not at all likely” and 10 represents “extremely likely” how likely would you have been to make the additional purchases you just mentioned even if you had not participated in the [PROGRAM]?

ADM used the response to these questions to develop a spillover score as follows:

$$\text{Spillover} = \text{Average}(\text{SO1}, 10 - \text{SO2})$$

All the associated measure savings were considered attributable to the program if the resulting score was greater than 7.

A spillover ratio was calculated by dividing the savings associated with the spillover measure by the survey sample gross energy savings.

4.4.2. Results of Ex Post Net Savings Estimation

The ex post annual net energy savings and ex post net demand reductions resulting from the PY2022 Home Energy Products Program are reported in the following sections.

4.4.2.1. Free Ridership Results

Table 4-15 and Table 4-16 summarize the number of survey responses and average free-ridership scores by measure for the Home Energy Products Program.

Table 4-15 Survey Response Count and Average Free Ridership Score by Measure – Appliance and HVAC

<i>Measure</i>	<i>Survey Response Count</i>	<i>Average Free Ridership</i>
High efficiency water heater	6	73%
Wi-fi smart thermostat	9	53%
High efficiency ductless heat pump	4	35%
ENERGY STAR dehumidifier	14	36%
High efficiency heat pump water heater	2	0%

Table 4-16 Survey Response Count and Average Free Ridership Score by Measure – Online Energy Marketplace

<i>Measure</i>	<i>Survey Response Count</i>	<i>Average Free Ridership Score</i>
Advanced Power Strips	130	5%
Smart Thermostats	1	13%
High Efficiency Showerheads	3	8%
High Efficiency Bathroom Faucet Aerators	1	0%

4.4.2.2. Participant Spillover Results

Three respondents reported installing measures that qualified as participant spillover. The spillover ratio was 1.0%.

4.4.2.3. Non-Participant Spillover Results

No non-participant spillover was identified for the residential sector.

4.4.2.4. Ex Post Net Savings

Table 4-17 summarizes the ex post annual net kWh and kW savings of the Home Energy Products Program. Program-level annual net savings totaled 410,792 kWh, and the net-to-gross ratio is 64%.

Table 4-17 Program-Level Annual Net kWh and kW Savings

Category	kWh	kW
Ex Ante Gross Savings	956,751	262.29
Gross Audited Savings	956,751	262.29
Gross Verified Savings	799,767	135.66
Ex Post Gross Savings	645,031	93.12
Gross Realization Rate	67%	36%
Ex Post Free Ridership	234,239	35.13
Ex Post Non-Participant Spillover	0	0
Ex Post Participant Spillover	0	0
Ex Post Net Savings	410,792	57.99
Net-to-Gross Ratio	64%	62%
Ex Post Net Lifetime Savings	4,024,377	na

4.5. Process Evaluation

ADM completed a process evaluation of the HVAC midstream incentive component of the Efficient Products program. The process evaluation activities consisted of a review of program documentation and discussions with I&M and CLEAResult program staff. ADM did not complete planned interviews with distributors because of the limited participation in the program during the year. These interviews are planned for the PY2023 evaluation.

This section also summarizes feedback provided by participants who responded to the Efficient Products downstream rebate survey and the Online Marketplace survey, which were administered to verify products purchased, develop in-service rates, and assess the net program impacts.

4.5.1. Midstream Program Design and Operations

The midstream incentive component of the Efficient Products Program partners with HVAC and heat pump distributors to provide discounts on the cost of efficient HVAC and water heating equipment.

4.5.1.1. Program Design

Midstream programs influence sales of efficient equipment by influencing distributors to increase stocks of the efficient equipment (making them more available for emergency replacements), to sell the efficient equipment, and to decrease the initial purchase cost of the efficient equipment. Midstream programs have the potential to leverage the existing market structure and supply chains to efficiently increase sales of efficient equipment. This includes working with relatively few distributor sales staff to promote the efficient equipment to a more extensive group of contractors, who in turn, promote the efficient equipment to a more extensive group of customers.

The I&M program works with HVAC distributors that sell efficient equipment that is installed in residential customer households. The program provides incentives to the distributor partner and the customer end-user, as summarized in Table 4-18.

Table 4-18 Midstream Incentives

<i>Residential HVAC Measures</i>	<i>Total Incentive per Unit</i>	<i>Participating Partner Stipend per Unit</i>	<i>Customer Incentive per Unit</i>
Central air conditioner (SEER 16)	\$200	\$50	\$150
Central air conditioner (SEER 17)	\$275	\$50	\$225
Central air conditioner (SEER 18+)	\$350	\$50	\$300
Mini splits - 19 SEER - 9.5 HSPF	\$250	\$50	\$200
Mini splits - 21 SEER - 10 HSPF	\$400	\$50	\$350
Mini splits - 23+ SEER - 10 HSPF	\$600	\$50	\$550
Heat pump SEER 16	\$300	\$50	\$250
Heat pump SEER 17	\$400	\$50	\$350
Heat pump SEER 18+	\$600	\$50	\$550
Heat pump water heater (2.0 EF)	\$400	\$50	\$350
Geothermal heat pump EER 17.1 + and 3.6 COP +	\$500	\$50	\$450

4.5.1.2. Partner Eligibility and Participation Requirements

The I&M midstream incentive component partners with distributors who purchase directly from equipment manufacturers and equipment manufacturers who make direct sales. The program requires that partners have been in business for at least one year and have one or more locations that serve I&M’s service territory.

To become a partner, the partner must execute a promotion agreement (PA), a document that establishes the business as a program partner. Partners must also provide a W-9 and enrollment form. The partner must agree to adhere to the program rules and a performance review by the program team.

4.5.1.3. Partner Recruitment

The implementation contractor outlined the strategy for enrolling distributors into the midstream program. With extensive experience in implementing midstream programs both locally and nationally, the contractor has an understanding of the key players in the industry. To kick-start the enrollment process, the contractor targeted large-volume distributors first. These distributors are attractive targets as they have a deeper understanding of the program, and often have centralized staff to handle program-related tasks such as uploading documents and sales data. This makes them more likely to participate in the program.

During the recruitment process, the contractor stated that they have open and honest discussions with the distributors about the benefits and requirements of the program. They highlight the value the program can bring to their business and address any concerns about the time and resources

required to participate. The main obstacles to enrollment tend to be the perceived workload and staffing issues.

4.5.1.4. Program Sales

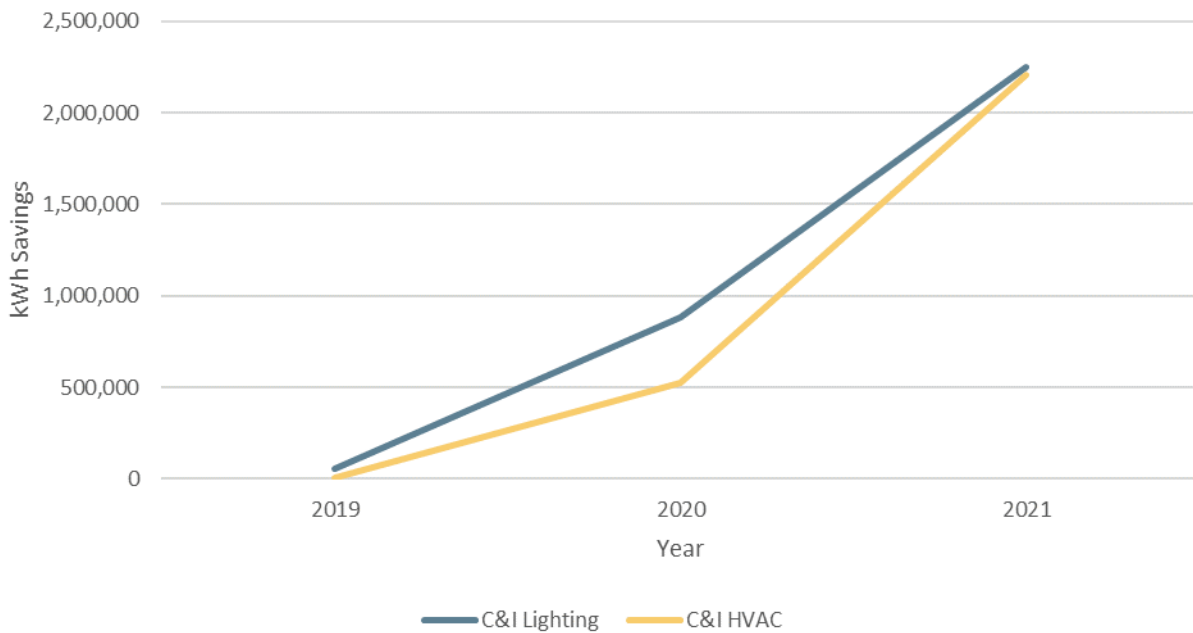
The first year of operations for the midstream program saw limited sales, which may be attributed to the time and effort needed to establish the program, enroll distributors, and for all market participants to become familiar with it. According to the implementation contractor, it takes time for everyone to feel confident and comfortable with the program. For instance, distributors may have concerns about offering discounts on walk-in counter sales as they may not have enough knowledge about which equipment is eligible for a discount and do not want to promise a discount that is not available. Similarly, contractors in the field may face similar challenges when discussing equipment options with customers. Additionally, the sales verification process can create apprehension among distributors, who may worry that the equipment sold may not be installed at the specified location and that their incentive payments could be retracted.

However, as awareness of the midstream discounts grows, distributors may receive more requests from buyers, leading to increased engagement and participation. The implementation contractor believes that this shift in demand will drive greater distributor engagement in the program.

Other research and program administrators' experience with midstream programs supports the conclusion that time is needed for a program to become established in the market for its potential to be realized. An evaluation of a midstream/upstream HVAC offered in Massachusetts recommended that “such [HVAC] upstream programs be implemented for at least three years as participants need up to three years to fully understand the program and incorporate the program into their business operations.”⁶ Similarly, the figure below shows the kWh growth of midstream C&I lighting and HVAC programs offered by a midwestern utility and shows large increases between the first and second years of the program and the second and third years of the program.⁷

⁶ Proposed Final Evaluation Report. Upstream HVAC Initiative Process Evaluation. Massachusetts Program Administrators and Energy Efficiency Advisory Council. October 2017.

⁷ Source: 2019, 2020, and 2021 Public Service Company of Oklahoma EM&V reports.

Figure 4-1 C&I Midstream Savings for Years 1 to 3

The implementer cited some factors that may help sales in the future. One factor, the Inflation Reduction Act, provides incentives for heat pumps that may drive future participation.⁸ Additionally, the new SEER2 efficiency requirements allow for air conditioning systems, heat pumps, and single-packaged units built before January 1, 2023, to be installed and sold in the North region, whereas these units cannot be sold in the South or Southwest regions after January 1, 2023. These regulations may result in additional inventory from the South and Southwest regions being shipped to distributors located in the North region.⁹

4.5.1.5. Partner on Boarding and Training

Program partners receive a welcome kit that contains the following:

- Participating partner handbook
- Marketing materials and guidelines
- Program flyer
- Frequently asked questions sheet
- List of measures and incentives
- Data upload template and tutorial

The program provides partners with initial and follow-up training. The initial training provides an introduction to the Program Partner Central (PPC) platform. The training includes a review of the

⁸ Sec. 50122, PUBLIC LAW 117-169—AUG. 16, 2022

⁹ <https://www.carrierenterprise.com/seer2>

customer and product validation requirements, a review of the eligible equipment and incentives, the file uploading process, and a discussion of marketing material and needs. Follow-up training covers final information for utilizing PPC and is intended to ensure that the partner is comfortable using the system, and understands how to review and track payment status.

The program also provides training for the partner's administrative and sales staff. The administrative staff training covers the process for collecting and entering the sales data needed to participate and is required before the partner can use PPC. The sales staff training covers customer and equipment eligibility and I&M brand awareness.

Program training may be delivered in person, by phone, through a webinar, or with pre-recorded content. Training is supported by providing written documentation and how-to guides to the partners.

4.5.1.6. Incentive Reimbursement Process

To receive an incentive, the partner must validate the customer and equipment eligibility. Customer validation is performed through PPC and is based on the customer's address. The tool validates that the end-user is an I&M customer using the customer's address and zip code. Google's API is used to standardize the address format to facilitate cross-referencing the entered address against I&M account records.

Products can be validated using the PPC product validator tool or by checking that the product is on the Qualified Product List.

Sales months for products are based on the ship date, and the end-user must install the equipment within 30 days of the ship date. If the end-user cannot comply with the timeline (for instance, for new construction), then an exemption must be submitted for review.

To receive the incentive payment, a partner must upload the invoice and additional data. Uploads are submitted every month. The monthly submission consists of two components: sales data and the monthly invoice.

The sales data is submitted via an Excel spreadsheet, the template for which is provided by the program, and partners are encouraged to use a CRM export if one is available to provide the data. The data required include:

- Distributor ID
- Measure
- AHRI and serial numbers
- Contractor contact information and installation address
- Customer validation code provided during the validation of the customer installation location
- Amount of discount amount
- Sales date
- Customer invoice number

The invoice submitted must match the sales data upload. The program pays invoices net 5 days after submission to I&M.

The implementation contractor provides each participant with the contact information of the two primary staff that can assist with completing the submissions. They also offer and have completed the submission process for a participant as a demonstration but noted that they lack the resources to do all submissions for participants.

4.5.1.7. *Quality Assurance and Control*

Much of the data quality assurance and control process is handled through automated processes in the PPC. The PPC validates that:

- Flags duplicate entries for the partner to correct or confirm.
- The invoice specifications match the sales data.
- The products and customers qualify to receive the incentive.

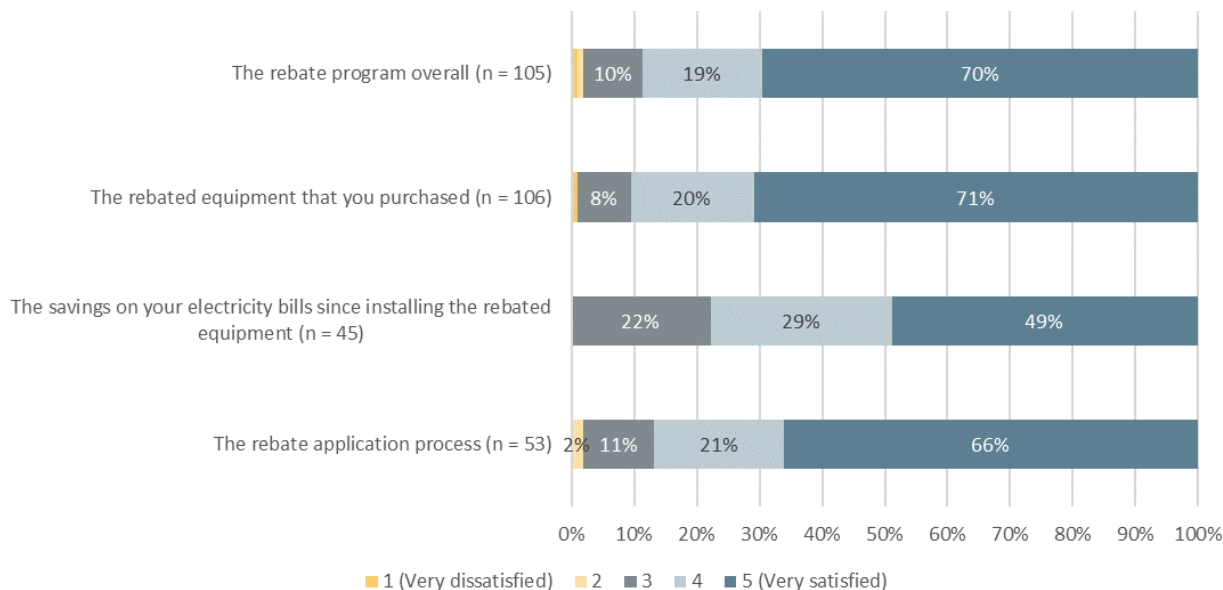
Additionally, the implementation contractor may request a sample of customer invoices monthly to verify that the incentive has been passed down to the customer.

4.5.2. Home Energy Products Rebate and Online Marketplace Place Participant Feedback

4.5.2.1. *Home Energy Products Rebate Feedback*

Participants reported high levels of satisfaction with the Efficient Products rebate program. As shown in Figure 4-2, 89% of respondents were satisfied with the program overall and the incidence of dissatisfaction was very low.

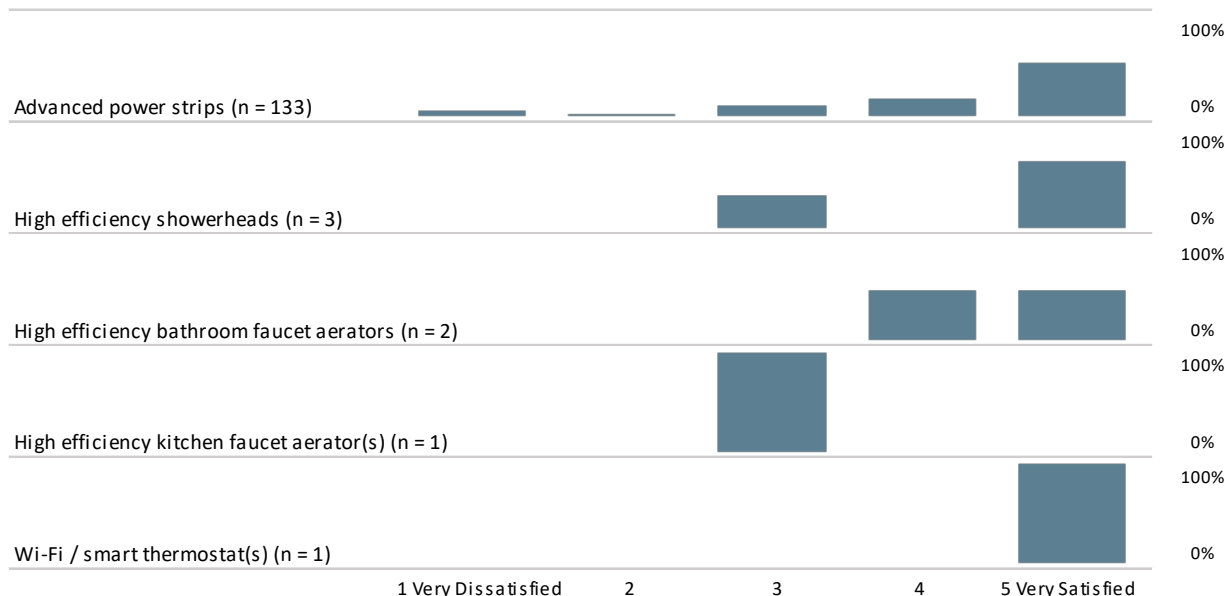
Figure 4-2 Participant Satisfaction with the Efficient Products Program



4.5.2.2. *Online Marketplace Feedback*

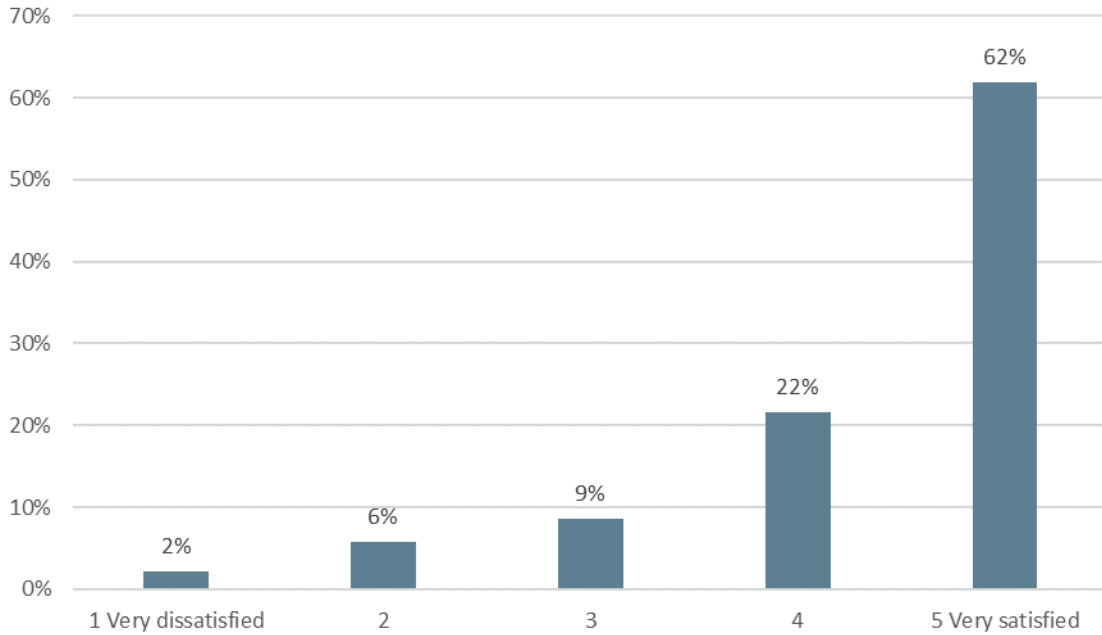
Satisfaction with products purchased was fairly high. Figure 4-3 summarizes customers' levels of satisfaction with the product they purchased through the online marketplace. There were relatively few responses for most products, but most purchasers of the advanced power strips were somewhat or very satisfied with them.

Figure 4-3 Satisfaction with Online Marketplace Product



Overall, 84% of participants were satisfied with their online marketplace purchase. Sixty-two percent reported that they were very satisfied and 22% were somewhat satisfied (rated their satisfaction as a 4 on the 5-point scale).

Figure 4-4 Satisfaction with Purchase Experience



The net promoter score for the service was 32%. Table 4-19 summarizes the net promoter score for customers who purchased through the online marketplace.¹⁰ Fifty-one percent of respondents were classified as promoters. Table 4-20 summarizes the reasons respondents gave for their ratings of the likelihood of recommending the online marketplace. The most commonly given reason for promoting the service was that it was easy or quick, or generally a positive experience. Problems with the product purchased and website difficulty were the most common reasons why respondents were unlikely to recommend the service.

Table 4-19 Net Promoter Score

NPS Group	Percent of Respondents (n = 139)
Promoter	51%
Passive	29%
Detractor	19%

¹⁰ The net promoter score® is equal to the % of Promoters - % of Detractors. Promoters are respondents who rate the likelihood of recommending the service as 9 or higher on a 0-10 point scale. Detractors are those who rate it as 6 or lower on the same scale.

Table 4-20 Reasons for Likelihood of Recommending the Online Marketplace Rating

<i>Reason for NPS Rating</i>	<i>Promoter (n = 53)</i>	<i>Passive (n = 12)</i>	<i>Detractor (n = 15)</i>
Easy/Quick/ Good experience	51%	17%	0%
Affordable/Good Price	23%	25%	7%
Likes product	21%	25%	0%
Fast delivery	15%	0%	0%
Encourages or helps to save energy	9%	0%	0%
Provides information on products	8%	0%	0%
Good communication / Customer service	4%	0%	0%
Problem with product	0%	17%	33%
Website is difficult to use/Difficulty with purchase	4%	8%	20%
Slow getting order	0%	17%	13%
Other complaint/issue	0%	0%	13%
Product availability inconsistent	0%	8%	7%
Not lowest-cost option	0%	0%	7%

4.6. Findings and Recommendations

Midstream HVAC incentives launched at midyear and achieved limited sales in the first year of operation. The midstream incentives launched in June. Participation during the year was limited as the implementer focused on recruiting and training distributors. Other evaluations have reported that multiple years are needed for midstream programs to ramp up their sales of efficient equipment.

- **Recommendation 1:** We recommend that the program continue to work with distributors to encourage participation. Outreach to contractors that have historically completed projects through the downstream program may lead them to seek out incentives from distributors and increase participation. Participation should be monitored during PY2023 and a significant increase in sales should occur during the year.

Efficient Product rebate participants were satisfied with their program experience. Eighty-nine of the respondents were satisfied with the program overall and the incidence of dissatisfaction was very low.

Overall, 84% of participants were satisfied with their online marketplace purchase. Additionally, 51% of customers were classified as promoters based on their likelihood of recommending the program to others. The ease of using the marketplace and the affordability of the products were key factors in customers' willingness to promote the service. Nineteen percent of respondents were classified as detractors. For these customers, the most common issue was the

product purchased rather than the service. However, 20% of detractors who commented mentioned that the website was difficult to use.

- **Recommendation 2:** Consider expanding the marketplace as an alternative to the downstream rebate program because of the convenience it affords customers. For example, measures such as dehumidifiers could be moved to the marketplace.

Ex ante savings estimates, primarily for marketplace measures, differed in many cases from the ex post estimates. Savings estimates were high for air purifier, Wi-Fi thermostats, and kitchen aerators. The estimates for advanced power strips were also high, but this was largely a function of the in-service rate.

- **Recommendation 3:** Review marketplace ex ante savings estimates particularly for air purifiers, Wi-Fi thermostats, and kitchen aerators.

5. Home Energy Management

This chapter presents the results of both the impact and process evaluations of the 2022 Home Energy Management (HEM) program that Indiana Michigan Power (I&M) offered to its residential customers during the period of January 2022 through December 2022.

The objectives of the evaluation were to:

- Estimate the maximum achieved demand reduction (kW) in summer 2022;
- Estimate energy (kWh) impacts associated with demand response events, inclusive of shoulder periods;
- Complete a process evaluation of the program; and
- Provide recommendations for program improvement as appropriate.

5.1. Program Description

HEM is a demand response program that provides I&M residential customers the opportunity to enroll their smart thermostats to participate in demand response events. Enrolling customers receive a \$25 enrollment incentive (up to two incentive payments per account may be received for multiple thermostats) and may earn a \$2.40 bill credit for each event they participate in for at least 50% of the duration of the event.

Events may occur on weekdays from May through September. Events typically last 2-3 hours but may last up to 6 hours. Up to 15 events may be called during the year. To qualify, would-be participants:

- Must be an I&M residential customer.
- Use an eligible internet-connected thermostat for cooling.
- Have continuous Wi-Fi/internet.
- Have central air conditioning.
- Select a qualifying, Wi-Fi connected thermostat.

5.2. Data Collection

5.2.1. Energy Usage Data, Location Specific Weather, and HVAC Specifications

To support the estimation of program energy impacts, ADM analyzed interval energy usage data, and location-specific weather for samples of program participants.

5.3. Estimation of Ex Post Gross Savings

The following section presents the methodology that was used for estimating the gross energy and demand impacts resulting from the HEM program.

5.3.1. Methodology for Estimating Ex Post Gross Energy Savings

Participating customers had either Ecobee, Honeywell, or Amazon thermostats. Table 5-1 presents a summary of participation levels by event date and thermostat type.

Table 5-1 Event Participation Level by Event Date and Thermostat Type

Event Date	Count of Customers Receiving Event Incentive by Thermostat Type				Total
	Ecobee	Honeywell	Ecobee and Honeywell	Amazon	
6/14/2022	2,694	497	4	-	3,195
6/15/2022	2,692	497	4	-	3,193
6/21/2022	2,692	497	4	-	3,193
7/5/2022	2,694	496	4	-	3,194
7/20/2022	2,744	498	4	-	3,246
7/21/2022	2,743	498	4	-	3,245
7/22/2022	2,742	498	4	-	3,244
8/3/2022	2,705	489	4	2	3,200
8/8/2022	2,677	485	4	2	3,168
8/29/2022	2,685	487	4	4	3,180

To estimate the program ex post energy and demand savings, ADM used AMI data from a sample of participants for which AMI data was available during the events days. Table 5-2 presents counts of event participants for which AMI energy usage data were available and used in the analysis of peak event reductions and energy savings.

Table 5-2 Data Availability by Event Date

Event Date	Count of Customers Receiving Incentives Included in Regression Analysis Sample				Total
	Ecobee	Honeywell	Ecobee and Honeywell	Amazon	
6/14/2022	1,079	197	-	-	1,276
6/15/2022	1,083	198	-	-	1,281
6/21/2022	1,098	205	-	-	1,303
7/5/2022	1,123	211	-	-	1,334
7/20/2022	1,183	220	-	-	1,403
7/21/2022	1,187	220	-	-	1,407
7/22/2022	1,190	220	-	-	1,410
8/3/2022	1,243	224	-	2	1,469
8/8/2022	1,255	225	-	2	1,482
8/29/2022	1,266	228	-	4	1,498

To support the estimation of sampling precision, the coefficient of variation (CV) was calculated as the standard deviation of hourly customer-level energy usage during event days divided by average hourly customer-level energy usage during event days – here, the CV was 0.96. A sample size n supporting estimation of savings at the 90% confidence level may be calculated as:

$$n = (1.645 * cv / D)^2$$

where:

n = desired sample size

cv = coefficient of variation (0.96)

D = desired statistical precision (0.1)

Given the calculated coefficient of variation, the estimation of savings with +/-10% statistical precision at a 90% confidence level calls for a sample of 252 devices:

$$(1.645 * 1.03 / 0.1)^2 = 252$$

The season-level sample of 1,276 customers exceeds this threshold.

5.3.1.1. Analysis of Peak Event Reductions and Energy Savings

To perform the season-level analysis of event peak demand reductions and energy savings, hourly baseline energy usage was estimated using a regression model of participant energy usage, with weather effects accounted for using a construct known as the weighted temperature humidity index (WTHI).

The analysis referenced temperature and humidity measurements from several regional weather stations. As shown in Equation 5.1, WTHI is calculated from the temperature humidity index (THI) from the current and previous days. THI, as shown in Equation 5.2, is calculated based on temperature and humidity. The maximum daily WTHI was used in the analysis.

Equation 5.1

$$WTHI = \frac{4 * THI_{Current Day} + THI_{Previous Day}}{5}$$

Equation 5.2

$$THI = Temperature_{\circ F} - .55 * \left(1 - \frac{\% Relative Humidity}{100} \right) * (Temperature_{\circ F} - 58.0)$$

Regression models (Equation 5.3) were generated for each hour using the WTHI data and interval energy usage data for non-event days from May through September. The estimated energy usage was then calculated using the slope, intercept, and WTHI for event days, providing an estimate of baseline energy usage on event days by day and hour. To increase the stability of the models, regression models only included data for participants that had greater than 50 days of energy usage data.

Equation 5.3: Energy Usage Model

$$kWh = Slope * WTHI + Intercept$$

A normalizing factor was calculated and applied to the baseline curve of each event day (Equation 5-4).

Equation 5-4: Normalization Factor Calculation

$$NF = kWh_{event_t-2} / kWh_{event_t-2_predicted}$$

Where,

kWh_{event_t-2} = kWh measured during hour ending two hours immediately after the event

$kWh_{event_t-2_predicted}$ = kWh initially predicted during hour ending two hours immediately after the event

The determination of the baseline curve enables the calculation of the hourly event demand reduction. Demand reduction represents the decrease in energy usage that occurs for the average event participant during a given time interval. Demand reduction was calculated for the event period and the shoulder periods during the hour immediately prior to each event and the hour immediately after each event. The event period is the time from when the event starts to when the event ends. Equation 5-5 shows the formula for calculating demand reduction during each time period.

Equation 5-5: Demand Reduction Calculation

$$kW_t^{reduction} = kW_t^{baseline} - kW_t^{actual}$$

Where,

t = the 60-minute interval for which demand reduction is being calculated

$kW_t^{baseline}$ = kW demand predicted by the baseline at time t

kW_t^{actual} = kW demand measured at time t

Hourly savings were calculated by factoring the average hourly savings by the number of hourly participants.

5.3.1.2. Effective Useful Life and Incremental Cost

Savings are applicable to the program year in which program events occur.

No incremental costs are incurred as a result of program participation.

5.3.2. Results of Ex Post Gross Savings Estimation

This section presents the ex post annual gross energy savings and ex post gross demand reductions resulting from the 2022 Home Energy Management Program.

I&M initiated 10 load management events during the summer of 2022. As shown in Table 5-3 below, the Company was successful in initiating events that coincided with four of the five PJM coincident peak (CP) days.

Table 5-3 Demand Response Event Times

<i>Date</i>	<i>Event Start Time</i>	<i>Event Stop Time</i>	<i>Event Coincident with 5CP</i>	<i>PJM Coincident Peak Occurred During Hour Ending</i>
6/14/2022	2:00 PM	5:00 PM	No	
6/15/2022	2:00 PM	5:00 PM	No	
6/21/2022	2:00 PM	5:00 PM	No	
7/5/2022	2:00 PM	5:00 PM	No	
7/20/2022	2:00 PM	5:00 PM	No	
7/21/2022	4:00 PM	6:00 PM	Yes	5:00 PM
7/22/2022	4:00 PM	6:00 PM	Yes	6:00 PM
8/3/2022	4:00 PM	6:00 PM	Yes	6:00 PM
8/8/2022	3:00 PM	5:00 PM	Yes	4:00 PM
8/29/2022	4:00 PM	6:00 PM	No	

The demand reductions were calculated for each event hour. Aggregate hourly results are provided below in Table 5-4 for both the demand response events, as well as the one-hour precooling and one-hour snapback period following the event. In the table below, non-event hours are represented with gray fill, and PJM 5CP hours corresponding with events are represented with red font.

Table 5-4 kW Reductions for Event Days by Hour

<i>Hour</i>	<i>1:00 PM - 2:00 PM</i>	<i>2:00 PM - 3:00 PM</i>	<i>3:00 PM - 4:00 PM</i>	<i>4:00 PM - 5:00 PM</i>	<i>5:00 PM - 6:00 PM</i>	<i>6:00 PM - 7:00 PM</i>	<i>Event-Level Mean Hourly kW Reduction</i>	<i>Maximum Event Hour kW Reduction</i>
6/14/2022	-1,280.95	3,603.69	3,213.88	2,928.30	246.21		3,248.62	3,603.69
6/15/2022	-1,171.36	4,133.78	3,943.33	3,906.52	995.79		3,994.55	4,133.78
6/21/2022	-1,827.14	3,678.13	3,352.17	3,221.10	82.50		3,417.13	3,678.13
7/5/2022	-2,208.74	3,339.00	3,593.51	3,277.44	-369.68		3,403.31	3,593.51
7/20/2022	-1,566.97	4,000.97	3,882.20	3,163.38	-575.92		3,682.18	4,000.97
7/21/2022			-1,505.11	4,109.00	3,402.24	-631.49	3,755.62	4,109.00
7/22/2022			-1,619.69	3,875.56	3,243.21	-1.13	3,559.39	3,875.56
8/3/2022			-968.75	5,172.38	3,676.00	-68.45	4,424.19	5,172.38
8/8/2022		-1,786.25	4,158.44	4,012.80	541.49		4,085.62	4,158.44
8/29/2022			-1,244.88	3,776.55	3,169.52	-577.82	3,473.04	3,776.55

Table 5-5 presents average participant demand reductions for each event hour.

Table 5-5 Average Participant kW Reductions for Event Days by Hour

<i>Hour</i>	<i>1:00 PM - 2:00 PM</i>	<i>2:00 PM - 3:00 PM</i>	<i>3:00 PM - 4:00 PM</i>	<i>4:00 PM - 5:00 PM</i>	<i>5:00 PM - 6:00 PM</i>	<i>6:00 PM - 7:00 PM</i>	<i>Event-Level Mean Hourly kW Reduction</i>	<i>Maximum Event Hour kW Reduction</i>
6/14/2022	-0.40	1.13	1.01	0.92	0.08		1.02	1.13
6/15/2022	-0.37	1.29	1.23	1.22	0.31		1.25	1.29
6/21/2022	-0.57	1.15	1.05	1.01	0.03		1.07	1.15
7/5/2022	-0.69	1.05	1.13	1.03	-0.12		1.07	1.13
7/20/2022	-0.48	1.23	1.20	0.97	-0.18		1.13	1.23
7/21/2022			-0.46	1.27	1.05	-0.19	1.16	1.27
7/22/2022			-0.50	1.19	1.00	0.00	1.10	1.19
8/3/2022			-0.30	1.62	1.15	-0.02	1.38	1.62
8/8/2022		-0.56	1.31	1.27	0.17		1.29	1.31
8/29/2022			-0.39	1.19	1.00	-0.18	1.09	1.19

A summary of the aggregate demand reductions occurring during PJM 5CP hours is presented below in Table 5-6.

Table 5-6. Summary of kW Reductions during PJM 5CP Events

<i>Date</i>	<i>Hour Start</i>	<i>Hour End</i>	<i>Ex Post Net kW Savings</i>
7/20/2022	5:00 PM	6:00 PM	
7/21/2022	4:00 PM	5:00 PM	4,109.00
7/22/2022	5:00 PM	6:00 PM	3,243.21
8/3/2022	5:00 PM	6:00 PM	3,676.00
8/8/2022	3:00 PM	4:00 PM	4,158.44
Maximum Event Hour Peak kW Reduction			4,158.44
Average Event Hour Peak kW Reduction			3,796.66

The energy savings associated with each event day are presented in Table 5-7. Summing the energy savings across all events during PY2022 results in energy savings of 76,295 kWh.

Table 5-7 kWh Savings During Event Days

<i>Event</i>	<i>Participants</i>	<i>Event kWh Savings</i>	<i>Shoulder Hour kWh</i>	<i>kWh Savings</i>
6/14/2022	3,195	9,746	(1,035)	8,711
6/15/2022	3,193	11,984	(176)	11,808
6/21/2022	3,193	10,251	(1,745)	8,507
7/5/2022	3,194	10,210	(2,578)	7,632
7/20/2022	3,246	11,047	(2,143)	8,904
7/21/2022	3,245	7,511	(2,137)	5,375
7/22/2022	3,244	7,119	(1,621)	5,498
8/3/2022	3,200	8,848	(1,037)	7,811
8/8/2022	3,168	8,171	(1,245)	6,926
8/29/2022	3,180	6,946	(1,823)	5,123
Total		91,833	(15,538)	76,295

5.3.2.1. *Ex Post Gross kWh Savings*

Table 5-8 below shows the estimated program-level annual gross energy savings resulting from the program.

Table 5-8 Program-Level Annual Gross kWh Savings

<i>Ex Ante Gross kWh Savings</i>	<i>Gross Audited kWh Savings</i>	<i>Gross Verified kWh Savings</i>	<i>Ex Post Gross kWh Savings</i>	<i>Gross Realization Rate</i>
-	-	-	76,295	N/A

5.3.2.2. *Ex Post Gross kW Reductions*

Table 5-9 below shows the estimated program-level ex post gross peak kW reduction resulting from the program. The overall gross kW realization rate for the program is 130%.

Table 5-9 Program-level Gross kW Reduction

<i>Ex Ante Gross kW Savings</i>	<i>Gross Audited kW Savings</i>	<i>Gross Verified kW Savings</i>	<i>Ex Post Gross kW Savings</i>	<i>Gross Realization Rate</i>
2,928.00	2,928.00	2,928.00	3,796.66	130%

5.4. Estimation of Ex Post Net Savings

5.4.1. Methodology for Estimating Ex Post Net Impacts

The kW and kWh savings estimated using the procedures outlined in Section 5.3.1 are net savings estimates. The impacts could not occur without the I&M program infrastructure to adjust the participant cooling equipment use during the events.

5.4.2. Ex Post Net kWh and kW Savings

Table 5-10 summarizes the net ex post kWh and kW savings of the HEM Program. The annual net savings totaled 76,295 kWh and 3,796.66 kW. The net-to-gross ratio is 100%.

Table 5-10 Program-Level Net kWh and kW Savings

<i>Category</i>	<i>kWh</i>	<i>kW</i>
Ex Ante Gross Savings	0	2,928.00
Gross Audited Savings	0	2,928.00
Gross Verified Savings	0	2,928.00
Ex Post Gross Savings	76,295	3,796.66
Gross Realization Rate	N/A	130%
Ex Post Free Ridership	0	0.00
Ex Post Non-Participant Spillover	0	0
Ex Post Participant Spillover	0	0
Ex Post Net Savings	76,295	3,796.66
Net-to-Gross Ratio	100%	100%
Ex Post Net Lifetime Savings	1,144,422	n/a

5.5. Findings and Recommendations

5.5.1. Conclusions

The Home Energy Management Program achieved 3,796.66 kW in demand reductions and 76,295 kWh in energy savings. Ten events were called during the summer, four of which coincided with I&M 5 CP hours.

6. Cost Effectiveness Evaluation

The following cost effectiveness tests were performed for each program: Total Resource Cost (TRC) test, Utility Cost Test (UCT), Participant Cost Test (PCT), and Ratepayer Impact Measure (RIM) test. A score above one signifies that, from the perspective of the test, the program benefits were greater than the program costs. The benefits and costs associated with each test are defined in Table 6-1.

Table 6-1 Summary of Benefits and Costs Included in each Cost Effectiveness Test

Variable	Definition	PCT		UCT		RIM		TRC	
		Benefit	Cost	Benefit	Cost	Benefit	Cost	Benefit	Cost
Incentives	Incentives paid to customers.	✓			✓		✓		
Program Installation Costs	Installation costs paid by program.				✓		✓		✓
Bill Savings / Lost Revenue	Reduction in electricity costs faced by customers as a result of implementation of program measures. Equal to revenue lost to the utility.	✓					✓		
Avoided Energy Costs	Energy-related costs avoided by utility.			✓		✓		✓	
Avoided Capacity Costs	Capacity-related costs avoided by utility, including T&D.			✓		✓		✓	
Incremental Costs	Incremental costs associated with measure implementation, as compared with what would have been done in absence of program.		✓						✓
Program Overhead Costs	Program costs other than incentive or installation costs.				✓		✓		✓

6.1. PY2022 Cost Effectiveness Evaluation

Table 6-2 through Table 6-5 summarize key financial benefit and cost inputs for the various tests along as well as the test results for each residential program during PY2022.

Table 6-2 Home Energy Management Cost Test Inputs and Results

Variable	PCT		UCT		RIM		TRC	
	Benefit	Cost	Benefit	Cost	Benefit	Cost	Benefit	Cost
Incentives	\$ 1,622,034			\$ 1,622,034		\$ 1,622,034		
Program Installation Costs				\$ -		\$ -		\$ -
Bill Savings (NPV)	\$ 55,484							
Lost Revenue (NPV)						\$ 79,708		
Avoided Energy Costs (NPV)			\$ 29,256		\$ 29,256		\$ 29,256	
Avoided Capacity Costs (NPV)			\$ 948,636		\$ 948,636		\$ 948,636	
Avoided T&D Costs (NPV)			\$ -		\$ -		\$ -	
Incremental Costs		\$ -						\$ -
Program Overhead Costs				\$ 3,349,750		\$ 3,349,750		\$ 3,349,750
Total Benefits	\$ 1,677,518		\$ 977,892		\$ 977,892		\$ 977,892	
Total Costs	\$ -		\$ 4,971,784		\$ 5,051,491		\$ 3,349,750	
Test Score	N/A		0.20		0.19		0.29	

Table 6-3 Residential Income Qualified Weatherization Cost Test Inputs and Results

Variable	PCT		UCT		RIM		TRC	
	Benefit	Cost	Benefit	Cost	Benefit	Cost	Benefit	Cost
Incentives	\$ 0			\$ 0		\$ 0		
Program Installation Costs				\$ 177,458		\$ 177,458		\$ 177,458
Bill Savings (NPV)	\$ 726,807							
Lost Revenue (NPV)						\$ 973,933		
Avoided Energy Costs (NPV)			\$ 299,247		\$ 299,247		\$ 299,247	
Avoided Capacity Costs (NPV)			\$ 11,018		\$ 11,018		\$ 11,018	
Avoided T&D Costs (NPV)			\$ -		\$ -		\$ -	
Incremental Costs		\$ -						\$ -
Program Overhead Costs				\$ 331,971		\$ 331,971		\$ 331,971
Total Benefits	\$ 726,807		\$ 310,265		\$ 310,265		\$ 310,265	
Total Costs	\$ -		\$ 509,429		\$ 1,483,363		\$ 509,429	
Test Score	N/A		0.61		0.21		0.61	

Table 6-4 Home Energy Products Cost Test Inputs and Results

Variable	PCT		UCT		RIM		TRC	
	Benefit	Cost	Benefit	Cost	Benefit	Cost	Benefit	Cost
Incentives	\$ 148,651			\$ 148,651		\$ 148,651		
Program Installation Costs				\$ -		\$ -		\$ -
Bill Savings (NPV)	\$ 216,092							
Lost Revenue (NPV)						\$ 283,589		
Avoided Energy Costs (NPV)			\$ 86,012		\$ 86,012		\$ 86,012	
Avoided Capacity Costs (NPV)			\$ 8,719		\$ 8,719		\$ 8,719	
Avoided T&D Costs (NPV)			\$ -		\$ -		\$ -	
Incremental Costs		\$ 141,419						\$ 141,419
Program Overhead Costs				\$ 149,611		\$ 149,611		\$ 149,611
Total Benefits	\$ 364,744		\$ 94,730		\$ 94,730		\$ 94,730	
Total Costs	\$ 141,419		\$ 298,263		\$ 581,852		\$ 291,030	
Test Score	2.58		0.32		0.16		0.33	

Table 6-5 Midstream Appliances Pilot Cost Test Inputs and Results

Variable	PCT		UCT		RIM		TRC	
	Benefit	Cost	Benefit	Cost	Benefit	Cost	Benefit	Cost
Incentives	\$ 6,825			\$ 6,825		\$ 6,825		
Program Installation Costs				\$ -		\$ -		\$ -
Bill Savings (NPV)	\$ 15,088							
Lost Revenue (NPV)						\$ 19,819		
Avoided Energy Costs (NPV)			\$ 5,986		\$ 5,986		\$ 5,986	
Avoided Capacity Costs (NPV)			\$ 1,371		\$ 1,371		\$ 1,371	
Avoided T&D Costs (NPV)			\$ -		\$ -		\$ -	
Incremental Costs		\$ 20,044						\$ 20,044
Program Overhead Costs				\$ 69,887		\$ 69,887		\$ 69,887
Total Benefits	\$ 21,913		\$ 7,357		\$ 7,357		\$ 7,357	
Total Costs	\$ 20,044		\$ 76,712		\$ 96,532		\$ 89,932	
Test Score	1.09		0.10		0.08		0.08	

6.2. PY2021 – PY2022 Cost Effectiveness Evaluation

Cost effectiveness of programs across PY2021 and PY2012 was also evaluated. The test results for each program are presented in Table 6-6.

Table 6-6 Summary of PY2021 - PY2022 Benefit-Cost Ratios

<i>Program</i>	<i>Program Administrator Cost Test</i>	<i>Total Resource Cost Test</i>	<i>Ratepayer Impact Measure</i>	<i>Participant Cost Test</i>
Home Energy Management	0.21	0.31	0.21	N/A
Home Energy Products	0.47	0.42	0.22	2.25
Mid-Stream Appliances Pilot	0.10	0.08	0.08	1.09
Residential Income Qualified Weatherproofing	0.46	0.46	0.19	N/A
Residential New Construction	1.22	0.85	0.54	1.41
Residential Portfolio Total - without Low Income	0.27	0.35	0.22	4.84
Residential Portfolio Total - with Low Income	0.29	0.37	0.22	6.27

Table 6-7 through Table 6-11 summarize key financial benefit and cost inputs for the various tests along as well as the test results for each residential program during PY2021 – PY2022.

Table 6-7 PY2021 - PY2022 Home Energy Management Cost Test Inputs and Results

<i>Variable</i>	<i>PCT</i>		<i>UCT</i>		<i>RIM</i>		<i>TRC</i>	
	<i>Benefit</i>	<i>Cost</i>	<i>Benefit</i>	<i>Cost</i>	<i>Benefit</i>	<i>Cost</i>	<i>Benefit</i>	<i>Cost</i>
Incentives	\$ 1,691,275			\$ 1,691,275		\$ 1,691,275		
Program Installation Costs				\$ -		\$ -		\$ -
Bill Savings (NPV)	\$ 58,572							
Lost Revenue (NPV)						\$ 82,796		
Avoided Energy Costs (NPV)			\$ 30,144		\$ 30,144		\$ 30,144	
Avoided Capacity Costs (NPV)			\$ 1,083,342		\$ 1,083,342		\$ 1,083,342	
Avoided T&D Costs (NPV)			\$ -		\$ -		\$ -	
Incremental Costs		\$ -						\$ -
Program Overhead Costs				\$ 3,584,280		\$ 3,584,280		\$ 3,584,280
Total Benefits	\$ 1,749,847		\$ 1,113,486		\$ 1,113,486		\$ 1,113,486	
Total Costs	\$ -		\$ 5,275,555		\$ 5,358,351		\$ 3,584,280	
Test Score	N/A		0.21		0.21		0.31	

Table 6-8 PY2021 - PY2022 Residential Income Qualified Weatherization Cost Test Inputs and Results

Variable	PCT		UCT		RIM		TRC	
	Benefit	Cost	Benefit	Cost	Benefit	Cost	Benefit	Cost
Incentives	\$ 0			\$ 0		\$ 0		
Program Installation Costs				\$ 177,458		\$ 177,458		\$ 177,458
Bill Savings (NPV)	\$ 903,300							
Lost Revenue (NPV)						\$ 1,213,645		
Avoided Energy Costs (NPV)			\$ 376,405		\$ 376,405		\$ 376,405	
Avoided Capacity Costs (NPV)			\$ 17,880		\$ 17,880		\$ 17,880	
Avoided T&D Costs (NPV)			\$ -		\$ -		\$ -	
Incremental Costs		\$ -						\$ -
Program Overhead Costs				\$ 684,331		\$ 684,331		\$ 684,331
Total Benefits	\$ 903,300		\$ 394,285		\$ 394,285		\$ 394,285	
Total Costs	\$ -		\$ 861,789		\$ 2,075,434		\$ 861,789	
Test Score	N/A		0.46		0.19		0.46	

Table 6-9 PY2021 - PY2022 Home Energy Products Cost Test Inputs and Results

Variable	PCT		UCT		RIM		TRC	
	Benefit	Cost	Benefit	Cost	Benefit	Cost	Benefit	Cost
Incentives	\$ 416,554			\$ 416,554		\$ 416,554		
Program Installation Costs				\$ -		\$ -		\$ -
Bill Savings (NPV)	\$ 714,659							
Lost Revenue (NPV)						\$ 955,992		
Avoided Energy Costs (NPV)			\$ 344,653		\$ 344,653		\$ 344,653	
Avoided Capacity Costs (NPV)			\$ 37,221		\$ 37,221		\$ 37,221	
Avoided T&D Costs (NPV)			\$ -		\$ -		\$ -	
Incremental Costs		\$ 502,348						\$ 502,348
Program Overhead Costs				\$ 397,869		\$ 397,869		\$ 397,869
Total Benefits	\$ 1,131,214		\$ 381,874		\$ 381,874		\$ 381,874	
Total Costs	\$ 502,348		\$ 814,423		\$ 1,770,415		\$ 900,217	
Test Score	2.25		0.47		0.22		0.42	

Table 6-10 PY2021 - PY2022 Mid-Stream Appliances Pilot Cost Test Inputs and Results

Variable	PCT		UCT		RIM		TRC	
	Benefit	Cost	Benefit	Cost	Benefit	Cost	Benefit	Cost
Incentives	\$ 6,825			\$ 6,825		\$ 6,825		
Program Installation Costs				\$ -		\$ -		\$ -
Bill Savings (NPV)	\$ 15,088							
Lost Revenue (NPV)						\$ 19,819		
Avoided Energy Costs (NPV)			\$ 5,986		\$ 5,986		\$ 5,986	
Avoided Capacity Costs (NPV)			\$ 1,371		\$ 1,371		\$ 1,371	
Avoided T&D Costs (NPV)			\$ -		\$ -		\$ -	
Incremental Costs		\$ 20,044						\$ 20,044
Program Overhead Costs				\$ 69,887		\$ 69,887		\$ 69,887
Total Benefits	\$ 21,913		\$ 7,357		\$ 7,357		\$ 7,357	
Total Costs	\$ 20,044		\$ 76,712		\$ 96,532		\$ 89,932	
Test Score	1.09		0.10		0.08		0.08	

Table 6-11 PY2021 - PY2022 Residential New Construction Cost Test Inputs and Results

Variable	PCT		UCT		RIM		TRC	
	Benefit	Cost	Benefit	Cost	Benefit	Cost	Benefit	Cost
Incentives	\$ 44,200			\$ 44,200		\$ 44,200		
Program Installation Costs				\$ -		\$ -		\$ -
Bill Savings (NPV)	\$ 109,737							
Lost Revenue (NPV)						\$ 185,210		
Avoided Energy Costs (NPV)			\$ 85,481		\$ 85,481		\$ 85,481	
Avoided Capacity Costs (NPV)			\$ 95,216		\$ 95,216		\$ 95,216	
Avoided T&D Costs (NPV)			\$ -		\$ -		\$ -	
Incremental Costs		\$ 109,200						\$ 109,200
Program Overhead Costs				\$ 103,887		\$ 103,887		\$ 103,887
Total Benefits	\$	153,937	\$	180,698	\$	180,698	\$	180,698
Total Costs	\$	109,200	\$	148,087	\$	333,297	\$	213,087
Test Score		1.41		1.22		0.54		0.85

2022 Indiana Residential Portfolio EM&V Report

Volume II of II

Prepared for:
Indiana Michigan Power

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Prepared by:



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1. Introduction

Under contract with the Indiana Michigan Power (I&M), ADM Associates, Inc., (ADM) performed evaluation, measurement and verification (EM&V) activities to confirm the energy savings (kWh) and demand reduction (kW) realized through the energy efficiency programs that I&M implemented in Indiana in 2022.

This report is divided into two volumes providing information on the impact, process, and cost-effectiveness evaluation of the I&M portfolio of residential programs implemented in Indiana during the 2022 program year. Volume II contains chapters presenting detailed information including data collection instruments and survey results. Volume II is organized as follows:

- Chapter 2: Residential Income Qualified Weatherproofing In-Home Participant Survey Instrument
- Chapter 3: Residential Income Qualified Weatherproofing Virtual Assessment Survey Instrument
- Chapter 4: Donated Measure Recipient Survey Instrument
- Chapter 5: Home Energy Products Appliances Survey Instrument
- Chapter 6: Home Energy Products Online Marketplace Survey Instrument
- Chapter 7: Residential Income Qualified Weatherproofing In-Home Participant Survey Results
- Chapter 8: Residential Income Qualified Weatherproofing Virtual Assessment Survey Results
- Chapter 9: Donated Measure Recipient Survey Results
- Chapter 10: Home Energy Products Appliances Survey Results
- Chapter 11: Home Energy Products Online Marketplace Survey Results

See report Volume I for narrative and summary information pertaining to the evaluation methods and results.

2. Residential Income Qualified Weatherproofing In-Home Participant Survey Instrument

1. Our records indicate that your household participated in I&M's Home Energy Checkup Program by receiving an in-home energy assessment and some energy saving home improvements. Is that correct?
 1. Yes
 2. No (TERMINATE SURVEY)
 98. Don't know (TERMINATE SURVEY)

PROGRAM AWARENESS

2. How did you first learn about I&M's Home Energy Checkup Program?
 1. Email from I&M
 2. I&M postal mailing
 3. I&M Website (www.electricideas.com or indianamichiganpower.com)
 4. Friend or Relative (word-of-mouth)
 5. I&M Representative
 6. Community event
 7. Social media (Facebook, Instagram or Twitter)
 8. Other (Specify)
 98. Don't know

ENERGY AUDIT

3. Your home received a home energy checkup as part of your participation in in the program. Did you schedule the home energy checkup you received through the program?
 1. Yes
 2. No, another person in my household scheduled it
 3. I am not aware that a home energy assessment was performed

[DISPLAY IF Q3= 1 OR 2]

4. What were the main reasons you wanted to have the checkup done in your home? Select all that apply.
 1. Required to in order to receive the home improvements
 2. Recommended by contractor
 3. Recommended by friend or family

4. Wanted to better understand the condition of my home
5. Concerned about a specific issue(s) in my home
6. Save energy to save money
7. Save energy to protect the environment
8. Wanted to make my home more comfortable

[DISPLAY IF Q3= 1 OR 2]

5. Did the energy expert that did the home checkup ask you about any concerns you had about your home?
 1. Yes
 2. No
 98. Not Sure

[DISPLAY IF Q3= 1 OR 2]

6. Did the energy expert discuss the findings from the checkup with you?
 1. Yes
 2. No
 98. Not Sure

[DISPLAY IF Q3= 1 OR 2]

7. At the end of your checkup, did you receive a report or list of recommendations for making your home more energy efficient?
 1. Yes
 2. No
 98. Not Sure

[DISPLAY IF Q3= 1 OR 2]

8. On a scale of 1 to 5, where 1 means “Very dissatisfied” and 5 means “Very satisfied”, how satisfied were you with each of the following?
 1. The amount of time between scheduling and when the checkup took place
 2. The time it took to complete the checkup

3. The professionalism of the energy expert
4. The quality of the work performed during the checkup
5. The energy checkup overall

[IF ANY Q8 STATEMENT < 3]

9. Why were you dissatisfied with [PIPED RESPONSES < 3]?

10. Not including the energy efficiency improvements that were made to your home, did you learn about any tips for reducing energy use in your home during the checkup?

1. Yes
2. No
98. Don't know

[DISPLAY Q11 IF Q10= 1]

11. What tips for reducing your energy use did you learn from the home energy checkup?

[DISPLAY Q12 IF Q11 = 1]

12. Have you implemented any of the energy saving tips that you learned about from the home energy checkup?

1. Yes
2. No
98. Don't know

[DISPLAY Q13 IF Q12 = 1]

13. Which energy saving tips have you implemented?

[DISPLAY IF Q3= 1 OR 2]

14. Overall, how useful was the information provided in the home energy checkup? Would you say it was...

1. Not at all useful
2. Not very useful
3. Somewhat useful
4. Very useful

MAJOR MEASURE VERIFICATION [DISPLAY IF MAJMEAS_COUNT > 0]

15. According to our records you made the following home improvements through I&M's Home Energy Checkup Program. Is this information correct?

[SCALE: 1 = Correct, 2 = Incorrect, 98 = Don't know]

- a. **[DISPLAY IF DUCTLESS_HP = 1]** Ductless heat pump
- b. **[DISPLAY IF REFRIGERATOR = 1]** Refrigerator
- c. **[DISPLAY IF AIR SEALING = 1]** Air sealing to reduce air leakage and drafts

[DISPLAY IF ANY IN Q15= 1]

16. The next question is about the [VERIFIED MEASURES] installed through the program. How long did it take for a contractor to contact you to have those improvements made after the checkup was completed?

1. Less than 2 weeks
2. 2 – 4 weeks
3. 5- 6 weeks
4. 7- 8 weeks
5. More than 8 weeks
98. Don't know

[DISPLAY IF Q16= 1-5]

17. You said it took [PIPED Q16 RESPONSE] for a contractor to contact you about making the improvements. About how long did it take to have the work done from when you first had the energy checkup completed?

1. Less than 2 weeks
2. 2 – 4 weeks
3. 5- 6 weeks
4. 7- 8 weeks
5. More than 8 weeks
98. Don't know

DIRECT INSTALL MEASURES VERIFICATION [DISPLAY IF DI_MEAS = 1]

18. According to our records you received the following energy saving items through I&M's Home Energy Checkup Program. Is this information correct?

[SCALE: 1 = Correct, 2 = Incorrect, 98 = Don't know]

- a. **[DISPLAY IF LED_QUANT > 0]** [LED_QUANT] LED light bulbs
- b. **[DISPLAY IF BATH_AERATOR_QUANT > 0]**
[BATH_AERATOR_QUANT] energy and water efficient bathroom faucet aerators(s)
- c. **[DISPLAY IF KITCHEN_AERATOR_QUANT > 0]**
[KITCHEN_AERATOR_QUANT] energy and water efficient kitchen faucet aerator(s)
- d. **[DISPLAY IF SHOWER_QUANT > 0]** [SHOWER_QUANT] energy and water efficient showerheads
- e. **[DISPLAY IF PIPEWRAP = 1]** Pipe wrap
- f. **[DISPLAY IF APS_QUANT > 0]** [APS_QUANT] advanced power strip(s)
- g. **[DISPLAY IF NIGHTLIGHT_QUANT > 0]** [NIGHTLIGHT_QUANT] Night light(s)

[DISPLAY Q19 IF Q18A = 2]

19. How many LED light bulbs were installed in your home?

[DISPLAY Q20 IF Q18B = 2]

20. How many energy and water efficient bathroom faucet aerators were installed in your home?

[DISPLAY Q21 IF Q18C = 2]

21. How many energy and water efficient kitchen faucet aerators were installed?

[DISPLAY Q22 IF Q18D = 2]

22. How many energy and water efficient showerheads were installed?

[DISPLAY Q22 IF Q18D = 2]

23. How many advanced power strips were installed?

[DISPLAY Q22 IF Q18D = 2]

24. How many nightlights were installed?

[SET VARIABLE VALUES: IF VERIFIED (Q18 = 1), SET EQUALED TO TRACKED QUANTITY, ELSE SET EQUAL TO PROVIDED RESPONSE.]

LED_INSTALLED

BATH_INSTALLED

KITCHEN_INSTALLED

SHOWER_INSTALLED**APS_INSTALLED****NIGHTLIGHT_INSTALLED]****NIGHTLIGHTS AND APS VERIFICATION**

25. How many of the [NIGHTLIGHT_INSTALLED] night lights installed in your home replaced an existing night light?

[DISPLAY IF APS_INSTALLED > 0]

26. The advanced power strip has outlets labeled ‘Always on’, ‘Controlled’, and ‘Switched’. What is plugged into the ‘Controlled’ outlet?

1. Television
2. Computer
3. Other (Please describe)
4. Nothing
98. Don’t know

[DISPLAY IF APS_INSTALLED > 0]

27. What equipment is plugged into the outlets labeled ‘Switched’? (Select all that apply)

1. Audio/visual/entertainment equipment
2. Computer/office equipment
3. Other types of equipment
4. No equipment is plugged into the ‘Switched’ outlets [EXCLUSIVE]
98. Don’t know [EXCLUSIVE]

[DISPLAY IF APS_INSTALLED > 0]

28. Did the person who completed the energy checkup of your home install the advanced power strip?

1. Yes
2. No
98. Don’t know

[DISPLAY IF Q28 = 1]

29. Have you changed what was plugged into the advanced power strip?

1. Yes
2. No
98. Don’t know

ITEM REMOVAL

30. Have you removed or stopped using any of those items installed in your home through the program? (Select all that apply)
1. No items were removed
 2. **[LED_INSTALLED > 0]** Removed LED light bulbs
 3. **[DISPLAY IF BATH_INSTALLED > 0]** Removed bathroom faucet aerators
 4. **[DISPLAY IF KITCHEN_INSTALLED 0]** Removed kitchen faucet aerator
 5. **[DISPLAY IF SHOWER_INSTALLED > 0]** Removed showerheads
 6. **[DISPLAY IF APS_INSTALLED > 0]** Removed advanced power strips
 7. **[DISPLAY IF NIGHTLIGHT_INSTALLED > 0]** Removed night lights
 98. Don't know

[DISPLAY Q31 IF Q30 = 2]

31. How many of the **[LED_INSTALLED]** LED light bulbs were removed in your home?

[DISPLAY Q32 IF Q30 = 3]

32. How many energy and water efficient **[BATH_INSTALLED]** bathroom faucet aerators were removed in your home?

[DISPLAY Q33 IF Q30 = 4]

33. How many energy and water efficient **[KITCHEN_INSTALLED]** kitchen faucet aerators were removed?

[DISPLAY Q34 IF Q30 = 5]

34. How many energy and water efficient **[SHOWER_INSTALLED]** showerheads were removed?

[DISPLAY Q34 IF Q30 = 6]

35. How many of the **[APS_INSTALLED]** advanced power strips were removed?

[DISPLAY Q34 IF Q30 = 7]

36. How many night lights **[NIGHTLIGHT_INSTALLED]** were removed?

PROGRAM SATISFACTION

37. Using a scale where 1 means "very dissatisfied" and 5 means "very satisfied," please rate how satisfied you are with each of the following:

[SCALE: 1 = 1 (Very dissatisfied), 2 = 2, 3 = 3, 4 = 4, 5 = 5 (Very satisfied)]

- a. Performance of the items or improvements installed
- b. The effort required to sign up to participate in the program
- c. The quality of the installation work
- d. The program overall

[DISPLAY Q38 IF ANY IN Q37 < 3]

38. Why are you dissatisfied with the following aspects of the program?
39. Using the same scale where 1 means “very dissatisfied” and 5 means “very satisfied,” how satisfied are you with I&M as your electricity service provider?

[SCALE: 1 = 1 (Very dissatisfied) 1, 2 = 2, 3 = 3, 4 = 4, 5 = 5 (Very satisfied)]

40. How likely are you to recommend Home Energy Checkup Program to a friend or colleague?

[SCALE: 0 (NOT AT ALL LIKELY) – 10 (EXTREMELY LIKELY)]

41. Why do you give it that rating?

DEMOGRAPHICS/HOME CHARACTERISTICS

The next few final questions are about your household. This information will be kept confidential, but you do not need to answer any question you do not want to answer.

42. Do you own the home that participated in the Home Energy Checkup Program, rent it, or own it and rent it to someone else?
1. Own
 2. Rent
 3. Own and rent to someone else
 99. Prefer not to answer

43. Which of the following best describes your home? Is it a...

1. Manufactured home
2. Single-family house detached from any other house
3. Single family house attached to one or more other houses, for example, duplex, row house, or townhome

4. Apartment in a building with 2 to 3 units
5. Apartment in a building with 4 or more units
6. Other (SPECIFY)
99. Prefer not to answer

44. How many bathroom faucets do you have in your home?

0. 0
1. 1
2. 2
3. 3
4. 4
5. 5
6. 6
7. 7
8. 8 or more
99. Prefer not to answer

45. How many showers do you have in your home?

0. 0
1. 1
2. 2
3. 3
4. 4
5. 5
6. 6
7. 7
8. 8 or more
98. Prefer not to answer

46. When was your home built?

1. Before 1950
2. 1950 to 1959
3. 1960 to 1969
4. 1970 to 1979
5. 1980 to 1989
7. 1990 to 1999
8. 2000 to 2009
9. 2010 or later
99. Prefer not to answer

47. Including yourself, how many people currently live in your home year-round?

1. 1
2. 2

3. 3
4. 4
5. 5
6. 6
7. 7
8. 8 or more
99. Prefer not to answer

48. Which of the following best describes your annual household income?

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
99. Prefer not to answer

49. Did your home receive any assistance in paying your electricity bill in the past year?

1. Yes
2. No
98. Don't know

3. Residential Income Qualified Weatherproofing Virtual Assessment Survey Instrument

1. Thank you for taking this survey about your experience with I&M's Income Qualified Home Energy Checkup Program. Your feedback is very important and will help I&M improve the programs and services it offers customers like you.

ADM Associates is conducting this survey on I&M's behalf. Your responses are confidential and will be used for research purposes only. ADM Associates does not share survey data with third parties for marketing purposes. ADM's full privacy statement can be viewed at: admenergy.com/privacy

2. reCaptcha
3. Our records indicate that your household participated in I&M's Income Qualified Home Energy Checkup program and received a kit in the mail that contained energy efficient items for installation in your home. Is that correct?
 1. Yes
 2. No (TERMINATE SURVEY)
 98. Don't know (TERMINATE SURVEY)
4. How did you first learn about I&M's Income Qualified Home Energy Checkup program?
[RANDOMIZE ORDER OF 1 – 8]
 1. Email from I&M
 2. Mailer from I&M or message on your utility bill
 3. I&M Website (www.electricideas.com or indianamichiganpower.com)
 4. Friend or relative (word-of-mouth)
 5. Program representative
 6. Community or public event with program representatives
 7. Social media (Facebook, Instagram or Twitter)
 8. Other (Please Specify)
 98. Don't know
5. How did you sign up for the program?
 1. Using the online form on the I&M website
 2. By telephone
 3. Some other way (please describe)
6. How easy or difficult was it to sign up for the program?

1. Very easy
2. Somewhat easy
3. Somewhat difficult
4. Very difficult

[DISPLAY Q7 IF Q6 = 3 OR 4]

7. What was difficult about the sign-up process?

INSTALLATION

8. We would like to know if you have had a chance to install any of the kit items and how many of the items are currently installed.

How many of the 8 LED lightbulbs are currently installed?

0. 0
1. 1
2. 2
3. 3
4. 4
5. 5
6. 6
7. 7
8. 8
98. Don't know

[DISPLAY Q9 IF Q8 = 1 - 8]

9. What types of bulbs did you replace with the new LED light bulbs? (Please select all that apply)

1. CFLs
2. Incandescent/halogen
3. LEDs
98. Don't know

[DISPLAY Q10 IF Q8 = 0 - 7]

10. You indicated that you have not installed [8- Q8 RESPONSE] LED bulb(s). How many of those do you think you will install in the next 6 months?

0. 0 [DISPLAY IF Q8 = 0, 1, 2, 3, 4, 5, 6, 7]
1. 1 [DISPLAY IF Q8 = 0, 1, 2, 3, 4, 5, 6, 7]
2. 2 [DISPLAY IF Q8 = 0, 1, 2, 3, 4, 5,6]
3. 3 [DISPLAY IF Q8 = 0, 1, 2, 3, 4,5]

4. 4 [DISPLAY IF Q8 = 0, 1, 2, 3,4]
5. 5 [DISPLAY IF Q8 = 0, 1, 2,3]
6. 6 [DISPLAY IF Q8 = 0,1,2]
7. 7 [DISPLAY IF Q8 = 0,1]
8. 8 [DISPLAY IF Q8 = 0]
98. Don't know

[DISPLAY Q11 IF Q8 = 0, 1, 2, 3, 4, 5, 6, OR 7]

11. Why have you not installed all of the LED bulbs yet? (Select all that apply)

1. I did not receive 8 bulbs
2. I have not had the time to install them
3. I am not interested in installing them
4. I am waiting for light bulbs to burn out before replacing them
5. I don't like them
6. Some of the bulbs were broken/did not work
6. Other (Please specify)
98. Don't know

12. Before you received the energy efficiency kit, what share of the light bulbs in your home were LED? Your best guess is fine.

1. None
2. Some but less than 25%
3. Between 25% and 75%
4. More than 75%
98. Don't know

13. Have you started using the advanced power strip that you received in the kit?

1. Yes
2. No
98. Don't know

[DISPLAY Q14 IF Q13 = 2]

14. Why are you not using the Advanced Power Strip? (Select all that apply)

1. The power turned off while I was using equipment that was plugged into it
2. I'm not sure how to use it
3. I'm not interested in using it
4. I didn't have a need for it
5. Other (Please specify)
98. Don't know

[DISPLAY Q15 IF Q13 =2]

15. Do you plan to start using the advanced power strip in the next six months?

1. Yes
2. No

[IF Q13 = 1 , SET APS USE TO

“IS PLUGGED INTO”,

IF Q15 =1, SET APS USE TO,

“WILL YOU PLUG INTO”]

[DISPLAY IF Q13 = 1 OR Q15 =1]

16. The advanced power strip has outlets labeled ‘Always on’, ‘Controlled’, and ‘Switched’.
What [APS USE] the ‘Controlled’ outlet?

1. Television
2. Computer
3. Other (Please describe)
4. Nothing
98. Don’t know

[DISPLAY IF Q13 = 1 OR Q15 =1]

17. What equipment [APS USE] the outlets labeled ‘Switched’? (Select all that apply)

1. Audio/visual/entertainment equipment
2. Computer/office equipment
3. Other types of equipment
4. No equipment is plugged into the ‘Switched’ outlets [EXCLUSIVE]
98. Don’t know [EXCLUSIVE]

[DISPLAY Q18 IF KIT = ELEC]

18. How many of the two showerheads are currently installed?

0. 0
1. 1
2. 2
98. Don’t know

[DISPLAY Q19 IF Q18 = 0, 1]

19. You indicated that you have not installed [2 - Q18 RESPONSE] showerheads How many of those do you think you will install in the next 6 months?

- 0. [DISPLAY IF Q18 = 0 OR 1] 0
- 1. [DISPLAY IF Q18 = 0 OR 1] 1
- 2. [DISPLAY IF Q18 = 0] 2
- 98. Don't know

[DISPLAY Q20 IF Q18 = 0, 1]

20. Why have you not installed both of the showerheads? (Select all that apply)
[MULTISELECT]

- 1. I did not receive both showerheads
- 2. I have not had the time to install them
- 3. I am not interested in installing them
- 4. I do not have enough showers to use them
- 5. I did not know how to install the showerheads
- 6. I need physical assistance or tools to install them
- 7. I don't like them
- 8. Other (Please specify)
- 98. Don't know

[DISPLAY Q21 IF KIT = ELEC]

21. Is the kitchen faucet aerator currently installed?

- 1. Yes
- 2. No
- 98. Don't know

[DISPLAY Q22 IF Q21 =2]

22. Do you plan to install the kitchen faucet aerator in the next 6 months?

- 1. Yes
- 2. No

[DISPLAY Q23 IF Q21 =2]

23. Why have you not installed the kitchen faucet aerator? (Select all that apply)
[MULTISELECT]

- 1. I did not receive it
- 2. I have not had the time to install it
- 3. I am not interested in installing it
- 4. I did not know how to install it
- 5. I need physical assistance or tools to install it
- 6. I don't like it

- 7. Other (Please specify)
- 98. Don't know

[DISPLAY Q24 IF KIT = ELEC]

24. How many of the two bathroom faucet aerators you received are currently installed?

- 0. 0
- 1. 1
- 2. 2
- 98. Don't know

[DISPLAY Q25 IF Q24 = 0, 1]

25. You indicated that you have not installed [2 - Q24 RESPONSE] bathroom faucet aerator(s). How many of those do you think you will install in the next 6 months?

- 0. **[DISPLAY IF Q18 = 0 OR 1]** 0
- 1. **[DISPLAY IF Q18 = 0 OR 1]** 1
- 2. **[DISPLAY IF Q18 = 0]** 2
- 98. Don't know

[DISPLAY Q26 IF Q24 =0, 1]

26. Why have you not installed both of the bathroom faucet aerators? (Select all that apply)
[MULTISELECT]

- 1. I did not receive them
- 2. I have not had the time to install them
- 3. I am not interested in installing them
- 4. I don't like them
- 5. I did not know how to install them
- 6. I need physical assistance or tools to install them
- 7. Other (Please specify)
- 98. Don't know

27. How many of the two LED night lights are currently installed?

- 0. 0
- 1. 1
- 2. 2
- 98. Don't know

[DISPLAY Q28 IF Q27= 0, 1]

28. You indicated that you have not installed [2 - Q27 RESPONSE] LED night light(s). How many of those do you think you will install in the next 6 months?

- 0. [DISPLAY IF Q18 = 0 OR 1] 0
- 1. [DISPLAY IF Q18 = 0 OR 1] 1
- 2. [DISPLAY IF Q18 = 0] 2
- 98. Don't know

[DISPLAY Q29 IF Q27 = 0,1]

29. Why have you not installed both of the LED night lights? (Select all that apply)
[MULTISELECT]

- 1. I did not receive them
- 2. I have not had the time to install them
- 3. I am not interested in installing them
- 4. I don't like them
- 5. I didn't need them
- 6. Other (Please specify)
- 98. Don't know

[DISPLAY Q30 IF Q27 = 1 OR 2]

30. When you installed the LED night light(s), did you replace a night light(s) that you already had, or did you plug it into an empty outlet?

- 1. Replaced a night light
- 2. Installed the night light in an empty socket
- 3. [DISPLAY IF Q27 = 2] Replaced one night light and installed the other in an empty socket
- 98. Don't know

[DISPLAY Q31 IF Q27 = 2]

31. Did either of the night lights that you installed replace a night light that you already had or did they plug into unused outlets?

- 1. Neither replaced a night light they already had
- 2. One replaced a night light they already had
- 3. Both replaced a night light they already had
- 98. Don't know

[DISPLAY Q32 IF Q28 = 1 OR 2]

32. When you install the nightlight(s) you haven't already installed, will you...

- 1. Replace another night light
- 2. Install in an empty socket
- 3. [DISPLAY IF Q28 = 2] Replace one night light and install the other in an empty socket
- 98. Don't know

EXPERIENCE WITH VIRTUAL AUDIT

33. The next few questions are about the virtual audit of your home. Were you the person in your household who participate in the virtual audit?

1. Yes
2. No
98. Don't know

[DISPLAY Q34 IF Q33 = 1]

34. About how long did the virtual audit take?

1. 15 minutes or less
2. 15 to 30 minutes
3. 30 to 45 minutes
4. 45 to 60 minutes
5. More than 60 minutes
98. Don't know

[DISPLAY Q35 IF Q33 = 1]

35. Did the person you spoke with provide any energy saving tips?

1. Yes
2. No

[DISPLAY Q36 IF Q35 = 1]

36. What energy saving tips do you recall?

[DISPLAY Q37 IF Q33 = 1]

37. Overall, how useful was the virtual audit for helping you understand ways you can save energy?

1. 1 (Not at all useful)
2. 2
3. 3
4. 4
5. 5 (Very useful)

[DISPLAY Q38 IF Q37= 1, 2, OR 3]

38. Why do you think the audit was not very useful for helping you understand ways you can save energy?

PARTICIPANT SATISFACTION

39. Using the scale below, please rate how dissatisfied or satisfied you are with each of the following:

[SCALE: 1 = 1 (VERY DISSATISFIED), 2 = 2, 3 = 3, 4 = 4, 5 = 5 (VERY SATISFIED)]

- a. The energy checkup service, overall
- b. The information provided through the virtual audit
- c. The kit items that you received

[DISPLAY Q40 IF ANY IN Q39 < 3]

40. Why are you dissatisfied with those aspects of the program you mentioned?

[TEXT BOX]

41. Using the scale below, how dissatisfied or satisfied are you with I&M as your electricity service provider?

[SCALE: 1 = 1 (VERY DISSATISFIED) 1, 2 = 2, 3 = 3, 4 = 4, 5 = 5 (VERY SATISFIED), 98 = DON'T KNOW]

DEMOGRAPHICS/HOME CHARACTERISTICS

42. The next few questions are about your household. Like all of your responses, this information will be kept confidential but you do not need to answer any question you do not want to answer.

43. Do you own the home that you completed the virtual assessment for, rent it, or own it and rent it to someone else?

1. Own
2. Rent
3. Own and rent to someone else
99. Prefer not to answer

44. Which of the following best describes your home? Is it a...

1. Manufactured home
2. Single-family house detached from any other house
3. Single family house attached to one or more other houses, for example, duplex, row house, or townhome
4. Apartment in a building with 2 to 3 units

5. Apartment in a building with 4 or more units
6. Other (Please Specify)
99. Prefer not to answer

45. When was your home built?

1. Before 1950
2. 1950 to 1959
3. 1960 to 1969
4. 1970 to 1979
5. 1980 to 1989
7. 1990 to 1999
8. 2000 to 2009
9. 2010 or later
99. Prefer not to answer

46. What is the main fuel used for heating your home?

1. Electricity
2. Natural Gas
3. Propane
4. Something else
5. Don't heat home
99. Prefer not to answer

47. What fuel does your main water heater use?

1. Electricity
2. Natural Gas
3. Propane
4. Something else
5. Don't heat home
99. Prefer not to answer

48. Including yourself, how many people currently live in your home year-round?

1. 1
2. 2
3. 3
4. 4
5. 5
6. 6

7. 7
8. 8 or more
99. Prefer not to answer

49. How many bathroom faucets do you have in your home?

0. 0
1. 1
2. 2
3. 3
4. 4
5. 5
6. 6
7. 7
8. 8 or more
99. Prefer not to answer

50. How many showers do you have in your home?

0. 0
1. 1
2. 2
3. 3
4. 4
5. 5
6. 6
7. 7
8. 8 or more
98. Prefer not to answer

51. Which of the following best describes your annual household income?

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
99. Prefer not to answer

4. Donated Measure Recipient Survey Instrument

INTRODUCTION

1. Thank you for taking this quick survey about the energy efficient products you received from Indiana Michigan Power (I&M).

Your feedback is very important to us and will help us improve our programs for customers like you. This survey should take about 5 minutes.

ADM Associates is conducting this survey on I&M's behalf. Your responses are confidential and will be used for research purposes only. ADM Associates does not share survey data with third parties for marketing purposes. ADM's full privacy statement is linked here: admenergy.com/privacy

At the end of the survey, you will be asked to provide information to get the \$10 gift card.

Each household may only receive one gift card. To receive the gift card you must provide the mailing address for an I&M residential account holder at the end of the survey. The gift card will be mailed to that address.

When you take the survey, once you have entered a response for each question, use the arrow at the bottom right of the screen to get to the next question. Click the box below and then click on the arrow at the bottom right to continue with the survey.

2. CAPTCHA ELEMENT

INITIAL SCREENING

3. Is your home located in Indiana or Michigan?
 1. Indiana
 2. Michigan
 3. Neither state (TERMINATE SURVEY)

[TERMINATION STATEMENT]

Thank you for providing that information. Unfortunately, you do not qualify for this survey.

4. Does your home receive electricity service from Indiana Michigan Power (I&M)?
 1. Yes
 2. No (TERMINATE SURVEY)

98. Not sure (TERMINATE SURVEY)

5. Which of the following free energy efficient products did you receive? Please select all that apply.

Please note that both products shown below may not have been available at the time you received the free products.

1. Advanced power strip(s)
3. Door weatherstripping
4. Did not receive any of these items (TERMINATE SURVEY)

[TERMINATION STATEMENT]

Thank you. Unfortunately, you do not qualify for this survey.

RECEIPT OF MEASURES

6. How many packages of door weatherstripping did you receive?

1. One package (Enough for one door)
2. Two packages (Enough for two doors)

7. What type of organization did you receive the products from?

1. A community action agency
2. Food bank / food pantry
3. A housing / apartment complex
4. A church or other religious organization
5. School
6. City government
7. Other (What type?)
98. Don't recall

APS [DISPLAY IF Q5 =1]

8. The next few questions are about your use of the advanced power strip that you received.

Are you currently using the advanced power strip?

1. Yes
2. No

[DISPLAY IF Q8 =2]

9. Why are you not using the advanced power strip? (Select all that apply)

1. The power turned off while I was using equipment that was plugged into it
2. I'm not sure how to use it
3. I'm not interested in using it
4. I didn't have a need for it
5. Other (Please specify)
98. Don't know

[DISPLAY IF Q8 =2]

10. Do you plan to start using the advanced power strip in the next six months?

1. Yes
2. No

[IF Q8 = 1 , SET APS USE TO

“is plugged into”,

IF Q10 =1, SET APS USE TO,

“will you plug into”

|

[DISPLAY IF Q8 = 1 OR Q10 =1]

11. The advanced power strip has outlets labeled ‘Always on’, ‘Controlled’, and ‘Switched’.
What [APS USE] the ‘Controlled’ outlet?

1. Television
2. Computer
3. Other (Please describe)
4. Nothing
98. Don't know

[DISPLAY IF Q8 = 1 OR Q10 =1]

12. What equipment [APS USE] the outlets labeled ‘Switched’? (Select all that apply)

1. Audio/visual/entertainment equipment
2. Computer/office equipment
3. Other types of equipment
4. No equipment is plugged into the ‘Switched’ outlets [EXCLUSIVE]
98. Don’t know [EXCLUSIVE]

13. Did you watch the YouTube advanced power strip installation video?

1. Yes
2. No

[DISPLAY IF Q13 = 1]

14. How easy were the instructions to understand?

1. Very easy to understand
2. Somewhat easy to understand
3. Hard to understand

[DISPLAY IF Q14 = 2 OR 3]

15. What would make the YouTube instructions video better?

16. Had you heard of advanced power strips before you received one for free?

1. Yes
2. No
98. Don't know

[DISPLAY IF Q16= 1]

17. Had you purchased an advanced power strip before you received one for free?

1. Yes
2. No
98. Don't know

18. Do you think you would have purchased an advanced power strip in the next 12 months if you had not got it for free?

1. Definitely would have
2. Probably would have
3. Probably would NOT have
4. Definitely would NOT have

WEATHERSTRIPPING [DISPLAY IF Q6 = 1 OR Q6 = 2]

[DISPLAY IF Q6 = 1]

19. Have you installed the door weatherstripping that you received?

1. Yes
2. No

[DISPLAY IF Q19 = 2]

20. Why haven't you installed the door weatherstripping? (Select all that apply)

1. I don't own the property
2. I'm not sure how to install it
3. I'm not interested in installing it
4. My door weatherstripping doesn't need to be replaced
5. Other (Please specify)
98. Don't know

[DISPLAY IF Q19 = 2]

21. Do you plan to install the weatherstripping in the next six months?

1. Yes

2. No

[DISPLAY IF Q6 = 2]

22. How many of the two packages of door weatherstripping that you received have you installed on a door?

- 0. 0
- 1. 1
- 2. 2

[DISPLAY IF Q22 = 0, 1] [DISPLAYS QUESTION IF FEWER THAN TWO PACKS OF WEATHERSTRIPPING ARE INSTALLED]

23. It sounds like you have [2- Q22 RESPONSE] pack(s) of weatherstripping left to install. How many will you install in your home in the next 6 months?

- 0. 0 **[DISPLAY IF Q22= 0 OR 1 OR 2]**
- 1. 1 **[DISPLAY IF Q22 = 0 OR 1]**
- 2. 2 **[DISPLAY IF Q22 = 0]**
- 98. Don't know

[DISPLAY IF Q22 < 2]

24. Why haven't you installed some or all of the door weatherstripping? (Select all that apply)

- 1. I don't own the property
- 2. I'm not sure how to install it
- 3. I'm not interested in installing
- 4. My door weatherstripping doesn't need to be replaced
- 5. Other (Please specify)
- 98. Don't know

25. Did you watch the YouTube weatherstripping installation video?

- 1. Yes
- 2. No

[DISPLAY IF Q25= 1]

26. How easy were the instructions to understand?

- 1. Very easy to understand
- 2. Somewhat easy to understand
- 3. Hard to understand

[DISPLAY IF Q26 = 2 OR 3]

27. What would make the YouTube instructions video better?
28. Were you thinking about installing door weatherstripping before you received it for free?
1. Yes
 2. No
 98. Don't know
29. Had you installed weatherstripping on a door in your home before you received it for free?
1. Yes
 2. No
 98. Don't know
30. Do you think you would have installed weatherstripping in the next 12 months if you had not got it for free?
1. Definitely would have
 2. Probably would have
 3. Probably would NOT have
 4. Definitely would NOT have

DEMOGRAPHICS/HOME CHARACTERISTICS

31. The next few questions are about your household. As a reminder, this information will be kept confidential, but you do not need to answer any question you do not want to answer.

32. Do you own your home or rent it?

1. Own
2. Rent
98. Don't know
99. Prefer not to answer

33. Which of the following best describes your home? Is it a...

1. Manufactured home
2. Single-family house detached from any other house
3. Single family house attached to one or more other houses, for example, duplex, row house, or townhome
4. Apartment in a building with 2 to 3 units
5. Apartment in a building with 4 or more units
6. Other (Please Specify)
98. Don't know
99. Prefer not to answer

34. What is the main type of air conditioning that you use in your home?

1. Central air conditioning
2. Room or window air conditioner(s)
3. Home does not have air conditioning
98. Not sure

35. Does the main heating system in your home use electricity?

1. Yes
2. No
3. Home does not have heating
98. Not sure

[DISPLAY IF Q35= 1]

36. What kind of electric heating system is your main heating system?

1. Electric resistance furnace, cable, or baseboard heating

2. An air source heat pump
3. Some other kind of heating system
98. Don't know

37. Including yourself, how many people currently live in your home year-round?

1. 1
2. 2
3. 3
4. 4
5. 5
6. 6
7. 7
8. 8 or more
99. Prefer not to answer

38. Is your total annual household income more or less than the amount shown below?

[RESPONSE OPTIONS: 1 = Less than the amount shown, 2 = More than the amount shown, 98 = Don't know, 99 = Prefer not to answer]

[Note to reviewer, the amounts shown below are 200% of federal poverty level.]

- a. **[DISPLAY IF Q34= 1]** \$27,180
- b. **[DISPLAY IF Q34 = 2]** \$36,620
- c. **[DISPLAY IF Q34 = 3]** \$46,060
- d. **[DISPLAY IF Q34 = 4]** \$55,500
- e. **[DISPLAY IF Q34 = 5]** \$64,940
- f. **[DISPLAY IF Q34 = 6]** \$74,380
- g. **[DISPLAY IF Q34 = 7]** \$83,820
- h. **[DISPLAY IF Q34 = 8]** \$93,260

GIFT CARD

39. Would you prefer to get an Amazon gift card or a Visa gift card?

1. Amazon
2. Visa
3. Neither, please do not provide me a gift card.

[DISPLAY IF Q39 = 1 OR 2]

40. Please provide your name and address you would like us to send the gift card to.

The address must be for a residence that receives service from I&M.

Name:

Address:

Address 2:

City:

State:

Zip Code:

You must provide your address and click the next button below to receive the gift card. Please allow 4-8 weeks to receive the gift card.

5. Home Energy Products Appliances Survey Instrument

1. Our records indicate that your household participated in I&M's Home Energy Products Program by receiving a rebate from I&M for a(n) [ALL_MEASURES].

[DISPLAY IF HVAC_PROJ_1/ OR 2 = 1] This program is also known as the HVAC Rebate Program. Your contractor may have received the rebate and passed the cost savings on to you.

Is that correct?

1. Yes
2. No [TERMINATE SURVEY]
98. Don't know [TERMINATE SURVEY]

2. To begin with, we would like to verify the equipment that you received a rebate or discount for. In 2021, did you receive a rebate for: [SCALE: 1 = YES, 2 = NO, 98 = DON'T KNOW]

- a. [IF AC = 1] An air conditioner
- b. [IF ASHP = 1] Air source heat pump heating and cooling system
- c. [IF DHP = 1] A ductless heat pump
- d. [IF HPWH = 1] A heat pump water heater
- e. [IF ECM = 1] Electronically commutated motor (on an efficient furnace)
- f. [IF TSTAT = 1] A Wi-Fi / smart thermostat
- g. [IF DEHUMID = 1] An ENERGY STAR dehumidifier
- h. [IF POOLPUMP = 1] An ENERGY STAR pool pump
- i. [IF GHSP = 1] A ground source heat pump
- j. [IF ELEC_WATERHEATER] A high efficiency electric water heater

[TERMINATE SURVEY IF NONE IN Q2 = 1]

PROGRAM AWARENESS

3. How did you first learn about Home Energy Products Program?
1. Newspaper/magazine/print media
 2. Mailer from I&M
 3. I&M Website (www.electricideas.com or indianamichiganpower.com)
 4. Friend or Relative (word-of-mouth)
 5. Contractor or plumber
 6. TV/Radio ad
 7. I&M Representative
 8. I&M Newsletter
 9. Retailer/store
 10. Community event
 11. Social media (Facebook, Instagram or Twitter)
 12. Home Energy Report
 14. Other (SPECIFY)
 98. Don't know

[NOTE THAT Q4 – Q7 ARE ASKED ABOUT ONE MEASURE INSTALLED IF THE CUSTOMER PURCHASED MULTIPLE MEASURES]

The next few questions are about the purchase of the [EFF_MEASURE1].

4. Did you know about I&M's Home Energy Products Program...
1. Before starting the process of purchasing the [EFF_MEASURE1]
 2. At the time you made the purchase decision
 3. After researching the product but before deciding to purchase
 4. After deciding to purchase the [EFF_MEASURE1]
 98. Don't know
5. Why did you select this model or type of [EFF_MEASURE1]? (Please select all that apply) [MULTI-SELECT]
1. It was a good price
 2. There was a rebate for it
 3. It costs less to operate it
 4. It's good for the environment
 5. It was all that was available/only choice
 6. The contractor/retailer recommended it
 7. It had features I wanted
 8. It was the right size, color
 9. Wanted that brand
 10. It had an ENERGY STAR label
 11. Other (Please specify)
 98. Don't know

6. When you were deciding to purchase the [EFF_MEASURE1], where did you get information about what to buy? (Please select all that apply) [MULTI-SELECT]

1. Retailers
2. Installation contractors
3. Friend, neighbor, relative or co-worker
4. I&M website
5. Internet
6. Consumer reports or other product magazines
7. Newspaper
8. Radio
9. Television
10. Other (Please specify)
11. Did not look for any information about what to buy
98. Don't know

7. Where did you obtain the rebate application?

1. From the I&M website (www.electricideas.com or indianamichiganpower.com)
2. From another website
3. In a retail store
4. From a contractor
5. Other (Please Specify)
98. Don't know

The next few questions are about the equipment you purchased and received a rebate for.

AC SECTION

[DISPLAY IF Q2, "AC" = 1]

8. Is the central air conditioner that you received a rebate for currently installed and working?

1. Yes
2. No
98. Don't know

[DISPLAY Q9 IF Q8 = 2]

9. What is wrong with the air conditioner or why is it not installed?

[DISPLAY IF Q2, "AC" = 1]

10. Was there a cooling system already installed in the location where the new air conditioner was installed?

1. Yes
2. No
98. Don't know

[DISPLAY Q11 IF Q10=1]

11. Was the cooling equipment that you replaced a central air condition?

1. Yes
2. No
98. Don't know

[DISPLAY Q12 IF Q11 = 1]

12. Thinking about the old air conditioner you replaced, which of the following best describes when and how it was originally installed in.

1. You bought the house new and the unit was original equipment when you bought it.
2. It was original equipment in a newly constructed home when the previous owner bought it.
3. It was there when you bought the house from a previous owner.
4. You or your family installed the old unit.
5. Other (Please specify)

[DISPLAY Q13 IF Q11=1]

13. Was the air conditioner working at the time it was replaced?

1. Yes
2. No

[DISPLAY Q14 IF Q13 = 1]

14. How much longer do you think the air conditioner you replaced would have operated if it had not been replaced?

1. Less than 2 years
2. 2 to 4 years
3. 5 to 10 years
4. More than 10 years
98. Don't know

[DISPLAY Q15 IF Q13= 2]

15. Did you get an estimate of how much it would have cost to fix the old equipment before you decided to install a new unit?

1. Yes
2. No

[DISPLAY Q16 IF Q15 = 2]

16. How much was the repair estimate?

[DISPLAY Q17 IF Q12 = 3]

17. Do you know the approximate age of the old cooling equipment that was replaced?

1. Yes (How old was it?)
2. No

[DISPLAY Q18 IF Q17 = 1]

18. How were you able to determine the age of the old cooling equipment?

1. Documentation included with the unit
2. Contractor knew or estimated it
3. Age of units was included in description of home when we bought it
4. Previous owner told us
5. Other (Please specify)

[DISPLAY Q19 IF Q17= 2]

19. Which of the following do you think is the most likely age of the old cooling equipment:

1. More than 20 years old
2. 15 – 20 years old
3. 10 – 15 years old
4. Less than 10 years old

[DISPLAY Q20 IF Q12 = 4]

20. About what year did you install the old cooling equipment?

[DISPLAY Q21 IF Q11 = 1]

21. Please provide the seasonal energy efficiency ratio or SEER of the air conditioner that you replaced?

1. SEER [TEXT BOX]
98. Don't know

HEAT PUMP SECTION

[DISPLAY IF Q2,, “DHP” = 1 OR ASHP = “1” OR GSHP = “1”]

22. Is the [HEATPUMP_TYPE] that you received a rebate for currently installed and working?

1. Yes
2. No

[DISPLAY Q23 IF Q22 = 2]

23. What is wrong with the [HEATPUMP_TYPE] or why is it not installed?

[DISPLAY IF Q2,, “DHP” = 1 OR ASHP = “1” OR GSHP = “1”]

24. Did the [HEATPUMP_TYPE] replace some old heating and cooling equipment?

1. Yes, it replaced both cooling and heating equipment
2. Yes, it replaced cooling equipment
3. Yes, it replaced heating equipment
4. No, it was a new installation that did not replace any equipment

[DISPLAY Q25 IF Q24 = 1]

25. Did the [HEATPUMP_TYPE] replace a heat pump?

1. Yes
2. No
98. Don't know

HEAT PUMP REPLACEMENT SECTION

[DISPLAY Q26 IF Q 25= 1, REPLACED HEAT PUMP]

26. Thinking about the old heat pump you replaced, which of the following best describes when and how it was originally installed.

1. You bought the house new and the unit was original equipment when you bought it.
2. It was original equipment in a newly constructed home when the previous owner bought it.
3. It was there when you bought the house from a previous owner.
4. You or your family installed the old unit.
5. Other (Please specify)

[DISPLAY Q27 IF Q 25= 1, REPLACED HEAT PUMP]

27. Was the old heat pump working at the time it was replaced?

1. Yes
2. No

[DISPLAY Q28 IF Q26 = 3]

28. Do you know the approximate age of the old heat pump that was replaced?

1. Yes (How old was it?)
2. No

[DISPLAY Q29 IF Q28 = 1]

29. How were you able to determine the age of the old heat pump?

1. Documentation included with the unit
2. Contractor knew or estimated it
3. Age of units was included in description of home when we bought it
4. Previous owner told us
5. Other (Please specify)

[DISPLAY Q30 IF Q28= 2]

30. Which of the following do you think is the most likely age of the old heat pump:

1. More than 20 years old
2. 15 – 20 years old
3. 10 – 15 years old
4. Less than 10 years old

[DISPLAY Q31 IF Q26 = 4]

31. About what year did you install the old heat pump?

[DISPLAY Q32 IF Q 25= 1, REPLACED HEAT PUMP]

32. Please provide the seasonal energy efficiency ratio or SEER of the heat pump that you replaced.

1. SEER [TEXT BOX]
98. Don't know

[DISPLAY Q33 IF Q 25= 1, REPLACED HEAT PUMP]

33. Please provide the Heating Seasonal Performance Factor or HSPF of the heat pump that you replaced.

1. HSPF [TEXT BOX]
98. Don't know

OTHER HEATING EQUIPMENT REPLACEMENT SECTION

[DISPLAY Q34 IF [Q24=1 AND Q25 <>1] OR Q24=3 AND Q25 <>1], REPLACED HEATING EQUIPMENT]

34. What type of heating system did you have before you installed the [HEATPUMP_TYPE]?

1. Electric resistance heating
2. An air source heat pump
3. Some other kind of heating system
4. No heating equipment
98. Don't know

[DISPLAY Q35 IF Q34=1]

35. Was your electric resistance heating system an electric furnace or baseboard heating?

1. Electric furnace
2. Electric baseboard heating
98. Don't know

[DISPLAY Q36 IF Q34 = 3]

36. What type of heating system did you have before installing the [HEATPUMP_TYPE]?

[DISPLAY Q37 IF [Q24=1 OR Q24=3, REPLACED HEATING EQUIPMENT]

37. Thinking about the old heating system you replaced, which of the following best describes when and how it was originally installed in.

1. You bought the house new and the unit was original equipment when you bought it.
2. It was original equipment in a newly constructed home when the previous owner bought it.
3. It was there when you bought the house from a previous owner.
4. You or your family installed the old unit.
5. Other (Please specify)

[DISPLAY Q38 IF [Q24=1 OR Q24=3] AND[Q25 <>1], REPLACED HEATING EQUIPMENT]

38. Was the old heating system working at the time it was replaced?

1. Yes
2. No

[DISPLAY Q39 IF Q37 = 3]

39. Do you know the approximate age of the old heating equipment that was replaced?

1. Yes (How old was it?)
2. No

[DISPLAY Q40 IF Q39 = 1]

40. How were you able to determine the age of the old heating equipment?

1. Documentation included with the unit
2. Contractor knew or estimated it
3. Age of units was included in description of home when we bought it
4. Previous owner told us
5. Other (Please specify)

[DISPLAY Q41 IF Q39 = 2]

41. Which of the following do you think is the most likely age of the old heating equipment:

1. More than 20 years old
2. 15 – 20 years old
3. 10 – 15 years old
4. Less than 10 years old

[DISPLAY Q42 IF Q37 = 4]

42. About what year did you install the old heating equipment?

OTHER COOLING EQUIPMENT REPLACEMENT SECTION

[DISPLAY Q43 IF [Q24=1 AND Q25 <>1] OR Q24=2, REPLACED COOLING EQUIPMENT]

43. Was the cooling equipment that you replaced a central air condition?

1. Yes
2. No
98. Don't know

[DISPLAY Q44 IF [Q24=1 OR Q24=2, REPLACED COOLING EQUIPMENT]

44. Thinking about the old cooling equipment you replaced, which of the following best describes when and how it was originally installed in.

1. You bought the house new and the unit was original equipment when you bought it.
2. It was original equipment in a newly constructed home when the previous owner bought it.
3. It was there when you bought the house from a previous owner.
4. You or your family installed the old unit.
5. Other (Please specify)

[DISPLAY Q38 IF [Q24=1 OR Q24=2 AND[Q25 <>1], REPLACED HEATING EQUIPMENT]

45. Was the old cooling system working at the time it was replaced?

1. Yes
2. No

[DISPLAY Q46 IF Q44 = 3]

46. Do you know the approximate age of the old cooling equipment that was replaced?

1. Yes (How old was it?)
2. No

[DISPLAY Q47 IF Q46 = 1]

47. How were you able to determine the age of the old cooling equipment?

1. Documentation included with the unit
2. Contractor knew or estimated it
3. Age of units was included in description of home when we bought it
4. Previous owner told us
5. Other (Please specify)

[DISPLAY Q48 IF Q46 = 2]

48. Which of the following do you think is the most likely age of the old cooling equipment:

1. More than 20 years old
2. 15 – 20 years old
3. 10 – 15 years old
4. Less than 10 years old

[DISPLAY Q49 IF Q44 = 4]

49. About what year did you install the old cooling equipment?

[DISPLAY Q50 IF [Q24=1 AND Q25 <>1] OR Q24=2, REPLACED COOLING EQUIPMENT]

50. Please provide the seasonal energy efficiency ratio or SEER of the air conditioner that you replaced?

- 1. SEER [TEXT BOX]
- 98. Don't know

WIFI THERMOSTAT SECTION

[DISPLAY IF Q2, "WIFI THERMOSTAT" = 1]

51. Is the Wi-Fi thermostat that you received a rebate for currently installed and working?

- 1. Yes
- 2. No
- 98. Don't know

[DISPLAY Q52 IF Q51 = 2]

52. What is wrong with the Wi-Fi thermostat or why is it not installed?

[DISPLAY IF Q2, "WIFI THERMOSTAT" = 1]

53. What type of thermostat did the Wi-Fi thermostat replace?

- 1 A programmable thermostat that allows you to schedule the temperature settings for different times of the day
- 2 A standard thermostat that lets you set on/off temperatures
- 3 A different Wi-Fi smart thermostat
- 98 Don't know

[DISPLAY Q54 IF Q53 = 1]

54. Was the programmable thermostat that was replaced programmed with scheduled times to adjust the temperature at the time you replaced it with the Wifi thermostat?

- 1. Yes
- 2. No
- 98. Don't know

[DISPLAY IF Q2, "WIFI THERMOSTAT" = 1]

55. Does the Wi-Fi thermostat control a central cooling system, a central heating system, or both?

1. Central cooling system
2. Central heating system
3. Both cooling and heating systems
98. Don't know

[DISPLAY Q56 IF Q55 = 1 OR 3]

56. Is your central air conditioning system a heat pump?

1. Yes
2. No
98. Don't know

[DISPLAY Q57 IF Q55 = 2 OR 3]

57. What type of central heating system do you have?

1. Central furnace
2. Heat pump
3. Other (Please specify)
98. Don't know

[DISPLAY Q58 IF Q55 = 2 OR 3]

58. What is the main fuel used by the central heating system?

1. Electricity
2. Natural Gas
3. Propane
4. Something else (Please specify)
98. Don't know

DEHUMIDIFIER SECTION

[DISPLAY IF Q2, "DEHUMID" = 1]

59. Is the ENERGY STAR dehumidifier that you received a rebate for currently working?

1. Yes
2. No
98. Don't know

[DISPLAY Q60 IF Q59 = 2]

60. What is wrong with the dehumidifier?

[DISPLAY IF Q2, "DEHUMID" = 1]

61. Did the rebated dehumidifier...
1. Replace a functioning unit
 2. Replace a broken unit
 3. It was not a replacement
 98. Don't know

HEAT PUMP WATER HEATER

[DISPLAY IF Q2, "HPWH"= 1]

62. Is the heat pump water heater that you received a rebate for currently installed and working?
1. Yes
 2. No
 98. Don't know

[DISPLAY Q63 IF Q62 = 2]

63. What is wrong with the heat pump water heater or why is it not installed?

[DISPLAY IF Q2,, "HPWH"= 1]

64. Was this water heater purchased...
1. To replace a functioning unit
 2. To replace a broken unit
 3. Not a replacement
 98. Don't know

HIGH EFFICIENCY WATER HEATER

[DISPLAY IF Q2, "ELEC_WATERHEATER"= 1]

65. Is the high efficiency electric water heater that you received a rebate for currently installed and working?
1. Yes
 2. No
 98. Don't know

[DISPLAY Q63 IF Q62 = 2]

66. What is wrong with the high efficiency electric water heater or why is it not installed?

[DISPLAY IF Q2, "ELEC_WATERHEATER"= 1]

67. Was this water heater purchased...
1. To replace a functioning unit
 2. To replace a broken unit
 3. Not a replacement
 98. Don't know

ECM SECTION

[DISPLAY IF Q2, "ECM" = 1]

68. Was the ECM motor that you installed included with a new furnace or did you just replace the motor?
1. Installed new furnace
 2. Installed just the motor
 98. Don't know

POOL PUMP SECTION

[DISPLAY IF Q2, "POOL PUMP" = 1]

69. Is the ENERGY STAR pool pump that you received a rebate for currently installed and working?
1. Yes
 2. No
 98. Don't know

[DISPLAY Q70 IF Q69 = 2]

70. What is wrong with the ENERGY STAR pool pump or why is it not installed?

[DISPLAY IF Q2, "POOL PUMP" = 1]

71. Did the ENERGY STAR pool pump replace an existing pool pump or was this a new installation?
1. Replaced existing pool pump
 2. New installation
 98. Don't know

FREE RIDERSHIP [REPEAT THIS SECTION UP TO TWO TIMES FOR UP TO TWO MEASURES]

72. “The next questions are about your decision to purchase equipment that qualified for a Home Energy Products rebate.”

[DISPLAY Q73= IF HVAC_PROJ_1/2 = 1]

73. Did the contractor that you worked with discuss equipment with different efficiency levels when you were deciding on the [STAND_MEASURE1/2] that you installed?

1. Yes
2. No
98. Don't know

[DISPLAY Q74 IF HVAC_PROJ_1/2 = 1]

74. Did the contractor that you worked with recommend that you install the [EFF_MEASURE1/2] instead of a standard efficiency [STAND_MEASURE1/2]?

1. Yes
2. No
98. Don't know

[DISPLAY Q75 IF HVAC_PROJ_1/2 = 1]

75. Did the contractor that you worked with tell you there was a rebate available for the efficient equipment?

1. Yes
2. No

[DISPLAY Q76 IF Q75=1]

76. Did the contractor show you the discount amount you got from the rebate or did you get the rebate?

1. I saw the discount amount
2. I got the rebate
3. Neither

[DISPLAY Q77 IF HVAC_PROJ_1/2 = 1]

77. Did the contractor that you worked with provide you with information, marketing material or a recommendation to purchase or install the [EFF_MEASURE1/2]?

1. Yes
2. No
98. Don't know

[DISPLAY Q78 IF Q77 = 1]

78. Using a scale where 0 is “not at all influential” and 10 is “very influential,” how influential was the information, marketing material, or recommendation provided by this contractor in your decision to purchase the [EFF_MEASURE1/2]? [SCALE: 0 (NOT AT ALL INFLUENTIAL) = 0, 1=1, 2=2, 3=3, 4=4, 5=5, 6=6, 7=7, 8=8, 9=9, 10 (VERY INFLUENTIAL)=10]

79. Were you planning to purchase an [EFF_MEASURE1/2] before you learned of I&M’s rebate program?

- 1. Yes
- 2. No
- 98. Don’t know

[DISPLAY Q80 IF Q79 = 1]

80. Just to be clear, did you have plans to specifically purchase an [EFF_MEASURE1/2] as opposed to a standard [STAND_MEASURE1/2]?

- 1. Yes
- 2. No
- 98. Don’t know

81. Would you have been able to afford to purchase the [EFF_MEASURE1/2] if the rebate was not available from the program?

- 1. Yes
- 2. No
- 98. Don’t know

82. Just to confirm, if the rebate was not available through the program, would you still have paid the additional cost to purchase an [EFF_MEASURE1/2] instead of a [STAND_MEASURE1/2]?

- 1. Yes
- 2. No
- 98. Don’t know

83. If the rebate was not available, what do you think you most likely would have done at the time when you installed the [EFF_MEASURE1/2]?

- 1. Not installed anything
- 2. Installed a new but less energy efficient [STAND_MEASURE1/2]
- 3. Installed a similarly energy efficient [STAND_MEASURE1/2]
- 4. Installed the exact same [STAND_MEASURE1/2]
- 98. Don’t know

84. Using a scale where 0 is “not at all likely” and 10 is “very likely”, how likely is it that you would have installed the same [EFF_MEASURE1/2] at about the same time if you had not received the financial assistance or information through the program? [SCALE: 0 (NOT AT ALL LIKELY) = 0, 1=1, 2=2, 3=3, 4=4, 5=5, 6=6, 7=7, 8=8, 9=9, 10 (VERY LIKELY)=10, DON’T KNOW = 98]

85. Did you purchase and install the [EFF_MEASURE1/2] sooner than you would have if the information and financial assistance from the program had not been available?

1. Yes
2. No
98. Don’t know

[DISPLAY Q86 IF Q85 = 1]

86. When might you have purchased or installed the same [EFF_MEASURE1/2] if you had not participated in the program?

1. Within 6 months of when you purchased it
2. Between 6 months and 1 year
3. In more than 1 year to 2 years
4. In two years or more
98. Don’t know

SPILOVER

87. Have you bought, any additional energy efficient items on your own without a financial incentive or rebate because of your experience with the Home Energy Products Program?

1. Yes
2. No
98. Don’t know

[DISPLAY Q88 IF Q87 =1]

88. We would like to know what you purchased and installed because of your experience with the Home Energy Products Program that you did not receive an incentive or rebate for.

Since completing the online checkup in [YEAR] have you done any of the following? (Please select all that apply)

1. Installed CFLs (Compact Fluorescent Light bulbs)
2. Installed LED (Light Emitting Diode) Bulbs
3. Purchased an ENERGY STAR appliance such as a refrigerator, dishwasher, clothes washer, or clothes dryer
4. Installed water heater pipe insulation
5. Installed water Heater jacket, blanket, or insulation
6. Installed energy and water efficient faucet aerators
7. Installed energy and water efficient showerheads
8. Installed an ENERGY STAR room air conditioner
9. Installed an energy efficient water heater
10. Something else
98. Don't know

[DISPLAY Q89 IF Q88 = 1 - 10]

89. Why did you not get an I&M incentive, rebate, or discount for that energy saving equipment? (Please select all that apply) [MULTISELECT]

1. Was not aware there was a rebate available
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)
98. Don't know

[DISPLAY Q90 IF Q88 = 1]

90. How many CFLs did you purchase and install?

1. (RECORD QUANTITY)
98. Don't know

[DISPLAY Q91 IF Q88 = 2]

91. How many LEDs did you purchase and install?

1. (RECORD QUANTITY)
98. Don't know

[DISPLAY Q92 IF Q88 = 3]

92. What kind of appliance did you purchase?

1. Dishwasher
2. Clothes washer
3. Clothes dryer
4. Full size refrigerator
5. Freezer
6. Other
98. Don't know

[DISPLAY Q93 IF Q88 = 3]

93. How do you know it is an energy efficient appliance?

[DISPLAY Q94 IF Q88 = 4]

94. About how many feet of water heater pipe insulation did you purchase and install?

1. (RECORD QUANTITY IN FEET)
98. Don't know

[DISPLAY Q95 IF Q88 = 6]

95. How many energy and water efficient faucet aerators did you install in bathroom sinks?

1. (RECORD QUANTITY)
98. Don't know

[DISPLAY Q96 IF Q88 = 6]

96. How many energy and water efficient faucet aerators did you install in kitchen sinks?

1. (RECORD QUANTITY)
98. Don't know

[DISPLAY Q97 IF Q88 = 7]

97. How many energy and water efficient showerheads did you install?

1. (RECORD QUANTITY)
98. Don't know

[DISPLAY Q98 IF Q88 = 8]

98. How many ENERGY STAR room air conditioners did you install?

1. (RECORD QUANTITY)

98. Don't know

[DISPLAY Q99 IF Q88 = 8]

99. How many square feet is the room that the ENERGY STAR air conditioner is installed in? (If multiple units installed, ask how many square feet on average are the rooms you installed the air conditioners in)

1. (RECORD QUANTITY)

98. Don't know

[DISPLAY Q100 IF Q88 = 9]

100. How do you know that the water heater you installed is an energy efficient water heater?

[DISPLAY Q101 IF Q88 =9]

101. What type of water heater did you install? Was it a...

1. Natural gas storage tank water heater
2. Electric storage tank water heater
3. Heat pump water heater
4. A natural gas tank less water heater
5. Some other type of water heater (Specify)
98. Don't know

[DISPLAY Q102 IF Q88 = 10]

102. How many other energy efficient items did you install?

1. (RECORD QUANTITY)

98. Don't know

[DISPLAY Q103 IF Q88 = 1 - 10]

103. In approximately what month and year did you install the energy efficient items that you did not receive an incentive for?

1. (RECORD DATE)

98. Don't know

[DISPLAY Q104 IF Q88 = 1 - 10]

104. On a scale of 0 to 10, where 0 represents “not at all important” and 10 represents “extremely important”, how important was the experience with the Home Energy Products Program in your decision to purchase the items you just mentioned? [SCALE: 0 = 0 (Not at all important), 1 = 1, 2 = 2, 3 = 3, 4 = 4, 5 = 5, 6 = 6, 7 = 7, 8 = 8, 9 = 9, 10 = 10 (Extremely important), 98 = Don’t know]

[DISPLAY Q105 IF Q88 = 1 - 10]

105. On a scale of 0 to 10, where 0 represents “not at all likely” and 10 represents “extremely likely,” how likely would you have been to purchase those additional items if you had not participated in the Home Energy Products Program? [SCALE: 0 = 0 (Not at all likely), 1 = 1, 2 = 2, 3 = 3, 4 = 4, 5 = 5, 6 = 6, 7 = 7, 8 = 8, 9 = 9, 10 = 10 (Extremely likely), 98 = Don’t know]

PROGRAM SATISFACTION

“The next few questions about your experience with the program and your satisfaction with it.”

106. Did you fill out your own rebate application, or did a contractor or sales representative do it for you?

1. I filled it out
2. A contractor or salesperson filled it out
3. Other (Please Specify):
98. Don’t know

107. Have you noticed any energy savings on your electric bill since installing the rebated equipment?

1. Yes
2. No
98. Not sure

108. Using the scale below, please rate how dissatisfied or satisfied you are with each of the following: [SCALE: 1 = 1 (VERY DISSATISFIED), 2 = 2, 3 = 3, 4 = 4, 5 = 5 (VERY SATISFIED), 98 = DON’T KNOW]

- a. [DISPLAY IF Q106 = 1] The rebate application process
- b. [DISPLAY IF Q107 = 1] The savings on your electricity bills since installing the rebated equipment
- c. The rebate equipment that you purchased
- d. The rebate program overall

[DISPLAY Q109 IF ANY IN Q108 < 3]

109. Why are you dissatisfied with those aspects of the program you mentioned?

110. Using the scale below, how dissatisfied or satisfied are you with I&M as your electricity service provider? [SCALE: 1 = 1 (VERY DISSATISFIED) 2 = 2, 3 = 3, 4 = 4, 5 = 5 (VERY SATISFIED), 98 = DON'T KNOW]

111. If you could change or improve something about the Home Energy Products program, what would it be?

DEMOGRAPHICS/HOME CHARACTERISTICS

“Now I have just a few final questions about your household. This information will be kept anonymous but you do not need to answer any question you do not want to answer.”

112. Do you own the home where the rebated equipment was installed, rent it, or own it and rent it to someone else?

1. Own
2. Rent
3. Own and rent to someone else
98. Don't know

113. Which of the following best describes your home? Is it a...

1. Manufactured home
2. Single-family house detached from any other house
3. Single family house attached to one or more other houses, for example, duplex, row house, or townhome
4. Apartment in a building with 2 to 3 units
5. Apartment in a building with 4 or more units
6. Other (SPECIFY)
98. Don't know

114. When was your home built?

1. Before 1950
2. 1950 to 1959
3. 1960 to 1969
4. 1970 to 1979
5. 1980 to 1989
7. 1990 to 1999
8. 2000 to 2009
9. 2010 or later
98. Don't know

115. What is the approximate square footage of your home? Your best estimate is fine.

1. (RECORDED VEBATIM)
98. Don't know

116. What fuel does your main water heater use?

1. Electricity
2. Natural Gas
3. Propane
4. Something else (SPECIFY)
5. Don't heat home
98. Don't know

117. Including yourself, how many people currently live in your home year-round?

1. 1
2. 2
3. 3
4. 4
5. 5
6. 6
7. 7
8. 8 or more
98. Don't know

118. Including all money earned from wages, salaries, tips, commissions, workers' compensation, unemployment insurance, child support, or other sources, about how much was your total annual household income before taxes in 2020?

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. Don't know

119. Do you have any other comments that you would like to relay to I&M about energy efficiency in residences or about this or other programs?

6. Home Energy Products Online Marketplace Survey Instrument

1. Our records indicate that your household ordered and received an instant rebate on [ALL_MEASURES] through I&M marketplace in 2022.

Are you familiar with this purchase?

1. Yes
2. No [TERMINATE SURVEY]

2. To begin with, we would like to verify the items that you received a discount on the following item(s). Is this information correct?

[SCALE: 1 = YES, 2 = NO, 98 = DON'T KNOW]

- a. [IF LED_QUANT > 0] [LED_QUANT] LED light bulb(s)
- b. [IF APS_QUANT > 0] [APS_QUANT] Advanced power strip(s)
- c. [IF SHOWER_QUANT > 0] [SHOWER_QUANT] High efficiency showerhead(s)
- d. [IF BATH_QUANT > 0] [BATH_QUANT] High efficiency bathroom faucet aerator(s)
- e. [IF KITCHEN_QUANT > 0] [KITCHEN_QUANT] High efficiency kitchen faucet aerator(s)
- f. [IF TSTAT_QUANT > 0] Wi-Fi / smart thermostat(s)
- g. [IF AIR_QUANT > 0] [AIR_QUANT] Air purifier(s)
- h. [IF LED_BATTERY_QUANT > 0] [LED_BATTERY_QUANT] LED light bulbs with batter back up
- i. [IF SOCKET_QUANT > 0] [SOCKET_QUANT] WiFi plus Bluetooth smart socket(s)

[TERMINATE SURVEY IF NONE IN Q2 = 1]

LED VERIFICATION [DISPLAY IF Q2B= 1]

3. Are/is the [LED_QUANT] LED light bulbs that you purchased from the Online Marketplace currently installed?
 1. Yes
 2. [DISPLAY IF LED_QUANT > 1] Some are
 3. No, none are

[DISPLAY IF Q3= 2]

4. How many of the [LED_QUANT] LED light bulbs that you purchased are currently installed?

[DISPLAY IF Q3= 2 OR 3]

5. How many more of the LED light bulbs do you think you will install in the next six months?

[DISPLAY IF Q3= 2 OR 3]

6. Why have you not installed all of the LED bulbs yet? (Select all that apply)
 1. I have not had the time to install them
 2. I am not interested in installing them
 3. I am waiting for light bulbs to burn out before replacing them
 4. I don't like them
 5. Some or all of the bulbs were broken
 6. Other (Please specify)
 98. Don't know

LED WITH BATTERY BACKUP VERIFICATION [DISPLAY IF Q2B= 1]

7. Are/is the [LED_BATTERY_QUANT] LED light bulbs with a battery backup that you purchased from the Online Marketplace currently installed?
 1. Yes
 2. [DISPLAY IF LED_QUANT > 1] Some are
 3. No, none are

[DISPLAY IF Q7= 2]

8. How many of the [LED_BATTERY_QUANT] LED light bulbs with a battery backup that you purchased are currently installed?

[DISPLAY IF Q7= 2 OR 3]

9. How many more of the [LED_BATTERY_QUANT] LED light bulbs with a battery backup do you think you will install in the next six months?

[DISPLAY IF Q7= 1 OR 2]

10. Are you using the light bulbs with the battery backup in the same way you would use any other light bulb, or are you using them for a special use such as where you don't have an outlet?
 1. Using it the same as any other light bulb
 2. Using them for a special application

[DISPLAY IF Q10= 1 OR 2]

11. Could you briefly describe how you are using the light bulbs with battery backup?

[DISPLAY IF Q7= 1 OR 2]

12. About how many hours are you using the light bulbs with a battery back up in a typical week?

If you are using more than one, please provide an average.

Your best guess is fine.

APS VERIFICATION [DISPLAY IF Q2B = 1]

13. Did you order the energy-saving Advanced Power Strip(s) for use in a home or a business location?

1. For use in a home
2. For use in a business
3. [DISPLAY IF APS_QUANT >1] Both, or use in a home and a business

14. How many of the [APS_QUANT] energy saving Advanced Power Strip(s) that you purchased from the I&M online marketplace are you currently using?

1. 1
2. 2
3. 3
4. 4
5. 5
6. 6
7. 7
8. 8
9. 9
10. 10
11. 11
12. 12

[DISPLAY Q15 IF APS_QUANT - Q14 >0]

15. Why are you not using the Advanced Power Strip? (Select all that apply)

1. The power turned off while I was using equipment that was plugged into it
2. I'm not sure how to use it

3. I'm not interested in using it
4. I didn't have a need for it
5. Other (Please specify)
98. Don't know

[REPEAT Q16 AND Q17 FOR EACH POWER STRIP IN USE FROM Q13, LIMIT TO UP TO FOUR POWER STRIPS]

16. The Advanced Power Strip has outlets labeled 'Always on', 'Controlled', and 'Switched'. What do you currently have plugged in the 'Controlled' outlet?

1. Television
2. Computer
3. Other (Please describe)
4. Nothing
98. Don't know

[DISPLAY Q17 IF Q16 = 1,2, OR 3]

17. What equipment is plugged into the outlets labeled 'Switched'? (Select all that apply)

1. Audio/visual/entertainment equipment
2. Computer/office equipment
3. Other types of equipment
4. No equipment is plugged into the 'Switched' outlets [EXCLUSIVE]
98. Don't know [EXCLUSIVE]

SHOWER VERIFICATION [DISPLAY IF Q2C = 1]

17. Are/is the [SHOWER_QUANT] high efficiency showerhead(s) that you purchased from the Online Marketplace currently installed?

1. Yes
2. [DISPLAY IF SHOWER_QUANT > 1] Some are
3. No, none are

[DISPLAY IF Q17= 2]

18. How many of the [SHOWER_QUANT] high efficiency showerhead(s) that you purchased are currently installed?

[DISPLAY IF Q17= 2 OR 3]

19. How many more of the high efficiency showerhead(s) do you think you will install in the next six months?

[DISPLAY IF Q17= 2 OR 3]

20. Why have you not installed all of the high efficiency showerhead(s)? (Select all that apply)

1. I have not had the time to install them
2. I am not interested in installing them
3. I need help installing them
4. I don't like them
5. Doesn't fit my shower
6. Other (Please specify)
98. Don't know

BATH VERIFICATION [DISPLAY IF Q2D = 1]

21. Are/is the [BATH_QUANT] high efficiency bathroom faucet aerator(s) that you purchased from the Online Marketplace currently installed?

1. Yes
2. [DISPLAY IF BATH_QUANT > 1] Some are
3. No, none are

[DISPLAY IF Q21= 2]

22. How many of the [BATH_QUANT] high efficiency bathroom faucet aerator(s) that you purchased are currently installed?

[DISPLAY IF Q21= 2 OR 3]

23. How many more of the high efficiency bathroom faucet aerator(s) do you think you will install in the next six months?

[DISPLAY IF Q21= 2 OR 3]

24. Why have you not installed all of the high efficiency bathroom faucet aerator(s)? (Select all that apply)

1. I have not had the time to install them
2. I am not interested in installing them
3. I need help installing them
4. I don't like them
5. Doesn't fit my faucet
6. Other (Please specify)
98. Don't know

KITCHEN VERIFICATION [DISPLAY IF Q2E = 1]

25. Are/is the [KITCHEN_QUANT] high efficiency kitchen faucet aerator(s) that you purchased from the Online Marketplace currently installed?

1. Yes
2. [DISPLAY IF KITCHEN_QUANT > 1] Some are
3. No, none are

[DISPLAY IF Q25= 2]

26. How many of the [KITCHEN_QUANT] high efficiency kitchen faucet aerator(s) that you purchased are currently installed?

[DISPLAY IF Q25= 2 OR 3]

27. How many more of the high efficiency kitchen faucet aerator(s) do you think you will install in the next six months?

[DISPLAY IF Q25= 2 OR 3]

28. Why have you not installed all of the high efficiency kitchen faucet aerator(s)? (Select all that apply)

1. I have not had the time to install them
2. I am not interested in installing them
3. I need help installing them
4. I don't like them
5. Doesn't fit my faucet
6. Other (Please specify)
98. Don't know

SMART PLUG VERIFICATION [DISPLAY IF Q2E = 1]

29. Are/is the [SOCKET_QUANT] WiFi plus Bluetooth smart sockets(s) that you purchased from the Online Marketplace currently installed?

1. Yes
2. [DISPLAY IF SOCKET_QUANT > 1] Some are
3. No, none are

[DISPLAY IF Q29= 2]

30. How many of the [SOCKET_QUANT] WiFi plus Bluetooth smart sockets(s) that you purchased are currently installed?

[DISPLAY IF Q29= 2 OR 3]

31. How many more of the WiFi plus Bluetooth smart socket(s) do you think you will install in the next six months?

[DISPLAY IF Q29= 1 OR 2]

32. We would like to know how you are using the WiFi plus Bluetooth smart sockets(s) that you got.

If you are using more than one WiFi plus Bluetooth smart socket, please think of one of them when answering the next few questions.

What do you have plugged into the device?

1. Air purifier
2. Coffee pot / electric tea kettle
3. Computer / computer monitor
4. DVD player
5. DVR
6. Game console
7. Lamp
8. Microwave
9. Mobile device (such as a phone or tablet)
10. Room air conditioner
11. Space heater
12. Stereo/smart speaker or other music player
13. Television set
14. Toaster / toaster oven
15. Something else

33. What other device do you have plugged into the WiFi plus Bluetooth smart socket?

34. Do you use the WiFi plus Bluetooth smart socket to schedule when the [Q32 RESPONSE] is turned on and off?

1. Yes
2. No
98. Don't know

35. Do you use the WiFi plus Bluetooth smart socket connectivity to manually turn the device on and off?

1. Yes
2. No

36. About how much less time is the [Q32 RESPONSE] turned on now that you are controlling it with the WiFi plus Bluetooth smart socket??

1. None - it is on for the same amount of time
2. About 20% less

3. About 40% less
4. About 60% less
5. At least 80% less
98. Not sure

TSTAT VERIFICATION [DISPLAY IF Q2F = 1]

37. Are/is the Wi-Fi thermostat(s) that you received a rebate for currently installed and working?

1. Yes
2. No
98. Don't know

[DISPLAY IF Q37 = 2]

38. What is wrong with the Wi-Fi thermostat or why is it not installed?

39. What type of thermostat did the Wi-Fi thermostat replace?

- 1 A programmable thermostat that allows you to schedule the temperature settings for different times of the day
- 2 A standard thermostat that lets you set on/off temperatures
- 3 A different Wi-Fi smart thermostat
- 98 Don't know

[DISPLAY IF Q39 =1]

40. Was the programmable thermostat that was replaced programmed with scheduled times to adjust the temperature at the time you replaced it with the Wifi thermostat?

1. Yes
2. No
98. Don't know

41. Does the Wi-Fi thermostat control a central cooling system, a central heating system, or both?

1. Central cooling system
2. Central heating system
3. Both cooling and heating systems
98. Don't know

[DISPLAY IF Q41 = 1 OR 3]

42. Is your central air conditioning system a heat pump?

1. Yes
2. No
98. Don't know

[DISPLAY IF Q41 = 2 OR 3]

43. What type of central heating system do you have?

1. Central furnace
2. Heat pump
3. Other (Please specify)
98. Don't know

[DISPLAY IF Q41 = 2 OR 3]

44. What is the main fuel used by the central heating system?

1. Electricity
2. Natural Gas
3. Propane
4. Something else (Please specify)
98. Don't know

FREE RIDERSHIP

45. The next few questions are about the purchase of the [EFF_MEASURE1].

46. Did you decide to purchase the [EFF_MEASURE1]...

1. Before you learned about I&M's Online Marketplace
2. After viewing products on I&M's Online Marketplace
98. Don't know

47. Did you shop for [EFF_MEASURE1] at any other retailers before making the purchase on I&M's Online Marketplace?

1. Yes
2. No

[DISPLAY IF Q47 = 1]

48. What is the most important reason for why you decided to purchase the [EFF_MEASURE1] on I&M's Online Marketplace instead of from another retailer?

[RANDOMIZE 1 – 4]

1. It was convenient
2. Shipping was free
3. The instant rebate / price of the product
4. You felt confident in the quality
5. For some other reason (Please explain)

49. Were you planning to purchase an [EFF_MEASURE1] before you learned that you could get an instant rebate through I&M's Online Marketplace?

1. Yes
2. No
98. Don't know

50. Would you have been able to afford to purchase the [EFF_MEASURE1] if the instant rebate was not available through I&M's Online Marketplace?

1. Yes
2. No
98. Don't know

[DISPLAY Q51 IF Q50 = 1]

51. Just to confirm, if the instant rebate was not available through the program, would you still have paid the additional cost to purchase an [EFF_MEASURE1]?

1. Yes
2. No
98. Don't know

[DISPLAY Q52 IF EFF_MEASURE1 = "smart thermostat"]

52. Without the instant rebate from I&M, what kind of thermostat would you most likely have purchased?

1. The same smart or learning thermostat
2. A different smart or learning thermostat
2. A programable or manual thermostat
3. Would not have purchased a new thermostat
4. Don't know

53. How likely is it that you would have purchased the same [EFF_MEASURE1] at about the same time if you could not have received the instant rebate through the I&M Online Marketplace?

[SCALE: 0 (NOT AT ALL LIKELY) = 0, 1=1, 2=2, 3=3, 4=4, 5=5, 6=6, 7=7, 8=8, 9=9, 10 (VERY LIKELY)=10]

54. Did you purchase and install the [EFF_MEASURE1] sooner than you would have if the information and financial assistance from the program had not been available?

1. Yes
2. No
98. Don't know

[DISPLAY Q55 IF Q54 = 1]

55. When might you have purchased or installed the same [EFF_MEASURE1] if you had not participated in the program?

1. Within 6 months of when you purchased it
2. Between 6 months and 1 year
3. In more than 1 year to 2 years
4. In two years or more
98. Don't know

56. At the time you purchased them, would you have purchased the same number of [EFF_MEASURE1] if an instant rebate was not available through I&M's Online Marketplace?

1. Yes
2. No would not have purchased any
3. No, would have purchased fewer [EFF_MEASURE1]
98. Don't know

[DISPLAY Q57 IF Q56 = 3]

57. About how many percent fewer [EFF_MEASURE1] do you think you would have purchased?

PROGRAM SATISFACTION

58. Overall, how satisfied are you with the following products that you received an instant rebate for?

[SCALE: 1 = 1 (VERY DISSATISFIED), 2 = 2, 3 = 3, 4 = 4, 5 = 5 (VERY SATISFIED)]

- a. [IF Q2A = 1] LED light bulb(s)
- b. [IF Q2B = 1] Advanced power strip(s)
- c. [IF Q2C = 1] High efficiency showerhead(s)
- d. [IF Q2D = 1] High efficiency bathroom faucet aerator(s)
- e. [IF Q2E = 1] High efficiency kitchen faucet aerator(s)
- f. [IF Q2F = 1] Wi-Fi / smart thermostat(s)

59. Overall, how satisfied are you with your I&M Online Marketplace purchase experience?

[SCALE: 1 = 1 (VERY DISSATISFIED) , 2 = 2, 3 = 3, 4 = 4, 5 = 5 (VERY SATISFIED)]

60. Given your experience using the online marketplace, how likely are you to recommend the I&M Marketplace to friends or colleague?

[SCALE: 0 = 0 (Not at all likely), 1 = 1, 2 = 2, 3 = 3, 4 = 4, 5 = 5, 6 = 6, 7 = 7, 8 = 8, 9 = 9, 10 = 10 (Extremely likely)]

[DISPLAY IF Q59 < 3]

61. What would have made your purchase experience better?

DEMOGRAPHICS/HOME CHARACTERISTICS

62. The next few questions are about your household. This information will be kept confidential and you do not need to answer any question you do not want to answer.

63. Do you own the home where the rebated equipment was installed, rent it, or own it and rent it to someone else?

1. Own
2. Rent
3. Own and rent to someone else
98. Don't know
99. Prefer not to state

64. Which of the following best describes your home? Is it a...

1. Manufactured home
2. Single-family house detached from any other house
3. Single family house attached to one or more other houses, for example, duplex, row house, or townhome
4. Apartment in a building with 2 to 3 units
5. Apartment in a building with 4 or more units
6. Other (SPECIFY)
98. Don't know
99. Prefer not to state

65. What fuel does your main water heater use?

1. Electricity
2. Natural Gas
3. Propane
4. Something else (SPECIFY)
5. Don't heat home

- 98. Don't know
- 99. Prefer not to state

66. Including yourself, how many people currently live in your home year-round?

- 1. 1
- 2. 2
- 3. 3
- 4. 4
- 5. 5
- 6. 6
- 7. 7
- 8. 8 or more
- 98. Don't know
- 99. Prefer not to state

67. Which of the following best describes your annual household income?

- 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. Don't know
- 99. Prefer not to state

7. Residential Income Qualified Weatherproofing In-Home Participant Survey Results

Q2 - We are conducting a study to evaluate the I&M Home Energy Checkup Program. I&M will use the results of this evaluation to determine the effectiveness of the program and to make improvements. This is not a sales call, and I am not going to ask you to buy anything. If you are interested, you can view our privacy policy statement at admenergy.com/privacy. May I ask you a few questions?

#	Answer	%	Count
1	Yes	100.0%	8
2	No (Thank respondent and terminate the interview)	0.0%	0
	Total	100%	8

Q6 - Our records indicate that your household participated in I&M's Energy Checkup Program by receiving an in-home energy assessment and some energy saving home improvements. Is that correct?

#	Answer	%	Count
1	Yes	100.0%	17
2	No	0.0%	0
98	Don't know	0.0%	0
	Total	100%	17

Q7 - How did you first learn about I&M's Home Energy Checkup Program?

#	Answer	%	Count
1	Email from I&M	29.4%	5
2	I&M postal mailing	23.5%	4
3	I&M Website (www.electricideas.com or indianamichiganpower.com)	11.8%	2
4	Friend or Relative (word-of-mouth)	5.9%	1
5	I&M Representative	17.6%	3
6	Community event	0.0%	0
7	Social media (Facebook, Instagram or Twitter)	0.0%	0
8	Other (Specify)	5.9%	1
98	Don't know	5.9%	1
	Total	100%	17

Q8 - Your home received a home energy checkup as part of your participation in in the program. Did you schedule the home energy checkup you received through the program?

#	Answer	%	Count
1	Yes	94.1%	16
2	No, another person in my household scheduled it	5.9%	1
3	I am not aware that a home energy assessment was performed	0.0%	0
	Total	100%	17

Q9 - What were the main reasons you wanted to have the checkup done in your home? Select all that apply.

#	Answer	%	Count
1	Required to in order to receive the home improvements	17.6%	3
2	Recommended by contractor	0.0%	0
3	Recommended by friend or family	11.8%	2
4	Wanted to better understand the condition of my home	41.2%	7
5	Concerned about a specific issue(s) in my home	23.5%	4
6	Save energy to save money	88.2%	15
7	Save energy to protect the environment	17.6%	3
8	Wanted to make my home more comfortable	52.9%	9
	Total	100%	17

Q10 - Did the energy expert that did the home checkup ask you about any concerns you had about your home?

#	Answer	%	Count
1	Yes	64.7%	11
2	No	23.5%	4
98	Not sure	11.8%	2
	Total	100%	17

Q11 - At the end of your checkup, did you receive a report or list of recommendations for making your home more energy efficient?

#	Answer	%	Count
1	Yes	23.5%	4
2	No	47.1%	8
98	Not sure	29.4%	5
	Total	100%	17

Q12 - On a scale of 1 to 5, where 1 means “Very dissatisfied” and 5 means “Very satisfied”, how satisfied were you with each of the following?

#	Question	Very dissatisfied	Somewhat dissatisfied	Neither satisfied nor dissatisfied	Somewhat satisfied	Very satisfied	Total
1	The amount of time between scheduling and when the checkup took place	0.0% 0	11.8% 2	11.8% 2	17.6% 3	58.8% 10	17
2	The time it took to complete the checkup	5.9% 1	0.0% 0	17.6% 3	29.4% 5	47.1% 8	17
3	The professionalism of the energy expert	5.9% 1	0.0% 0	5.9% 1	29.4% 5	58.8% 10	17
4	The quality of the work performed during the checkup	12.5% 2	6.3% 1	18.8% 3	12.5% 2	50.0% 8	16
5	The energy checkup overall	25.0% 4	6.3% 1	6.3% 1	18.8% 3	43.8% 7	16

Q14 - Not including the energy efficiency improvements that were made to your home, did you learn about any tips for reducing energy use in your home during the checkup?

#	Answer	%	Count
1	Yes	23.5%	4
2	No	70.6%	12
98	Don't know	5.9%	1
	Total	100%	17

Q16 - Have you implemented any of the energy saving tips that you learned about from the home energy checkup?

#	Answer	%	Count
1	Yes	50.0%	2
2	No	50.0%	2
98	Don't know	0.0%	0
	Total	100%	4

Q18 - Overall, how useful was the information provided in the home energy checkup? Would you say it was...

#	Answer	%	Count
1	Not at all useful	31.3%	5
2	Not very useful	6.3%	1
3	Somewhat useful	43.8%	7
4	Very useful	18.8%	3
	Total	100%	16

Q19 - According to our records you made the following home improvements through I&M's Home Energy Checkup Program. Is this information correct?

#	Question	Correct	Incorrect	Don't know	Total
1	Ductless heat pump	0.0% 0	0.0% 0	0.0% 0	0
2	Refrigerator	0.0% 0	0.0% 0	0.0% 0	0
3	Air sealing to reduce air leakage and drafts	0.0% 0	0.0% 0	0.0% 0	0

Q20 - The next question is about the [QID19-ChoiceGroup-SelectedChoicesForAnswer-1] installed through the program. How long did it take for a contractor to contact you to have those improvements made after the checkup was completed?

#	Answer	%	Count
1	Less than 2 weeks	0.0%	0
2	2 – 4 weeks	0.0%	0
3	5- 6 weeks	0.0%	0
4	7- 8 weeks	0.0%	0
5	More than 8 weeks	0.0%	0
98	Don't know	0.0%	0
	Total		0

Q21 - You said it took [QID20-ChoiceGroup-SelectedChoices] for a contractor to contact you about making the improvements. About how long did it take to have the work done from when you first had the energy checkup completed?

#	Answer	%	Count
1	Less than 2 weeks	0.0%	0
2	2 – 4 weeks	0.0%	0
3	5- 6 weeks	0.0%	0
4	7- 8 weeks	0.0%	0
5	More than 8 weeks	0.0%	0
98	Don't know	0.0%	0
	Total		0

Q22 - According to our records you received the following energy saving items through I&M’s Home Energy Checkup Program. Is this information correct?

#	Question	Correct		Incorrect		Don't know		Total
1	[Field-LED%20QUANT] LED light bulbs	92.9%	13	7.1%	1	0.0%	0	14
2	[Field-BATH%20AERATOR%20QUANT] energy and water efficient bathroom faucet aerators(s)	100.0%	8	0.0%	0	0.0%	0	8
3	[Field-KITCHEN%20AERATOR%20QUANT] energy and water efficient kitchen faucet aerator(s)	66.7%	4	16.7%	1	16.7%	1	6
4	[Field-SHOWER%20QUANT] energy and water efficient showerheads	100.0%	6	0.0%	0	0.0%	0	6
5	Pipe wrap	100.0%	4	0.0%	0	0.0%	0	4
6	[Field-APS%20QUANT] advanced power strip(s)	100.0%	16	0.0%	0	0.0%	0	16
7	[Field-NIGHTLIGHT%20QUANT] night light(s)	78.6%	11	14.3%	2	7.1%	1	14

Q30 - The advanced power strip has outlets labeled ‘Always on’, ‘Controlled’, and ‘Switched’. What is plugged into the ‘Controlled’ outlet?

#	Answer	%	Count
1	Television	18.8%	3
2	Computer	18.8%	3
3	Other (Please describe)	25.0%	4
4	Nothing	25.0%	4
98	Don’t know	12.5%	2
	Total	100%	16

Q31 - What equipment is plugged into the outlets labeled "Switched"? (Select all that apply)

#	Answer	%	Count
1	Audio/visual/entertainment equipment	12.5%	2
2	Computer/office equipment	12.5%	2
3	Other types of equipment	0.0%	0
4	No equipment is plugged into the 'Switched' outlets	43.8%	7
98	Don't know	37.5%	6
	Total	100%	16

Q33 - Have you removed or stopped using any of those items installed in your home through the program? (Select all that apply)

#	Answer	%	Count
1	No items removed	62.5%	10
2	Removed LED light bulbs	0.0%	0
3	Removed bathroom faucet aerators	12.5%	2
4	Removed kitchen faucet aerators	0.0%	0
5	Removed showerheads	0.0%	0
6	Removed advanced power strips	18.8%	3
7	Removed night lights	25.0%	4
	Total	100%	16

Q40 - Using a scale where 1 means “very dissatisfied” and 5 means “very satisfied,” please rate how satisfied you are with each of the following:

#	Question	Very dissatisfied1	2	3	4	Very satisfied5	Total
1	Performance of the items or improvements installed	11.8% 2	0.0% 0	29.4% 5	5.9% 1	52.9% 9	17
2	The effort required to sign up to participate in the program	0.0% 0	0.0% 0	29.4% 5	11.8% 2	58.8% 10	17
3	The quality of the installation work	17.6% 3	0.0% 0	17.6% 3	5.9% 1	58.8% 10	17
4	The program overall	11.8% 2	17.6% 3	5.9% 1	17.6% 3	47.1% 8	17

Q42 - Using the same scale where 1 means “very dissatisfied” and 5 means “very satisfied,” how satisfied are you with I&M as your electricity service provider?

#	Answer	%	Count
1	Very dissatisfied 1	5.9%	1
2	2	0.0%	0
3	3	23.5%	4
4	4	35.3%	6
5	Very satisfied 5	35.3%	6
	Total	100%	17

Q43 - How likely are you to recommend the Home Energy Checkup Program to a friend or colleague?

#	Group	%	Count
1	Detractor	41.2%	7
2	Passive	11.8%	2
3	Promoter	47.1%	8
	Total	100%	17

#	How likely are you to recommend the Home Energy Checkup Program to a friend or colleague?	Net Promoter Score®
1	How likely are you to recommend the Home Energy Checkup Program to a friend or colleague?	5.9

Q46 - Do you own the home that participated in the Home Energy Checkup Program, rent it, or own it and rent it to someone else?

#	Answer	%	Count
1	Own	88.2%	15
2	Rent	5.9%	1
3	Own and rent to someone else	0.0%	0
99	Prefer not to answer	5.9%	1
	Total	100%	17

Q47 - Which of the following best describes your home? Is it a...

#	Answer	%	Count
1	Manufactured home	11.8%	2
2	Single-family house detached from any other house	76.5%	13
3	Single family house attached to one or more other houses, for example, duplex, row house, or townhome	0.0%	0
4	Apartment in a building with 2 to 3 units	5.9%	1
5	Apartment in a building with 4 or more units	0.0%	0
6	Other (Please describe)	5.9%	1
99	Prefer not to answer	0.0%	0
	Total	100%	17

Q48 - How many bathroom faucets do you have in your home?

#	Answer	%	Count
0	0	0.0%	0
1	1	23.5%	4
2	2	52.9%	9
3	3	17.6%	3
4	4	5.9%	1
5	5	0.0%	0
6	6	0.0%	0
7	7	0.0%	0
8	8 or more	0.0%	0
99	Prefer not to answer	0.0%	0
	Total	100%	17

Q49 - How many showers do you have in your home?

#	Answer	%	Count
0	0	0.0%	0
1	1	62.5%	10
2	2	25.0%	4
3	3	12.5%	2
4	4	0.0%	0
5	5	0.0%	0
6	6	0.0%	0
7	7	0.0%	0
8	8 or more	0.0%	0
99	Prefer not to answer	0.0%	0
	Total	100%	16

Q50 - When was your home built?

#	Answer	%	Count
1	Before 1950	17.6%	3
2	1950 to 1959	0.0%	0
3	1960 to 1969	23.5%	4
4	1970 to 1979	29.4%	5
5	1980 to 1989	11.8%	2
6	1990 to 1999	11.8%	2
7	2000 to 2009	0.0%	0
8	2010 or later	0.0%	0
99	Prefer not to answer	5.9%	1
	Total	100%	17

Q51 - Including yourself, how many people currently live in your home year-round?

#	Answer	%	Count
1	1	50.0%	8
2	2	31.3%	5
3	3	0.0%	0
4	4	6.3%	1
5	5	0.0%	0
6	6	0.0%	0
7	7	0.0%	0
8	8 or more	0.0%	0
9	Prefer not to answer	12.5%	2
	Total	100%	16

Q52 - Which of the following best describes your annual household income?

#	Answer	%	Count
1	Less than \$10,000	0.0%	0
2	\$10,000 to less than \$20,000	43.8%	7
3	\$20,000 to less than \$30,000	25.0%	4
4	\$30,000 to less than \$40,000	0.0%	0
5	\$40,000 to less than \$50,000	0.0%	0
6	\$50,000 to less than \$75,000	0.0%	0
7	\$75,000 to less than \$100,000	6.3%	1
8	\$100,000 to less than \$150,000	0.0%	0
9	\$150,000 to less than \$200,000	0.0%	0
10	\$200,000 or more	0.0%	0
99	Prefer not to answer	25.0%	4
	Total	100%	16

Q53 - Did your home receive any assistance in paying your electricity bill in the past year?

#	Answer	%	Count
1	Yes	35.3%	6
2	No	64.7%	11
99	Don't know/Prefer not to answer	0.0%	0
	Total	100%	17

8. Residential Income Qualified Weatherproofing Virtual Assessment Survey Results

Q3 - Our records indicate that your household participated in I&M's Income Qualified Home Energy Checkup program and received a kit in the mail that contained energy efficient items for installation in your home. Is that correct?

#	Answer	%	Count
1	Yes	97.7%	43
2	No	2.3%	1
98	Don't know	0.0%	0
	Total	100%	44

Q4 - How did you first learn about I&M's Income Qualified Home Energy Checkup program?

#	Answer	%	Count
1	Email from I&M	31.8%	14
2	Mailer from I&M or message on your utility bill	15.9%	7
3	I&M Website (www.electricideas.com or indianamichiganpower.com)	36.4%	16
4	Friend or relative (word-of-mouth)	6.8%	3
5	Program representative	2.3%	1
6	Community or public event with program representatives	2.3%	1
7	Social media (Facebook, Instagram or Twitter)	4.5%	2
8	Other (Please Specify)	0.0%	0
98	Don't know	0.0%	0
	Total	100%	44

Q5 - How did you sign up for the program?

#	Answer	%	Count
1	Using the online form on the I&M website	75.0%	33
2	By telephone	25.0%	11
3	Some other way (please describe)	0.0%	0
	Total	100%	44

Q6 - How easy or difficult was it to sign up for the program?

#	Answer	%	Count
1	Very easy	77.3%	34
2	Somewhat easy	20.5%	9
3	Somewhat difficult	2.3%	1
4	Very difficult	0.0%	0
	Total	100%	44

Q7 - We would like to know if you have had a chance to install any of the kit items and how many of the items are currently installed. How many of the 8 LED lightbulbs are currently installed?

#	Answer	%	Count
0	0	4.5%	2
1	1	4.5%	2
2	2	9.1%	4
3	3	11.4%	5
4	4	18.2%	8
5	5	6.8%	3
6	6	6.8%	3
7	7	6.8%	3
8	8	22.7%	10
98	Don't know	9.1%	4
	Total	100%	44

**Q8 - What types of bulbs did you replace with the new LED light bulbs?
(Please select all that apply)**

#	Answer	%	Count
1	CFLs	31.6%	12
2	Incandescent/halogen	44.7%	17
3	LEDs	0.0%	0
98	Don't know	31.6%	12
	Total	100%	38

Q9 - You indicated that you have not installed $\$8$ - [QID4-ChoiceGroup-SelectedChoices]} LED bulb(s). How many of those do you think you will install in the next 6 months?

#	Answer	%	Count
0	0	3.3%	1
1	1	6.7%	2
2	2	13.3%	4
3	3	13.3%	4
4	4	20.0%	6
5	5	6.7%	2
6	6	3.3%	1
7	7	3.3%	1
8	8	0.0%	0
98	Don't know	30.0%	9
	Total	100%	30

Q10 - Why have you not installed all of the LED bulbs yet? (Select all that apply)

#	Answer	%	Count
1	I did not receive 8 bulbs	6.7%	2
2	I have not had the time to install them	13.3%	4
3	I am not interested in installing them	0.0%	0
4	I am waiting for light bulbs to burn out before replacing them	63.3%	19
5	I don't like them	0.0%	0
6	Some of the bulbs were broken/did not work	0.0%	0
7	Other (Please specify)	23.3%	7
98	Don't know	3.3%	1
	Total	100%	30

Q10_7_TEXT - Other (Please specify)

Other (Please specify) - Text

Not bright enough. Lu

We had led bulbs in most of our lights.

I have smart lights

I'm sorry. I replaced 7 of the 8 bulbs.

I completed the assesment, however I never received the energy efficent products in the mail

had purchased LED bulbs, actually they were a gift

I didn't need them. Lights use smaller bulb

Q11 - Before you received the energy efficiency kit, what share of the light bulbs in your home were LED? Your best guess is fine.

#	Answer	%	Count
1	None	9.1%	4
2	Some but less than 25%	40.9%	18
3	Between 25% and 75%	36.4%	16
4	More than 75%	11.4%	5
98	Don't know	2.3%	1
	Total	100%	44

Q12 - Have you started using the advanced power strip that you received in the kit?

#	Answer	%	Count
1	Yes	59.1%	26
2	No	38.6%	17
98	Don't know	2.3%	1
	Total	100%	44

Q13 - Why are you not using the Advanced Power Strip? (Select all that apply)

#	Answer	%	Count
1	The power turned off while I was using equipment that was plugged into it	0.0%	0
2	I'm not sure how to use it	17.6%	3
3	I'm not interested in using it	11.8%	2
4	I didn't have a need for it	17.6%	3
5	Other (Please specify)	41.2%	7
98	Don't know	11.8%	2
	Total	100%	17

Q14 - Do you plan to start using the advanced power strip in the next six months?

#	Answer	%	Count
1	Yes	75.0%	12
2	No	25.0%	4
	Total	100%	16

Q15 - The advanced power strip has outlets labeled ‘Always on’, ‘Controlled’, and ‘Switched’. What [Field-APS%20USE] the ‘Controlled’ outlet?

#	Answer	%	Count
1	Television	42.1%	16
2	Computer	23.7%	9
3	Other (Please describe)	18.4%	7
4	Nothing	10.5%	4
98	Don't know	5.3%	2
	Total	100%	38

Q15_3_TEXT - Other (Please describe)

Other (Please describe) - Text

printer

Light

My Google hub is always on, the other plugs are for my security cameras.

Router for TV and internet

DVD Player

Coffee pot

**Q16 - What equipment [Field-APS%20USE] the outlets labeled ‘Switched’?
(Select all that apply)**

#	Answer	%	Count
1	Audio/visual/entertainment equipment	55.3%	21
2	Computer/office equipment	15.8%	6
3	Other types of equipment	23.7%	9
4	No equipment is plugged into the ‘Switched’ outlets	13.2%	5
98	Don’t know	13.2%	5
	Total	100%	38

Q17 - How many of the two showerheads are currently installed?

#	Answer	%	Count
0	0	58.3%	7
1	1	25.0%	3
2	2	16.7%	2
98	Don’t know	0.0%	0
	Total	100%	12

Q18 - You indicated that you have not installed {2 - [QID15-ChoiceGroup-SelectedChoices]} showerheads. How many of those do you think you will install in the next 6 months?

#	Answer	%	Count
0	0	30.0%	3
1	1	70.0%	7
2	2	0.0%	0
	Total	100%	10

Q19 - Why have you not installed both of the showerheads? (Select all that apply)

#	Answer	%	Count
1	I did not receive both showerheads	10.0%	1
2	I have not had the time to install them	10.0%	1
3	I am not interested in installing them	20.0%	2
4	I do not have enough showers to use them	20.0%	2
5	I did not know how to install the showerheads	0.0%	0
6	I need physical assistance or tools to install them	20.0%	2
7	I don't like them	10.0%	1
8	Other (Please specify)	0.0%	0
98	Don't know	10.0%	1
	Total	100%	10

Q19_8_TEXT - Other (Please specify)

Other (Please specify) - Text

Q20 - Is the kitchen faucet aerator currently installed?

#	Answer	%	Count
1	Yes	50.0%	6
2	No	50.0%	6
98	Don't know	0.0%	0
	Total	100%	12

Q21 - Do you plan to install the kitchen faucet aerator in the next 6 months?

#	Answer	%	Count
1	Yes	16.7%	1
2	No	83.3%	5
	Total	100%	6

Q22 - Why have you not installed the kitchen faucet aerator? (Select all that apply)

#	Answer	%	Count
1	I did not receive it	16.7%	1
2	I have not had the time to install it	16.7%	1
3	I am not interested in installing it	33.3%	2
4	I did not know how to install it	0.0%	0
5	I need physical assistance or tools to install it	16.7%	1
6	I don't like it	0.0%	0
7	Other (Please specify)	16.7%	1
98	Don't know	0.0%	0
	Total	100%	6

Q23 - How many of the two bathroom faucet aerators you received are currently installed?

#	Answer	%	Count
0	0	41.7%	5
1	1	25.0%	3
2	2	33.3%	4
98	Don't know	0.0%	0
	Total	100%	12

Q24 - You indicated that you have not installed {2 - [QID21-ChoiceGroup-SelectedChoices]} bathroom faucet aerator(s). How many of those do you think you will install in the next 6 months?

#	Answer	%	Count
0	0	62.5%	5
1	1	37.5%	3
2	2	0.0%	0
	Total	100%	8

**Q25 - Why have you not installed both of the bathroom faucet aerators?
(Select all that apply)**

#	Answer	%	Count
1	I did not receive them	12.5%	1
2	I have not had the time to install them	12.5%	1
3	I am not interested in installing them	0.0%	0
4	I don't like them	0.0%	0
5	I did not know how to install them	12.5%	1
6	I need physical assistance or tools to install them	37.5%	3
7	Other (Please specify)	25.0%	2
98	Don't know	0.0%	0
	Total	100%	8

Q26 - How many of the two LED night lights are currently installed?

#	Answer	%	Count
0	0	9.1%	4
1	1	22.7%	10
2	2	65.9%	29
98	Don't know	2.3%	1
	Total	100%	44

Q27 - You indicated that you have not installed $\$e\{2 - [QID24-ChoiceGroup-SelectedChoices]\}$ LED night light(s). How many of those do you think you will install in the next 6 months?

#	Answer	%	Count
0	0	28.6%	4
1	1	57.1%	8
2	2	14.3%	2
	Total	100%	14

Q28 - Why have you not installed both of the LED night lights? (Select all that apply)

#	Answer	%	Count
1	I did not receive them	14.3%	2
2	I have not had the time to install them	14.3%	2
3	I am not interested in installing them	0.0%	0
4	I don't like them	0.0%	0
5	I didn't need them	28.6%	4
6	Other (Please specify)	42.9%	6
98	Don't know	7.1%	1
	Total	100%	14

Q29 - When you installed the LED night light(s), did you replace a night light(s) that you already had, or did you plug it into an empty outlet?

#	Answer	%	Count
1	Replaced a night light	46.2%	18
2	Installed the night light in an empty socket	28.2%	11
3	Replaced one night light and installed the other in an empty socket	12.8%	5
98	Don't know	12.8%	5
	Total	100%	39

Q30 - When you install the nightlight(s) you haven't already installed, will you...

#	Answer	%	Count
1	Replace another nightlight	50.0%	5
2	Install in an empty socket	50.0%	5
3	Replace one night light and install the other in an empty socket	0.0%	0
98	Don't know	0.0%	0
	Total	100%	10

Q31 - The next few questions are about the virtual audit of your home. Were you the person in your household who participate in the virtual audit?

#	Answer	%	Count
1	Yes	95.5%	42
2	No	2.3%	1
98	Don't know	2.3%	1
	Total	100%	44

Q32 - About how long did the virtual audit take?

#	Answer	%	Count
1	15 minutes or less	38.1%	16
2	15 to 30 minutes	31.0%	13
3	30 to 45 minutes	11.9%	5
4	45 to 60 minutes	0.0%	0
5	More than 60 minutes	0.0%	0
98	Don't know	19.0%	8
	Total	100%	42

Q33 - Did the person you spoke with provide any energy saving tips?

#	Answer	%	Count
1	Yes	90.5%	38
2	No	9.5%	4
	Total	100%	42

Q35 - Overall, how useful was the virtual audit for helping you understand ways you can save energy?

#	Answer	%	Count
1	1 (Not at all useful)	2.4%	1
2	2	4.8%	2
3	3	26.2%	11
4	4	26.2%	11
5	5 (Very useful)	40.5%	17
	Total	100%	42

Q37 - Using the scale below, please rate how dissatisfied or satisfied you are with each of the following:

#	Question	1 (Very dissatisfied)	2	3	4	5 (Very satisfied)	Total					
1	The energy checkup service, overall	4.8%	2	2.4%	1	7.1%	3	31.0%	13	54.8%	23	42
2	The information provided through the virtual audit	2.4%	1	7.1%	3	9.5%	4	28.6%	12	52.4%	22	42
3	The kit items that you received	7.1%	3	7.1%	3	4.8%	2	16.7%	7	64.3%	27	42

Q39 - Using the scale below, how dissatisfied or satisfied are you with I&M as your electricity service provider?

#	Answer	%	Count
1	1 (Very dissatisfied)	0.0%	0
2	2	2.4%	1
3	3	11.9%	5
4	4	28.6%	12
5	5 (Very satisfied)	57.1%	24
	Total	100%	42

Q41 - Do you own the home that you completed the virtual assessment for, rent it, or own it and rent it to someone else?

#	Answer	%	Count
1	Own	81.0%	34
2	Rent	14.3%	6
3	Own and rent to someone else	2.4%	1
99	Prefer not to answer	2.4%	1
	Total	100%	42

Q42 - Which of the following best describes your home? Is it a...

#	Answer	%	Count
1	Manufactured home	11.9%	5
2	Single-family house detached from any other house	73.8%	31
3	Single family house attached to one or more other houses, for example, duplex,	2.4%	1
4	row house, or townhome	0.0%	0
5	Apartment in a building with 2 to 3 units	2.4%	1
6	Apartment in a building with 4 or more units	2.4%	1
7	Other (Please Specify)	2.4%	1
99	Prefer not to answer	4.8%	2
	Total	100%	42

Q43 - When was your home built?

#	Answer	%	Count
1	Before 1950	31.0%	13
2	1950 to 1959	11.9%	5
3	1960 to 1969	19.0%	8
4	1970 to 1979	16.7%	7
5	1980 to 1989	4.8%	2
6	1990 to 1999	9.5%	4
7	2000 to 2009	0.0%	0
8	2010 or later	2.4%	1
99	Prefer not to answer	4.8%	2
	Total	100%	42

Q44 - What is the main fuel used for heating your home?

#	Answer	%	Count
1	Electricity	14.3%	6
2	Natural Gas	78.6%	33
3	Propane	4.8%	2
4	Something else	0.0%	0
5	Don't heat home	0.0%	0
99	Prefer not to answer	2.4%	1
	Total	100%	42

Q45 - What fuel does your main water heater use?

#	Answer	%	Count
1	Electricity	33.3%	14
2	Natural Gas	57.1%	24
3	Propane	2.4%	1
4	Something else	0.0%	0
5	Don't heat home	0.0%	0
99	Prefer not to answer	7.1%	3
	Total	100%	42

Q46 - Including yourself, how many people currently live in your home year-round?

#	Answer	%	Count
1	1	36.6%	15
2	2	31.7%	13
3	3	14.6%	6
4	4	9.8%	4
5	5	2.4%	1
6	6	0.0%	0
7	7	0.0%	0
8	8 or more	0.0%	0
9	Prefer not to answer	4.9%	2
	Total	100%	41

Q47 - How many bathroom faucets do you have in your home?

#	Answer	%	Count
1	0	0.0%	0
2	1	26.2%	11
3	2	45.2%	19
4	3	9.5%	4
5	4	9.5%	4
6	5	2.4%	1
7	6	2.4%	1
8	7	0.0%	0
9	8 or more	0.0%	0
99	Prefer not to answer	4.8%	2
	Total	100%	42

Q48 - How many showers do you have in your home?

#	Answer	%	Count
1	0	0.0%	0
2	1	54.8%	23
3	2	35.7%	15
4	3	7.1%	3
5	4	0.0%	0
6	5	0.0%	0
7	6	0.0%	0
8	7	0.0%	0
9	8 or more	0.0%	0
99	Prefer not to answer	2.4%	1
	Total	100%	42

Q49 - Which of the following best describes your annual household income?

#	Answer	%	Count
1	Less than \$10,000	7.1%	3
2	\$10,000 to less than \$20,000	28.6%	12
3	\$20,000 to less than \$30,000	11.9%	5
4	\$30,000 to less than \$40,000	14.3%	6
5	\$40,000 to less than \$50,000	2.4%	1
6	\$50,000 to less than \$75,000	7.1%	3
7	\$75,000 to less than \$100,000	7.1%	3
8	\$100,000 to less than \$150,000	0.0%	0
9	\$150,000 to less than \$200,000	0.0%	0
10	\$200,000 or more	0.0%	0
99	Prefer not to answer	21.4%	9
	Total	100%	42

9. Donated Measure Recipient Survey Results

Q3 - Is your home located in Indiana or Michigan?

#	Answer	%	Count
1	Indiana	100.0%	103
	Total	100%	103

Q4 - Does your home receive electricity service from Indiana Michigan Power (I&M)?

#	Answer	%	Count
1	Yes	100.0%	103
	Total	100%	103

Q5 - Which of the following free energy efficient products did you receive? Please select all that apply.

#	Answer	%	Count
1	Advanced power strip(s)	99.0%	101
2	LED light bulbs	0.0%	0
3	Door weatherstripping	1.0%	1
	Total	100%	102

Q6 - Select each type of light bulb you received.

#	Answer	%	Count
1	Box of 4 standard 9W LED bulbs	0.0%	0
2	Box of 4 globe 4.5W LED bulbs	0.0%	0
	Total		0

Q7 - How many packages of door weatherstripping did you receive?

#	Answer	%	Count
1	One package (Enough for one door)	100.0%	1
2	Two packages (Enough for two doors)	0.0%	0
	Total	100%	1

Q8 - What type of organization did you receive the products from?

#	Answer	%	Count
1	A community action agency	8.1%	5
2	Food bank / food pantry	59.7%	37
3	A housing / apartment complex	1.6%	1
4	A church or other religious organization	1.6%	1
5	School	24.2%	15
6	City government	1.6%	1
7	Other (What type?)	0.0%	0
98	Don't recall	3.2%	2
	Total	100%	62

Q9 - The next few questions are about your use of the advanced power strip that you received. Are you currently using the advanced power strip?

#	Answer	%	Count
1	Yes	82.0%	50
2	No	18.0%	11
	Total	100%	61

Q10 - Why are you not using the advanced power strip? (Select all that apply)

#	Answer	%	Count
1	The power turned off while I was using equipment that was plugged into it	0.0%	0
2	I'm not sure how to use it	0.0%	0
3	I'm not interested in using it	0.0%	0
4	I didn't have a need for it	9.1%	1
5	Other (Please specify)	81.8%	9
98	Don't know	9.1%	1
	Total	100%	11

Q11 - Do you plan to start using the advanced power strip in the next six months?

#	Answer	%	Count
1	Yes	100.0%	11
2	No	0.0%	0
	Total	100%	11

Q12 - The advanced power strip has outlets labeled ‘Always on’, ‘Controlled’, and ‘Switched’. What [Field-APS%20USE] the ‘Controlled’ outlet?

#	Answer	%	Count
1	Television	55.7%	34
2	Computer	16.4%	10
3	Other (Please describe)	14.8%	9
4	Nothing	4.9%	3
98	Don't know	8.2%	5
	Total	100%	61

**Q13 - What equipment [Field-APS%20USE] the outlets labeled ‘Switched’?
(Select all that apply)**

#	Answer	%	Count
1	Audio/visual/entertainment equipment	45.9%	28
2	Computer/office equipment	23.0%	14
3	Other types of equipment	16.4%	10
4	No equipment is plugged into the ‘Switched’ outlets	19.7%	12
98	Don’t know	9.8%	6
	Total	100%	61

Q14 - Did you watch the YouTube advanced power strip installation video?

#	Answer	%	Count
1	Yes	37.7%	23
2	No	62.3%	38
	Total	100%	61

Q15 - How easy were the instructions to understand?

#	Answer	%	Count
1	Very easy to understand	91.3%	21
2	Somewhat easy to understand	8.7%	2
3	Hard to understand	0.0%	0
	Total	100%	23

Q17 - Had you heard of advanced power strips before you received one for free?

#	Answer	%	Count
1	Yes	19.7%	12
2	No	80.3%	49
98	Don't know	0.0%	0
	Total	100%	61

Q18 - Had you purchased an advanced power strip before you received one for free?

#	Answer	%	Count
1	Yes	8.3%	1
2	No	83.3%	10
98	Don't know	8.3%	1
	Total	100%	12

Q19 - Do you think you would have purchased an advanced power strip in the next 12 months if you had not got it for free?

#	Answer	%	Count
1	Definitely would have	18.0%	11
2	Probably would have	41.0%	25
3	Probably would NOT have	39.3%	24
4	Definitely would NOT have	1.6%	1
	Total	100%	61

Q20 - The box of standard shape LEDs came with four LED bulbs. How many of the standard LED bulbs have you installed in your home?

#	Answer	%	Count
0	0	0.0%	0
1	1	0.0%	0
2	2	0.0%	0
3	3	0.0%	0
4	4	0.0%	0
98	Don't know	0.0%	0
	Total		0

Q21 - It sounds like you have $\$4 - q://QID21/SelectedChoicesRecode\}$ standard LED bulb(s) left to install. How many of those will you install in your home in the next 6 months?

#	Answer	%	Count
1	0	0.0%	0
2	1	0.0%	0
3	2	0.0%	0
4	3	0.0%	0
5	4	0.0%	0
	Total		0

Q22 - The box of globe shape LEDs came with four bulbs. How many of the globe LED bulbs have you installed in your home?

#	Answer	%	Count
0	0	0.0%	0
1	1	0.0%	0
2	2	0.0%	0
3	3	0.0%	0
4	4	0.0%	0
98	Don't know	0.0%	0
	Total		0

Q23 - It sounds like you have $\$e\{4 - q://QID23/SelectedChoicesRecode\}$ globe LED bulb(s) left to install. How many of those will you install in your home in the next 6 months?

#	Answer	%	Count
1	0	0.0%	0
2	1	0.0%	0
3	2	0.0%	0
4	3	0.0%	0
5	4	0.0%	0
	Total		0

Q24 - Why are some of the LED bulbs not installed in your home? (Select all that apply)

#	Answer	%	Count
1	I installed them somewhere else	0.0%	0
2	I have not had the time to install them	0.0%	0
3	I am not interested in installing them	0.0%	0
4	I am waiting for other light bulbs to burn out before replacing them	0.0%	0
5	I don't like them	0.0%	0
6	Some were broken or were not working	0.0%	0
7	I don't have a need for standard shape light bulb	0.0%	0
8	I don't have a need for a globe shape light bulb	0.0%	0
9	I gave them to someone else (e.g., as a gift)	0.0%	0
10	They are too bright	0.0%	0
11	They are too dim	0.0%	0
12	Other (Please specify)	0.0%	0
98	Don't know	0.0%	0
	Total		0

Q25 - Before you received the LED bulbs, what percent of the light bulbs in your home were LED? Your best guess is fine.

#	Answer	%	Count
1	None	0.0%	0
2	Some but less than 25%	0.0%	0
3	Between 25% and 50%	0.0%	0
4	Between 50% and 75%	0.0%	0
5	More than 75%	0.0%	0
98	Don't know	0.0%	0
	Total		0

Q26 - Thinking back to before you got the free LED bulbs, had you or another person in your household purchased LED bulbs for your home?

#	Answer	%	Count
1	Yes	0.0%	0
2	No	0.0%	0
98	Don't know	0.0%	0
	Total		0

Q27 - Why have you not purchased LED bulbs before? (Select all that apply)

#	Answer	%	Count
1	They cost too much	0.0%	0
2	Didn't know where to purchase LED bulbs	0.0%	0
3	Didn't know enough about LED bulbs	0.0%	0
4	Don't like their appearance or the quality of light	0.0%	0
5	Haven't needed them	0.0%	0
6	For other reasons	0.0%	0
98	Don't know	0.0%	0
	Total		0

Q28 - Do you think you would have purchased LED bulbs the next time you bought light bulbs for your home if you had not got the free bulbs?

#	Answer	%	Count
1	Definitely would have	0.0%	0
2	Probably would have	0.0%	0
3	Probably would NOT have	0.0%	0
4	Definitely would NOT have	0.0%	0
	Total		0

Q29 - Have you installed the door weatherstripping that you received?

#	Answer	%	Count
0	No	0.0%	0
1	Yes	100.0%	1
	Total	100%	1

Q30 - Why haven't you installed the door weatherstripping? (Select all that apply)

#	Answer	%	Count
1	I don't own the property	0.0%	0
2	I'm not sure how to install it	0.0%	0
3	I'm not interested in installing it	0.0%	0
4	My door weatherstripping doesn't need to be replaced	0.0%	0
5	Other (Please specify)	0.0%	0
98	Don't know	0.0%	0
	Total		0

Q31 - Do you plan to install the weatherstripping in the next six months?

#	Answer	%	Count
0	No	0.0%	0
1	Yes	0.0%	0
	Total		0

Q32 - How many of the two packages of door weatherstripping that you received have you installed on a door?

#	Answer	%	Count
0	0	0.0%	0
1	1	0.0%	0
2	2	0.0%	0
	Total		0

Q34 - It sounds like you have $\$e\{2- q://QID33/SelectedChoicesRecode\}$ pack(s) of weatherstripping left to install. How many will you install in your home in the next 6 months?

#	Answer	%	Count
1	0	0.0%	0
2	1	0.0%	0
3	2	0.0%	0
	Total		0

**Q33 - Why haven't you installed some or all of the door weatherstripping?
(Select all that apply)**

#	Answer	%	Count
1	I don't own the property	0.0%	0
2	I'm not sure how to install it	0.0%	0
3	I'm not interested in installing	0.0%	0
4	My door weatherstripping doesn't need to be replaced	0.0%	0
5	Other (Please specify)	0.0%	0
98	Don't know	0.0%	0
	Total		0

Q35 - Did you watch the YouTube weatherstripping installation video?

#	Answer	%	Count
1	Yes	0.0%	0
2	No	100.0%	1
	Total	100%	1

Q36 - How easy were the instructions to understand?

#	Answer	%	Count
1	Very easy to understand	0.0%	0
2	Somewhat easy to understand	0.0%	0
3	Hard to understand	0.0%	0
	Total		0

Q38 - Were you thinking about installing door weatherstripping before you received it for free?

#	Answer	%	Count
1	Yes	100.0%	1
2	No	0.0%	0
98	Don't know	0.0%	0
	Total	100%	1

Q39 - Had you installed weatherstripping on a door in your home before you received it for free?

#	Answer	%	Count
1	Yes	100.0%	1
2	No	0.0%	0
98	Don't know	0.0%	0
	Total	100%	1

Q40 - Do you think you would have installed weatherstripping in the next 12 months if you had not got it for free?

#	Answer	%	Count
1	Definitely would have	0.0%	0
2	Probably would have	100.0%	1
3	Probably would NOT have	0.0%	0
4	Definitely would NOT have	0.0%	0
	Total	100%	1

Q42 - Do you own your home or rent it?

#	Answer	%	Count
1	Own	62.9%	39
2	Rent	33.9%	21
98	Don't know	0.0%	0
99	Prefer not to answer	3.2%	2
	Total	100%	62

Q43 - Which of the following best describes your home? Is it a...

#	Answer	%	Count
1	Manufactured home	9.7%	6
2	Single-family house detached from any other house	72.6%	45
3	Single family house attached to one or more other houses, for example, duplex, row house, or townhome	3.2%	2
4	Apartment in a building with 2 to 3 units	4.8%	3
5	Apartment in a building with 4 or more units	4.8%	3
6	Other (Please Specify)	3.2%	2
98	Don't know	0.0%	0
99	Prefer not to answer	1.6%	1
	Total	100%	62

Q44 - What is the main type of air conditioning that you use in your home?

#	Answer	%	Count
1	Central air conditioning	67.7%	42
2	Room or window air conditioner(s)	30.6%	19
3	Home does not have air conditioning	1.6%	1
	Total	100%	62

Q45 - Does the main heating system in your home use electricity?

#	Answer	%	Count
1	Yes	60.7%	37
2	No	39.3%	24
3	Home does not have heating	0.0%	0
	Total	100%	61

Q46 - What kind of electric heating system is your main heating system?

#	Answer	%	Count
1	Electric resistance furnace, cable, or baseboard heating	74.4%	29
2	An air source heat pump	7.7%	3
3	Some other kind of heating system	17.9%	7
	Total	100%	39

Q47 - Including yourself, how many people currently live in your home year-round?

#	Answer	%	Count
1	1	9.7%	6
2	2	29.0%	18
3	3	12.9%	8
4	4	21.0%	13
5	5	16.1%	10
6	6	4.8%	3
7	7	4.8%	3
8	8 or more	1.6%	1
99	Prefer not to answer	0.0%	0
	Total	100%	62

Q48 - Is your total annual household income more or less than the amount shown below?

#	Question	Less than the amount shown		More than the amount shown		Don't know		Prefer not to answer		Total
1	\$27,180	60.0%	3	20.0%	1	0.0%	0	20.0%	1	5
2	\$36,620	27.8%	5	44.4%	8	0.0%	0	27.8%	5	18
3	\$46,060	62.5%	5	37.5%	3	0.0%	0	0.0%	0	8
4	\$55,500	53.8%	7	46.2%	6	0.0%	0	0.0%	0	13
5	\$64,940	80.0%	8	0.0%	0	10.0%	1	10.0%	1	10
6	\$74,380	100.0%	3	0.0%	0	0.0%	0	0.0%	0	3
7	\$83,820	100.0%	3	0.0%	0	0.0%	0	0.0%	0	3
8	\$93,260	100.0%	1	0.0%	0	0.0%	0	0.0%	0	1

Q49 - Would you prefer to get an Amazon gift card or a Visa gift card?

#	Answer	%	Count
1	Amazon	43.5%	27
2	Visa	56.5%	35
3	Neither, please do not provide me a gift card	0.0%	0
	Total	100%	62

10. Home Energy Products Appliances Survey Results

Q2 - To begin with, we would like to verify the equipment that you received a rebate for. In 2022, did you receive a rebate or discount for:

#	Question	Yes		No		Total
1	An air conditioner	0.00%	0	0.00%	0	0
2	Air source heat pump heating and cooling system	100.00%	15	0.00%	0	15
3	A ductless heat pump	100.00%	18	0.00%	0	18
4	A heat pump water heater	100.00%	3	0.00%	0	3
5	Electronically commutated motor (on an efficient furnace)	0.00%	0	0.00%	0	0
6	A Wi-Fi / smart thermostat	100.00%	35	0.00%	0	35
7	An ENERGY STAR dehumidifier	100.00%	22	0.00%	0	22
8	An ENERGY STAR pool pump	100.00%	2	0.00%	0	2
9	A ground source heat pump	0.00%	0	0.00%	0	0
10	A high efficiency electric water heater	100.00%	18	0.00%	0	18

Q3 - How did you first learn about Home Energy Products Program?

#	Answer	%	Count
1	Newspaper/magazine/print media	2.80%	3
2	Mailer from I&M	14.95%	16
3	I&M Website (www.electricideas.com or indianamichiganpower.com)	25.23%	27
4	Friend or Relative (word-of-mouth)	4.67%	5
5	Contractor or plumber	14.02%	15
6	TV/Radio ad	0.00%	0
7	I&M Representative	0.00%	0
8	I&M Newsletter	6.54%	7
9	Retailer/store	14.95%	16
10	Community event	0.00%	0
11	Social media (Facebook, Instagram or Twitter)	0.00%	0
12	Home Energy Report	0.93%	1
13	Other (SPECIFY)	14.02%	15
14	Don't know	1.87%	2
	Total	100%	107

Q4 - The next few questions are about the purchase of the [Field-EFF_MEASURE1]. Did you know about I&M's Home Energy Products Program...

#	Answer	%	Count
1	Before starting the process of purchasing the \${e://Field/EFF_MEASURE1}	42.06%	45
2	At the time you made the purchase decision	11.21%	12
3	After researching the product but before deciding to purchase	14.95%	16
4	After deciding to purchase the \${e://Field/EFF_MEASURE1}	27.10%	29
98	Don't know	4.67%	5
	Total	100%	107

**Q5 - Why did you select this model or type of [Field-EFF_MEASURE1]?
(Please select all that apply)**

#	Answer	%	Count
1	It was a good price	16.79%	47
2	There was a rebate for it	13.93%	39
3	It costs less to operate it	11.43%	32
4	It's good for the environment	6.79%	19
5	It was all that was available/only choice	0.36%	1
6	The contractor/retailer recommended it	7.50%	21
7	It had features I wanted	18.93%	53
8	It was the right size, color	6.79%	19
9	Wanted that brand	3.57%	10
10	It had an ENERGY STAR label	9.64%	27
11	Other (Please specify)	3.93%	11
98	Don't know	0.36%	1
	Total	100%	280

Q6 - When you were deciding to purchase the [Field-EFF_MEASURE1], where did you get information about what to buy? (Please select all that apply)

#	Answer	%	Count
1	Retailers	13.98%	13
2	Installation contractors	19.35%	18
3	Friend, neighbor, relative or co-worker	8.60%	8
4	I&M website	5.38%	5
5	Internet	39.78%	37
6	Consumer reports or other product magazines	4.30%	4
7	Newspaper	0.00%	0
8	Radio	1.08%	1
9	Television	0.00%	0
10	Other (Please specify)	5.38%	5
11	Did not look for any information about what to buy	2.15%	2
98	Don't know	0.00%	0
	Total	100%	93

Q7 - Where did you obtain the rebate application?

#	Answer	%	Count
1	From the I&M website (www.electricideas.com or indianamichiganpower.com)	71.83%	51
2	From another website	2.82%	2
3	In a retail store	1.41%	1
4	From a contractor	19.72%	14
5	Other (Please Specify)	2.82%	2
98	Don't know	1.41%	1
	Total	100%	71

Q8 - Is the central air conditioner that you received a rebate for currently installed and working?

#	Answer	%	Count
1	Yes	0.00%	0
2	No	0.00%	0
98	Don't know	0.00%	0
	Total		0

Q10 - Was there a cooling system already installed in the location where the new air conditioner was installed?

#	Answer	%	Count
1	Yes	0.00%	0
2	No	0.00%	0
98	Don't know	0.00%	0
	Total		0

Q11 - Was the cooling equipment that you replaced a central air condition?

#	Answer	%	Count
1	Yes	0.00%	0
2	No	0.00%	0
98	Don't know	0.00%	0
	Total		0

Q12 - Thinking about the old air conditioner you replaced, which of the following best describes when and how it was originally installed in.

#	Answer	%	Count
1	You bought the house new and the unit was original equipment when you bought it.	0.00%	0
2	It was original equipment in a newly constructed home when the previous owner bought it.	0.00%	0
3	It was there when you bought the house from a previous owner.	0.00%	0
4	You or your family installed the old unit.	0.00%	0
5	Other (Please specify)	0.00%	0
	Total		0

Q13 - Was the air conditioner working at the time it was replaced?

#	Answer	%	Count
1	Yes	0.00%	0
2	No	0.00%	0
	Total		0

Q14 - How much longer do you think the air conditioner you replaced would have operated if it had not been replaced?

#	Answer	%	Count
1	Less than 2 years	0.00%	0
2	2 to 4 years	0.00%	0
3	5 to 10 years	0.00%	0
4	More than 10 years	0.00%	0
98	Don't know	0.00%	0
	Total		0

Q15 - Did you get an estimate of how much it would have cost to fix the old equipment before you decided to install a new unit?

#	Answer	%	Count
1	Yes	0.00%	0
2	No	0.00%	0
	Total		0

Q17 - Do you know the approximate age of the old cooling equipment that was replaced?

#	Answer	%	Count
1	Yes (How old was it?)	0.00%	0
2	No	0.00%	0
	Total		0

Q18 - How were you able to determine the age of the old cooling equipment?

#	Answer	%	Count
1	Documentation included with the unit	0.00%	0
2	Contractor knew or estimated it	0.00%	0
3	Age of units was included in description of home when we bought it	0.00%	0
4	Previous owner told us	0.00%	0
5	Other (Please specify)	0.00%	0
	Total		0

Q19 - Which of the following do you think is the most likely age of the old cooling equipment:

#	Answer	%	Count
1	More than 20 years old	0.00%	0
2	15 – 20 years old	0.00%	0
3	10 – 15 years old	0.00%	0
4	Less than 10 years old	0.00%	0
	Total		0

Q22 - Is the [Field-HEATPUMP_TYPE] that you received a rebate for currently installed and working?

#	Answer	%	Count
1	Yes	100.00%	33
2	No	0.00%	0
	Total	100%	33

Q24 - Did the [Field-HEATPUMP_TYPE] replace some old heating and cooling equipment?

#	Answer	%	Count
1	Yes, it replaced both cooling and heating equipment	69.70%	23
2	Yes, it replaced cooling equipment	6.06%	2
3	Yes, it replaced heating equipment	15.15%	5
4	No, it was a new installation that did not replace any equipment	9.09%	3
	Total	100%	33

Q25 - Did the [Field-HEATPUMP_TYPE] replace a heat pump?

#	Answer	%	Count
1	Yes	39.13%	9
2	No	43.48%	10
98	Don't know	17.39%	4
	Total	100%	23

Q26 - Thinking about the old heat pump you replaced, which of the following best describes when and how it was originally installed.

#	Answer	%	Count
1	You bought the house new and the unit was original equipment when you bought it.	0.00%	0
2	It was original equipment in a newly constructed home when the previous owner bought it.	0.00%	0
3	It was there when you bought the house from a previous owner.	66.67%	6
4	You or your family installed the old unit.	33.33%	3
5	Other (Please specify)	0.00%	0
	Total	100%	9

Q27 - Was the old heat pump working at the time it was replaced?

#	Answer	%	Count
1	Yes	28.57%	2
2	No	71.43%	5
	Total	100%	7

Q28 - Do you know the approximate age of the old heat pump that was replaced?

#	Answer	%	Count
1	Yes (How old was it?)	100.00%	6
2	No	0.00%	0
	Total	100%	6

Q29 - How were you able to determine the age of the old heat pump?

#	Answer	%	Count
1	Documentation included with the unit	33.33%	2
2	Contractor knew or estimated it	50.00%	3
3	Age of units was included in description of home when we bought it	0.00%	0
4	Previous owner told us	0.00%	0
5	Other (Please specify)	16.67%	1
	Total	100%	6

Q30 - Which of the following do you think is the most likely age of the old heat pump:

#	Answer	%	Count
1	More than 20 years old	0.00%	0
2	15 – 20 years old	0.00%	0
3	10 – 15 years old	0.00%	0
4	Less than 10 years old	0.00%	0
	Total		0

Q32 - Please provide the seasonal energy efficiency ratio or SEER of the heat pump that you replaced.

#	Answer	%	Count
1	SEER	22.22%	2
98	Don't know	77.78%	7
	Total	100%	9

Q33 - Please provide the Heating Seasonal Performance Factor or HSPF of the heat pump that you replaced.

#	Answer	%	Count
1	HSPF	0.00%	0
98	Don't know	100.00%	9
	Total	100%	9

Q34 - What type of heating system did you have before you installed the [Field-HEATPUMP_TYPE]?

#	Answer	%	Count
1	Electric resistance heating	47.37%	9
2	An air source heat pump	5.26%	1
3	Some other kind of heating system	31.58%	6
4	No heating equipment	0.00%	0
98	Don't know	15.79%	3
	Total	100%	19

Q35 - Was your electric resistance heating system an electric furnace or baseboard heating?

#	Answer	%	Count
1	Electric furnace	33.33%	3
2	Electric baseboard heating	55.56%	5
98	Don't know	11.11%	1
	Total	100%	9

Q37 - Thinking about the old heating system you replaced, which of the following best describes when and how it was originally installed in.

#	Answer	%	Count
1	You bought the house new and the unit was original equipment when you bought it.	7.41%	2
2	It was original equipment in a newly constructed home when the previous owner bought it.	18.52%	5
3	It was there when you bought the house from a previous owner.	48.15%	13
4	You or your family installed the old unit.	22.22%	6
5	Other (Please specify)	3.70%	1
	Total	100%	27

Q38 - Was the old heating system working at the time it was replaced?

#	Answer	%	Count
1	Yes	100.00%	13
2	No	0.00%	0
	Total	100%	13

Q39 - Do you know the approximate age of the old heating equipment that was replaced?

#	Answer	%	Count
1	Yes (How old was it?)	76.92%	10
2	No	23.08%	3
	Total	100%	13

Q40 - How were you able to determine the age of the old heating equipment?

#	Answer	%	Count
1	Documentation included with the unit	10.00%	1
2	Contractor knew or estimated it	40.00%	4
3	Age of units was included in description of home when we bought it	10.00%	1
4	Previous owner told us	0.00%	0
5	Other (Please specify)	40.00%	4
	Total	100%	10

Q41 - Which of the following do you think is the most likely age of the old heating equipment:

#	Answer	%	Count
1	More than 20 years old	66.67%	2
2	15 – 20 years old	33.33%	1
3	10 – 15 years old	0.00%	0
4	Less than 10 years old	0.00%	0
	Total	100%	3

Q43 - Was the cooling equipment that you replaced a central air condition?

#	Answer	%	Count
1	Yes	43.75%	7
2	No	56.25%	9
98	Don't know	0.00%	0
	Total	100%	16

Q44 - Thinking about the old cooling equipment you replaced, which of the following best describes when and how it was originally installed in.

#	Answer	%	Count
1	You bought the house new and the unit was original equipment when you bought it.	4.17%	1
2	It was original equipment in a newly constructed home when the previous owner bought it.	12.50%	3
3	It was there when you bought the house from a previous owner.	45.83%	11
4	You or your family installed the old unit.	33.33%	8
5	Other (Please specify)	4.17%	1
	Total	100%	24

Q45 - Was the old cooling system working at the time it was replaced?

#	Answer	%	Count
1	Yes	100.00%	2
2	No	0.00%	0
	Total	100%	2

Q46 - Do you know the approximate age of the old cooling equipment that was replaced?

#	Answer	%	Count
1	Yes (How old was it?)	72.73%	8
2	No	27.27%	3
	Total	100%	11

Q47 - How were you able to determine the age of the old cooling equipment?

#	Answer	%	Count
1	Documentation included with the unit	12.50%	1
2	Contractor knew or estimated it	37.50%	3
3	Age of units was included in description of home when we bought it	12.50%	1
4	Previous owner told us	0.00%	0
5	Other (Please specify)	37.50%	3
	Total	100%	8

Q48 - Which of the following do you think is the most likely age of the old cooling equipment:

#	Answer	%	Count
1	More than 20 years old	0.00%	0
2	15 – 20 years old	33.33%	1
3	10 – 15 years old	0.00%	0
4	Less than 10 years old	66.67%	2
	Total	100%	3

Q50 - Please provide the seasonal energy efficiency ratio or SEER of the air conditioner that you replaced?

#	Answer	%	Count
1	SEER	6.25%	1
2	Don't know	93.75%	15
	Total	100%	16

Q51 - Is the Wi-Fi thermostat that you received a rebate for currently installed and working?

#	Answer	%	Count
1	Yes	92.59%	50
2	No	3.70%	2
98	Don't know	3.70%	2
	Total	100%	54

Q53 - What type of thermostat did the Wi-Fi thermostat replace?

#	Answer	%	Count
1	A programmable thermostat that allows you to schedule the temperature settings for different times of the day	40.74%	22
2	A standard thermostat that lets you set on/off temperatures	48.15%	26
3	A different Wi-Fi smart thermostat	0.00%	0
98	Don't know	11.11%	6
	Total	100%	54

Q54 - Was the programmable thermostat that was replaced programmed with scheduled times to adjust the temperature at the time you replaced it with the Wifi thermostat?

#	Answer	%	Count
1	Yes	59.09%	13
2	No	36.36%	8
98	Don't know	4.55%	1
	Total	100%	22

Q55 - Does the Wi-Fi thermostat control a central cooling system, a central heating system, or both?

#	Answer	%	Count
1	Central cooling system	0.00%	0
2	Central heating system	1.89%	1
3	Both cooling and heating systems	98.11%	52
98	Don't know	0.00%	0
	Total	100%	53

Q56 - Is your central air conditioning system a heat pump?

#	Answer	%	Count
1	Yes	40.38%	21
2	No	48.08%	25
98	Don't know	11.54%	6
	Total	100%	52

Q57 - What type of central heating system do you have?

#	Answer	%	Count
1	Central furnace	54.72%	29
2	Heat pump	24.53%	13
3	Other (Please specify)	9.43%	5
98	Don't know	11.32%	6
	Total	100%	53

Q58 - What is the main fuel used by the central heating system?

#	Answer	%	Count
1	Electricity	45.28%	24
2	Natural Gas	47.17%	25
3	Propane	1.89%	1
4	Something else (Please specify)	3.77%	2
98	Don't know	1.89%	1
	Total	100%	53

Q59 - Is the ENERGY STAR dehumidifier that you received a rebate for currently working?

#	Answer	%	Count
1	Yes	90.91%	20
2	No	9.09%	2
98	Don't know	0.00%	0
	Total	100%	22

Q61 - Did the rebated dehumidifier...

#	Answer	%	Count
1	Replace a functioning unit	9.09%	2
2	Replace a broken unit	50.00%	11
3	It was not a replacement	40.91%	9
98	Don't know	0.00%	0
	Total	100%	22

Q62 - Is the heat pump water heater that you received a rebate for currently installed and working?

#	Answer	%	Count
1	Yes	100.00%	3
2	No	0.00%	0
98	Don't know	0.00%	0
	Total	100%	3

Q64 - Was this water heater purchased...

#	Answer	%	Count
1	To replace a functioning unit	33.33%	1
2	To replace a broken unit	66.67%	2
3	Not a replacement	0.00%	0
98	Don't know	0.00%	0
	Total	100%	3

Q65 - Is the high efficiency electric water heater that you received a rebate for currently installed and working?

#	Answer	%	Count
1	Yes	100.00%	18
2	No	0.00%	0
3	Don't know	0.00%	0
	Total	100%	18

Q67 - Was this water heater purchased...

#	Answer	%	Count
1	To replace a functioning unit	50.00%	9
2	To replace a broken unit	50.00%	9
3	Not a replacement	0.00%	0
98	Don't know	0.00%	0
	Total	100%	18

Q68 - Was the ECM motor that you installed included with a new furnace or did you just replace the motor?

#	Answer	%	Count
1	Installed new furnace	0.00%	0
2	Installed just the motor	0.00%	0
98	Don't know	0.00%	0
	Total		0

Q69 - Is the ENERGY STAR pool pump that you received a rebate for currently installed and working?

#	Answer	%	Count
1	Yes	0.00%	0
2	No	0.00%	0
98	Don't know	0.00%	0
	Total		0

Q71 - Did the ENERGY STAR pool pump replace an existing pool pump or was this a new installation?

#	Answer	%	Count
1	Replaced existing pool pump	0.00%	0
2	New installation	0.00%	0
98	Don't know	0.00%	0
	Total		0

Q73 - Did the contractor that you worked with discuss equipment with different efficiency levels when you were deciding on the [Field-STAND_MEASURE1] that you installed?

#	Answer	%	Count
1	Yes	66.67%	22
2	No	18.18%	6
98	Don't know	15.15%	5
	Total	100%	33

Q74 - Did the contractor that you worked with recommend that you install the [Field-EFF_MEASURE1] instead of a standard efficiency [Field-STAND_MEASURE1]?

#	Answer	%	Count
1	Yes	57.58%	19
2	No	12.12%	4
98	Don't know	30.30%	10
	Total	100%	33

Q75 - Did the contractor that you worked with tell you there was a rebate available for the efficient equipment?

#	Answer	%	Count
1	Yes	54.55%	18
2	No	27.27%	9
98	Don't know	18.18%	6
	Total	100%	33

Q76 - Did the contractor show you the discount amount you got from the rebate or did you get the rebate?

#	Answer	%	Count
1	I saw the discount amount	16.67%	3
2	I got the rebate	77.78%	14
3	Neither	5.56%	1
	Total	100%	18

Q77 - Did the contractor that you worked with provide you with information, marketing material or a recommendation to purchase or install the [Field-EFF_MEASURE1]?

#	Answer	%	Count
1	Yes	57.58%	19
2	No	24.24%	8
98	Don't know	18.18%	6
	Total	100%	33

Q78 - Using a scale where 0 is “not at all influential” and 10 is “very influential,” how influential was the information, marketing material, or recommendation provided by this contractor in your decision to purchase the [Field-EFF_MEASURE1]?

#	Answer	%	Count
0	0 Not at all influential	5.56%	1
1	1	0.00%	0
2	2	0.00%	0
3	3	0.00%	0
4	4	0.00%	0
5	5	11.11%	2
6	6	11.11%	2
7	7	11.11%	2
8	8	16.67%	3
9	9	16.67%	3
10	10 Very influential	27.78%	5
	Total	100%	18

Q79 - Were you planning to purchase an [Field-EFF_MEASURE1] before you learned of I&M’s rebate program?

#	Answer	%	Count
1	Yes	67.29%	72
2	No	24.30%	26
98	Don’t know	8.41%	9
	Total	100%	107

Q80 - Just to be clear, did you have plans to specifically purchase an [Field-EFF_MEASURE1] as opposed to a standard [Field-STAND_MEASURE1]?

#	Answer	%	Count
1	Yes	84.72%	61
2	No	9.72%	7
98	Don't know	5.56%	4
	Total	100%	72

Q81 - Would you have been able to afford to purchase the [Field-EFF_MEASURE1] if the rebate was not available from the program?

#	Answer	%	Count
1	Yes	79.44%	85
2	No	7.48%	8
98	Don't know	13.08%	14
	Total	100%	107

Q82 - Just to confirm, if the rebate was not available through the program, would you still have paid the additional cost to purchase an [Field-EFF_MEASURE1] instead of a [Field-STAND_MEASURE1]?

#	Answer	%	Count
1	Yes	71.96%	77
2	No	14.95%	16
98	Don't know	13.08%	14
	Total	100%	107

Q83 - If the rebate was not available, what do you think you most likely would have done at the time when you installed the [Field-EFF_MEASURE1]?

#	Answer	%	Count
1	Not installed anything	9.35%	10
2	Installed a new but less energy efficient \${e://Field/STAND_MEASURE1}	12.15%	13
3	Installed a similarly energy efficient \${e://Field/STAND_MEASURE1}	20.56%	22
4	Installed the exact same \${e://Field/STAND_MEASURE1}	44.86%	48
98	Don't know	13.08%	14
	Total	100%	107

Q84 - Using a scale where 0 is “not at all likely” and 10 is “very likely”, how likely is it that you would have installed the same [Field-EFF_MEASURE1] at about the same time if you had not received the financial or information assistance through the program?

#	Answer	%	Count
0	0 Not at all likely	6.54%	7
1	1	0.00%	0
2	2	0.93%	1
3	3	6.54%	7
4	4	1.87%	2
5	5	14.95%	16
6	6	12.15%	13
7	7	5.61%	6
8	8	5.61%	6
9	9	8.41%	9
10	10 Very likely	37.38%	40
	Total	100%	107

Q85 - Did you purchase and install the [Field-EFF_MEASURE1] sooner than you would have if the information and financial assistance from the program had not been available?

#	Answer	%	Count
1	Yes	32.71%	35
2	No	57.94%	62
98	Don't know	9.35%	10
	Total	100%	107

Q86 - When might you have purchased or installed the same [Field-EFF_MEASURE1] if you had not participated in the program?

#	Answer	%	Count
1	Within 6 months of when you purchased it	34.29%	12
2	Between 6 months and 1 year	28.57%	10
3	In more than 1 year to 2 years	14.29%	5
4	In two years or more	11.43%	4
98	Don't know	11.43%	4
	Total	100%	35

Q87 - Did the contractor that you worked with discuss equipment with different efficiency levels when you were deciding on the [Field-STAND_MEASURE2] that you installed?

#	Answer	%	Count
1	Yes	0.00%	0
2	No	0.00%	0
98	Don't know	0.00%	0
	Total		0

Q88 - Did the contractor that you worked with recommend that you install the [Field-EFF_MEASURE2] instead of a standard efficiency [Field-STAND_MEASURE2]?

#	Answer	%	Count
1	Yes	0.00%	0
2	No	0.00%	0
98	Don't know	0.00%	0
	Total		0

Q89 - Did the contractor that you worked with tell you there was a rebate available for the efficient equipment?

#	Answer	%	Count
1	Yes	0.00%	0
2	No	0.00%	0
98	Don't know	0.00%	0
	Total		0

Q90 - Did the contractor show you the discount amount you got from the rebate or did you get the rebate?

#	Answer	%	Count
1	I saw the discount amount	0.00%	0
2	I got the rebate	0.00%	0
3	Neither	0.00%	0
	Total		0

Q91 - Did the contractor that you worked with provide you with information, marketing material or a recommendation to purchase or install the [Field-EFF_MEASURE2]?

#	Answer	%	Count
1	Yes	0.00%	0
2	No	0.00%	0
3	Don't know	0.00%	0
	Total		0

Q92 - Using a scale where 0 is “not at all influential” and 10 is “very influential,” how influential was the information, marketing material, or recommendation provided by this contractor in your decision to purchase the [Field-EFF_MEASURE2]?

#	Answer	%	Count
0	0 Not at all influential	0.00%	0
1	1	0.00%	0
2	2	0.00%	0
3	3	0.00%	0
4	4	0.00%	0
5	5	0.00%	0
6	6	0.00%	0
7	7	0.00%	0
8	8	0.00%	0
9	9	0.00%	0
10	10 Very influential	0.00%	0
	Total		0

Q93 - Were you planning to purchase an [Field-EFF_MEASURE2] before you learned of I&M's rebate program?

#	Answer	%	Count
1	Yes	50.00%	3
2	No	50.00%	3
98	Don't know	0.00%	0
	Total	100%	6

Q94 - Just to be clear, did you have plans to specifically purchase an [Field-EFF_MEASURE2] as opposed to a standard [Field-STAND_MEASURE2]?

#	Answer	%	Count
1	Yes	100.00%	3
2	No	0.00%	0
98	Don't know	0.00%	0
	Total	100%	3

Q95 - Would you have been able to afford to purchase the [Field-EFF_MEASURE2] if the rebate was not available from the program?

#	Answer	%	Count
1	Yes	66.67%	4
2	No	33.33%	2
98	Don't know	0.00%	0
	Total	100%	6

Q96 - Just to confirm, if the rebate was not available through the program, would you still have paid the additional cost to purchase an [Field-EFF_MEASURE2] instead of a [Field-STAND_MEASURE2]?

#	Answer	%	Count
1	Yes	66.67%	4
2	No	33.33%	2
98	Don't know	0.00%	0
	Total	100%	6

Q97 - If the rebate was not available, what do you think you most likely would have done at the time when you installed the [Field-EFF_MEASURE2]?

#	Answer	%	Count
1	Not installed anything	0.00%	0
2	Installed a new but less energy efficient \${e://Field/STAND_MEASURE2}	16.67%	1
3	Installed a similarly energy efficient \${e://Field/STAND_MEASURE2}	16.67%	1
4	Installed the exact same \${e://Field/STAND_MEASURE2}	66.67%	4
98	Don't know	0.00%	0
	Total	100%	6

Q98 - Using a scale where 0 is “not at all likely” and 10 is “very likely”, how likely is it that you would have installed the same [Field-EFF_MEASURE2] at about the same time if you had not received the financial assistance or information through the program?

#	Answer	%	Count
0	0 Not at all likely	16.67%	1
1	1	0.00%	0
2	2	0.00%	0
3	3	16.67%	1
4	4	0.00%	0
5	5	0.00%	0
6	6	0.00%	0
7	7	0.00%	0
8	8	16.67%	1
9	9	16.67%	1
10	10 Very likely	16.67%	1
98	Don't know	16.67%	1
	Total	100%	6

Q99 - Did you purchase and install the [Field-EFF_MEASURE2] sooner than you would have if the information and financial assistance from the program had not been available?

#	Answer	%	Count
1	Yes	33.33%	2
2	No	66.67%	4
98	Don't know	0.00%	0
	Total	100%	6

Q100 - When might you have purchased or installed the same [Field-EFF_MEASURE2] if you had not participated in the program?

#	Answer	%	Count
1	Within 6 months of when you purchased it	0.00%	0
2	Between 6 months and 1 year	50.00%	1
3	In more than 1 year to 2 years	0.00%	0
4	In two years or more	0.00%	0
98	Don't know	50.00%	1
	Total	100%	2

Q121 - Did you fill out your own rebate application, or did a contractor or sales representative do it for you?

#	Answer	%	Count
1	I filled it out	74.65%	53
2	A contractor or salesperson filled it out	19.72%	14
3	Other (Please Specify)	4.23%	3
98	Don't know	1.41%	1
	Total	100%	71

Q121_3_TEXT - Other (Please Specify)

Other (Please Specify) - Text

wife

Daughter did it

I filled out 1 and the installer filled out 2

Q122 - Have you noticed any energy savings on your electric bill since installing the rebated equipment?

#	Answer	%	Count
1	Yes	42.45%	45
2	No	17.92%	19
98	Not sure	39.62%	42
	Total	100%	106

Q123 - Using the scale below, please rate how dissatisfied or satisfied you are with each of the following:

#	Question	Very dissatisfied ¹		2		3		4		Very satisfied ⁵		Total
1	The rebate application process	0.00%	0	1.89%	1	11.32%	6	20.75%	11	66.04%	35	53
2	The savings on your electricity bills since installing the rebated equipment	0.00%	0	0.00%	0	22.22%	10	28.89%	13	48.89%	22	45
3	The rebated equipment that you purchased	0.94%	1	0.00%	0	8.49%	9	19.81%	21	70.75%	75	106
4	The rebate program overall	0.95%	1	0.95%	1	9.52%	10	19.05%	20	69.52%	73	105

Q125 - Using the scale below, how dissatisfied or satisfied are you with I&M as your electricity service provider?

#	Answer	%	Count
1	Very dissatisfied1	0.00%	0
2	2	0.96%	1
3	3	18.27%	19
4	4	36.54%	38
5	Very satisfied5	44.23%	46
	Total	100%	104

Q128 - Do you own the home where the rebated equipment was installed, rent it, or own it and rent it to someone else?

#	Answer	%	Count
1	Own	93.33%	98
2	Rent	3.81%	4
3	Own and rent to someone else	0.00%	0
98	Don't know	2.86%	3
	Total	100%	105

Q129 - Which of the following best describes your home? Is it a...

#	Answer	%	Count
1	Manufactured home	4.85%	5
2	Single-family house detached from any other house	89.32%	92
3	Single family house attached to one or more other houses, for example, duplex, row house, or townhome	0.97%	1
4	Apartment in a building with 2 to 3 units	0.00%	0
5	Apartment in a building with 4 or more units	0.97%	1
6	Other (Specify)	2.91%	3
98	Don't know	0.97%	1
	Total	100%	103

Q130 - When was your home built?

#	Answer	%	Count
1	Before 1950	20.39%	21
2	1950 to 1959	14.56%	15
3	1960 to 1969	17.48%	18
4	1970 to 1979	11.65%	12
5	1980 to 1989	12.62%	13
6	1990 to 1999	5.83%	6
7	2000 to 2009	7.77%	8
8	2010 or later	4.85%	5
98	Don't know	4.85%	5
	Total	100%	103

Q132 - What fuel does your main water heater use?

#	Answer	%	Count
1	Electricity	57.28%	59
2	Natural Gas	40.78%	42
3	Propane	0.00%	0
4	Something else (SPECIFY)	0.00%	0
5	Don't heat home	0.00%	0
98	Don't know	1.94%	2
	Total	100%	103

Q133 - Including yourself, how many people currently live in your home year-round?

#	Answer	%	Count
1	1	18.81%	19
2	2	41.58%	42
3	3	17.82%	18
4	4	11.88%	12
5	5	5.94%	6
6	6	3.96%	4
7	7	0.00%	0
8	8 or more	0.00%	0
98	Don't know	0.00%	0
	Total	100%	101

Q154 - Which of the following best describes your annual household income?

#	Answer	%	Count
1	Less than \$10,000	0.00%	0
4	\$10,000 to less than \$20,000	0.00%	0
5	\$20,000 to less than \$30,000	3.45%	1
6	\$30,000 to less than \$40,000	6.90%	2
7	\$40,000 to less than \$50,000	10.34%	3
8	\$50,000 to less than \$75,000	20.69%	6
9	\$75,000 to less than \$100,000	17.24%	5
10	\$100,000 to less than \$150,000	20.69%	6
11	\$150,000 to less than \$200,000	0.00%	0
12	\$200,000 or more	6.90%	2
13	Don't know	13.79%	4
	Total	100%	29

11. Home Energy Products Online Marketplace Survey Results

Q1 - Our records indicate that your household bought [Field-ALL_MEASURES] through I&M's Online Marketplace in 2022. Are you familiar with this purchase?

#	Answer	%	Count
1	Yes	99.3%	145
2	No	0.7%	1
	Total	100%	146

Q2 - To begin with, we would like to verify that you bought the following item(s) through I&M's Online Marketplace. Is this information correct?

#	Question	Yes		No		Don't know		Total
1	[Field-LED_QUANT] LED light bulb(s)	0.0%	0	0.0%	0	0.0%	0	undefined
2	[Field-APS_QUANT] Advanced power strip(s)	97.2%	139	1.4%	2	1.4%	2	143
3	[Field-SHOWER_QUANT] High efficiency showerhead(s)	100.0%	3	0.0%	0	0.0%	0	3
4	[Field-BATH_QUANT] High efficiency bathroom faucet aerator(s)	100.0%	2	0.0%	0	0.0%	0	2
5	[Field-KITCHEN_QUANT] High efficiency kitchen faucet aerator(s)	100.0%	1	0.0%	0	0.0%	0	1
6	[Field-TSTAT_QUANT] Wi-Fi / smart thermostat(s)	50.0%	1	0.0%	0	50.0%	1	2
7	[Field-AIR_QUANT] air purifier(s)	100.0%	3	0.0%	0	0.0%	0	3
8	[Field-LED_BATTERY_QUANT] LED light bulbs with a battery backup	0.0%	0	0.0%	0	0.0%	0	undefined
9	[Field-SOCKET_QUANT] WiFi plus Bluetooth smart socket(s)	100.0%	1	0.0%	0	0.0%	0	1

Q3 - Are/is the [Field-LED_QUANT] LED light bulbs that you purchased from the Online Marketplace currently installed?

#	Answer	%	Count
1	Yes	0.0%	0
2	Some are	0.0%	0
3	No, none are	0.0%	0
	Total		0

Q6 - Why have you not installed all of the LED bulbs yet? (Select all that apply)

#	Answer	%	Count
1	I have not had the time to install them	0.0%	0
2	I am not interested in installing them	0.0%	0
3	I am waiting for light bulbs to burn out before replacing them	0.0%	0
4	I don't like them	0.0%	0
5	Some or all of the bulbs were broken	0.0%	0
6	Other (Please specify)	0.0%	0
98	Don't know	0.0%	0
	Total		0

Q7 - How many of the [Field-APS_QUANT] energy-saving Advanced Power Strip(s) that you ordered from the I&M online marketplace are you currently using?

#	Answer	%	Count
0	0 (Not using any power strips purchased)	18.8%	26
1	1	51.4%	71
2	2	23.2%	32
3	3	3.6%	5
4	4	2.9%	4
5	5	0.0%	0
6	6	0.0%	0
7	7	0.0%	0
8	8	0.0%	0
9	9	0.0%	0
10	10	0.0%	0
11	11	0.0%	0
12	12	0.0%	0
	Total	100%	138

Q8 - Why are you not using the / all of the Advanced Power Strips you ordered? (Select all that apply)

#	Answer	%	Count
1	The power turned off while I was using equipment that was plugged into it	6.7%	4
2	I'm not sure how to use it	16.7%	10
3	I'm not interested in using it	1.7%	1
4	I didn't have a need for it	20.0%	12
5	Other (Please specify)	60.0%	36
98	Don't know	5.0%	3
	Total	100%	60

Q9 - The Advanced Power Strip has outlets labeled 'Always on', 'Controlled', and 'Switched'.

#	Answer	%	Count
1	Television	44.1%	49
2	Computer	28.8%	32
3	Other (Please describe)	18.9%	21
4	Nothing	4.5%	5
98	Don't know	3.6%	4
	Total	100%	111

Q10 - What equipment is plugged into the outlets labeled ‘Switched’? (Select all that apply)

#	Answer	%	Count
1	Audio/visual/entertainment equipment	46.0%	46
2	Computer/office equipment	30.0%	30
3	Other types of equipment	23.0%	23
4	No equipment is plugged into the ‘Switched’ outlets	16.0%	16
98	Don’t know	7.0%	7
	Total	100%	100

Q11 - Thinking about the second Advanced Power Strip you are currently using, what do you currently have plugged in the ‘Controlled’ outlet?

#	Answer	%	Count
1	Television	43.9%	18
2	Computer	24.4%	10
3	Other (Please describe)	9.8%	4
4	Nothing	14.6%	6
98	Don’t know	7.3%	3
	Total	100%	41

Q12 - What equipment is plugged into the outlets labeled ‘Switched’? (Select all that apply)

#	Answer	%	Count
1	Audio/visual/entertainment equipment	50.0%	16
2	Computer/office equipment	18.8%	6
3	Other types of equipment	28.1%	9
4	No equipment is plugged into the ‘Switched’ outlets	15.6%	5
98	Don’t know	0.0%	0
	Total	100%	32

Q13 - Thinking about the third Advanced Power Strip you are currently using, what do you currently have plugged in the ‘Controlled’ outlet?

#	Answer	%	Count
1	Television	25.0%	2
2	Computer	37.5%	3
3	Other (Please describe)	25.0%	2
4	Nothing	0.0%	0
98	Don’t know	12.5%	1
	Total	100%	8

Q14 - What equipment is plugged into the outlets labeled ‘Switched’? (Select all that apply)

#	Answer	%	Count
1	Audio/visual/entertainment equipment	28.6%	2
2	Computer/office equipment	42.9%	3
3	Other types of equipment	0.0%	0
4	No equipment is plugged into the ‘Switched’ outlets	14.3%	1
98	Don’t know	14.3%	1
	Total	100%	7

Q15 - Thinking about the fourth Advanced Power Strip you are currently using, what do you currently have plugged in the ‘Controlled’ outlet?

#	Answer	%	Count
1	Television	50.0%	2
2	Computer	0.0%	0
3	Other (Please describe)	50.0%	2
4	Nothing	0.0%	0
98	Don’t know	0.0%	0
	Total	100%	4

Q16 - What equipment is plugged into the outlets labeled ‘Switched’? (Select all that apply)

#	Answer	%	Count
1	Audio/visual/entertainment equipment	50.0%	2
2	Computer/office equipment	0.0%	0
3	Other types of equipment	0.0%	0
4	No equipment is plugged into the ‘Switched’ outlets	25.0%	1
98	Don’t know	25.0%	1
	Total	100%	4

Q17 - Are/is the [Field-SHOWER_QUANT] high efficiency showerhead(s) that you purchased from the Online Marketplace currently installed?

#	Answer	%	Count
1	Yes	100.0%	3
2	Some are	0.0%	0
3	No, none are	0.0%	0
	Total	100%	3

**Q20 - Why have you not installed all of the high efficiency showerhead(s) ?
(Select all that apply)**

#	Answer	%	Count
1	I have not had the time to install them	0.0%	0
2	I am not interested in installing them	0.0%	0
3	I need help installing them	0.0%	0
4	I don't like them	0.0%	0
5	Doesn't fit my shower	0.0%	0
6	Other (Please specify)	0.0%	0
98	Don't know	0.0%	0
	Total		0

Q21 - Are/is the [Field-BATH_QUANT] high efficiency bathroom faucet aerator(s) that you purchased from the Online Marketplace currently installed?

#	Answer	%	Count
1	Yes	100.0%	2
2	Some are	0.0%	0
3	No, none are	0.0%	0
	Total	100%	2

Q24 - Why have you not installed all of the high efficiency bathroom faucet aerator(s)? (Select all that apply)

#	Answer	%	Count
1	I have not had the time to install them	0.0%	0
2	I am not interested in installing them	0.0%	0
3	I need help installing them	0.0%	0
4	I don't like them	0.0%	0
5	Doesn't fit my faucet	0.0%	0
6	Other (Please specify)	0.0%	0
98	Don't know	0.0%	0
	Total		0

Q25 - Are/is the [Field-KITCHEN_QUANT] high efficiency kitchen faucet aerator(s) that you purchased from the Online Marketplace currently installed?

#	Answer	%	Count
1	Yes	0.0%	0
2	Some are	0.0%	0
3	No, none are	100.0%	1
	Total	100%	1

Q28 - Why have you not installed all of the high efficiency kitchen faucet aerator(s)? (Select all that apply)

#	Answer	%	Count
1	I have not had the time to install them	100.0%	1
2	I am not interested in installing them	0.0%	0
3	I need help installing them	0.0%	0
4	I don't like them	0.0%	0
5	Doesn't fit my faucet	0.0%	0
6	Other (Please specify)	0.0%	0
98	Don't know	0.0%	0
	Total	100%	1

Q29 - Are/is the Wi-Fi thermostat(s) that you ordered through the I&M Online Marketplace currently installed and working?

#	Answer	%	Count
1	Yes	100.0%	1
2	No	0.0%	0
98	Don't know	0.0%	0
	Total	100%	1

Q31 - What type of thermostat did the Wi-Fi thermostat replace?

#	Answer	%	Count
1	A programmable thermostat that allows you to schedule the temperature settings for different times of the day	100.0%	1
2	A standard thermostat that lets you set on/off temperatures	0.0%	0
3	A different Wi-Fi smart thermostat	0.0%	0
98	Don't know	0.0%	0
	Total	100%	1

Q32 - Was the programmable thermostat that was replaced programmed with scheduled times to adjust the temperature at the time you replaced it with the Wifi thermostat?

#	Answer	%	Count
1	Yes	0.0%	0
2	No	0.0%	0
98	Don't know	100.0%	1
	Total	100%	1

Q33 - Does the Wi-Fi thermostat control a central cooling system, a central heating system, or both?

#	Answer	%	Count
1	Central cooling system	0.0%	0
2	Central heating system	0.0%	0
3	Both cooling and heating systems	100.0%	1
98	Don't know	0.0%	0
	Total	100%	1

Q34 - Is your central air conditioning system a heat pump?

#	Answer	%	Count
1	Yes	100.0%	1
2	No	0.0%	0
3	Don't know	0.0%	0
	Total	100%	1

Q35 - What type of central heating system do you have?

#	Answer	%	Count
1	Central furnace	0.0%	0
2	Heat pump	100.0%	1
3	Other (Please specify)	0.0%	0
98	Don't know	0.0%	0
	Total	100%	1

Q36 - What is the main fuel used by the central heating system?

#	Answer	%	Count
1	Electricity	100.0%	1
2	Natural Gas	0.0%	0
3	Propane	0.0%	0
4	Something else (Please specify)	0.0%	0
98	Don't know	0.0%	0
	Total	100%	1

Q38 - Did you decide to purchase the [Field-EFF_MEASURE1]....

#	Answer	%	Count
1	Before you learned about I&M's Online Marketplace	14.0%	20
2	After viewing products on I&M's Online Marketplace	82.5%	118
98	Don't know	3.5%	5
	Total	100%	143

Q39 - Did you shop for [Field-EFF_MEASURE1] at any other retailers before making the purchase on I&M's Online Marketplace?

#	Answer	%	Count
1	Yes	5.6%	8
2	No	94.4%	135
	Total	100%	143

Q40 - What is the most important reason for why you decided to purchase the [Field-EFF_MEASURE1] on I&M's Online Marketplace?

#	Answer	%	Count
1	It was convenient	12.5%	1
2	Shipping was free	0.0%	0
3	The instant rebate / price of the product	62.5%	5
4	You felt confident in the quality	25.0%	2
5	For some other reason (Please explain)	0.0%	0
	Total	100%	8

Q41 - Were you planning to purchase an [Field-EFF_MEASURE1] before you learned that you could get an instant rebate through I&M's Online Marketplace?

#	Answer	%	Count
1	Yes	16.3%	23
2	No	80.9%	114
98	Don't know	2.8%	4
	Total	100%	141

Q42 - Would you have been able to afford to purchase the [Field-EFF_MEASURE1] if the instant rebate was not available through I&M's Online Marketplace?

#	Answer	%	Count
1	Yes	48.2%	68
2	No	30.5%	43
98	Don't know	21.3%	30
	Total	100%	141

Q43 - Just to confirm, if the instant rebate was not available through the program, would you still have paid the additional cost to purchase an [Field-EFF_MEASURE1]?

#	Answer	%	Count
1	Yes	26.8%	30
2	No	64.3%	72
98	Don't know	8.9%	10
	Total	100%	112

Q44 - How likely is it that you would have purchased the same [Field-EFF_MEASURE1] at about the same time if you could not have received the instant rebate through the I&M Online Marketplace?

#	Answer	%	Count
0	0 Not at all likely	52.5%	74
1	1	5.0%	7
2	2	7.8%	11
3	3	2.8%	4
4	4	6.4%	9
5	5	13.5%	19
6	6	2.1%	3
7	7	2.1%	3
8	8	2.1%	3
9	9	0.7%	1
10	10 Very likely	5.0%	7
	Total	100%	141

Q45 - Did you purchase and install the [Field-EFF_MEASURE1] sooner than you would have if the information and financial assistance from the program had not been available?

#	Answer	%	Count
1	Yes	57.9%	81
2	No	32.9%	46
98	Don't know	9.3%	13
	Total	100%	140

Q46 - When might you have purchased or installed the same [Field-EFF_MEASURE1] if you had not participated in the program?

#	Answer	%	Count
1	Within 6 months of when you purchased it	13.8%	11
2	Between 6 months and 1 year	17.5%	14
3	In more than 1 year to 2 years	15.0%	12
4	In two years or more	11.3%	9
98	Don't know	42.5%	34
	Total	100%	80

Q47 - At the time you purchased them, would you have purchased the same number of [Field-EFF_MEASURE1] if an instant rebate was not available through I&M’s Online Marketplace?

#	Answer	%	Count
1	Yes	19.6%	27
2	No would not have purchased any	51.4%	71
3	No, would have purchased fewer \$ {e://Field/EFF_MEASURE1}	15.9%	22
4	Don’t know	13.0%	18
	Total	100%	138

Q49 - Overall, how satisfied are you with the following products that you received an instant rebate for?

#	Question	1Very dissatisfied	2	3	4	5Very satisfied	Total
1	LED light bulb(s)	0.0%	0	0.0%	0	0.0%	undefined
2	Advanced power strip(s)	8.3%	1	4.5%	6	12.8%	133
3	High efficiency showerhead(s)	0.0%	0	0.0%	0	33.3%	3
4	High efficiency bathroom faucet aerator(s)	0.0%	0	0.0%	0	50.0%	2
5	High efficiency kitchen faucet aerator(s)	0.0%	0	0.0%	0	100.0%	1
6	Wi-Fi / smart thermostat(s)	0.0%	0	0.0%	0	100.0%	1

Q50 - Overall, how satisfied are you with your I&M Online Marketplace purchase experience?

#	Answer	%	Count
1	1 Very dissatisfied	2.2%	3
2	2	5.8%	8
3	3	8.6%	12
4	4	21.6%	30
5	5 Very satisfied	61.9%	86
	Total	100%	139

Q54 - Do you own the home where the rebated equipment was installed, rent it, or own it and rent it to someone else?

#	Answer	%	Count
1	Own	82.4%	112
2	Rent	14.0%	19
3	Own and rent to someone else	0.0%	0
98	Don't know	0.0%	0
99	Prefer not to state	3.7%	5
	Total	100%	136

Q55 - Which of the following best describes your home? Is it a...

#	Answer	%	Count
1	Manufactured home	4.5%	6
2	Single-family house detached from any other house	75.4%	101
3	Single family house attached to one or more other houses, for example, duplex, row house, or townhome	8.2%	11
4	Apartment in a building with 2 to 3 units	0.7%	1
5	Apartment in a building with 4 or more units	6.7%	9
6	Other (Please specify)	0.0%	0
98	Don't know	0.0%	0
99	Prefer not to state	4.5%	6
	Total	100%	134

Q56 - What fuel does your main water heater use?

#	Answer	%	Count
1	Electricity	38.8%	52
2	Natural Gas	53.0%	71
3	Propane	3.7%	5
4	Something else (Please specify)	0.7%	1
5	Don't heat home	0.0%	0
98	Don't know	2.2%	3
99	Prefer not to state	1.5%	2
	Total	100%	134

Q57 - Including yourself, how many people currently live in your home year-round?

#	Answer	%	Count
1	1	30.6%	41
2	2	45.5%	61
3	3	10.4%	14
4	4	8.2%	11
5	5	0.7%	1
6	6	0.7%	1
7	7	0.0%	0
8	8 or more	0.0%	0
98	Don't know	0.0%	0
99	Prefer not to state	3.7%	5
	Total	100%	134

Q58 - Which of the following best describes your annual household income?

#	Answer	%	Count
1	Less than \$10,000	1.5%	2
2	\$10,000 to less than \$20,000	5.3%	7
3	\$20,000 to less than \$30,000	9.8%	13
4	\$30,000 to less than \$40,000	9.8%	13
5	\$40,000 to less than \$50,000	8.3%	11
6	\$50,000 to less than \$75,000	17.3%	23
7	\$75,000 to less than \$100,000	12.8%	17
8	\$100,000 to less than \$150,000	8.3%	11
9	\$150,000 to less than \$200,000	3.8%	5
10	\$200,000 or more	0.8%	1
98	Don't know	0.8%	1
99	Prefer not to state	21.8%	29
	Total	100%	133