

2024 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 2024 through December 2024 (PY2024).

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 PY2024 evaluation of I&M’s residential programs.

Table 1-1 Summary of Data Collection

<i>Survey</i>	<i>Mode</i>	<i>Time Frame</i>	<i>Number of Contacts</i>	<i>Number of Completions</i>	<i>Completion Rate</i>
Online Energy Checkup Participant Survey	Email	October 2024	3,730	166	4.5%
Residential AMI Portal	Email	August 2024	9,555	98	1.0%
IQW: Virtual Audit Participant	Email	August 2024, December 2024	365	14	3.8%
IQW: In-Home Participant	Telephone	January 2025	60	2	3.3%
Midstream HVAC	Letter mailed web survey link and phone follow up	November 2024	66	8	12.1%
Online Marketplace Participant	Email	November 2024	68	6	8.8%

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	kWh Savings Goal is the energy savings goal cited in the applicable portfolio plan.
Ex Ante Gross kWh Savings	Ex Ante Gross kWh Savings 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	Gross Audited kWh Savings are determined by reviewing tracking data and looking for any errors and adjusting Ex Ante Gross kWh Savings accordingly.
Gross Verified kWh Savings	Gross Verified kWh Savings are determined by applying an installation rate to the Gross Audited kWh Savings. The installation rate is defined as the ratio of units that were installed (verified) to the number of units reported (claimed).

<i>Variable</i>	<i>Definition</i>
Ex Post Gross kWh Savings	Ex Post Gross kWh Savings 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	Ex Post Net kWh Savings are equal to Ex Post Gross kWh Savings, adjusted to account for free ridership and spillover.
Ex Post Net Lifetime kWh Savings	Ex Post Net Lifetime kWh Savings is the Ex Post Net kWh Savings occurring over the course of the applicable measure effective useful life (EUL).
Gross Realization Rate	Gross Realization Rate is equal to Ex Post Gross kWh Savings divided by Ex Ante Gross kWh Savings.
Net-to-Gross Ratio	Net-to-Gross Ratio is equal to Ex Post Net kWh Savings divided by Ex Post Gross kWh Savings.
Free Rider	A free rider 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.
Spillover (Participant and Non-Participant)	Spillover effects 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. Participant spillover 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. Non-participant spillover refers to energy savings that occur when a program non-participant installs energy efficiency measures or applies energy savings practices as a result because of a program's influence.

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

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

ADM performed EM&V activities for six residential programs offered by I&M during PY2024. Total residential portfolio ex post gross energy savings are 8,178,428 kWh, while ex post net energy savings are 6,594,387 kWh.

Table 1-4 Summary of Energy Savings – PY2024

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 Online Energy Check-up	2,227,753	2,227,753	1,521,388	2,232,748	100%	2,059,627	92%	18,894,381
Residential AMI Data Portal	2,923,225	2,923,225	2,923,225	-	0%	-	N/A	-
Residential Income Qualified Weatherproofing	1,830,323	1,830,323	1,226,030	2,176,101	119%	2,176,101	100%	7,514,409
Home Energy Products - ENERGY STAR Appliances	2,376,868	2,376,868	2,376,868	2,303,827	97%	1,052,931	46%	15,470,272
Home HVAC Midstream	540,045	540,045	540,045	328,833	61%	238,664	73%	2,816,089
Home Energy Products - Online Marketplace	748,073	748,073	492,708	1,136,919	152%	1,067,065	94%	5,913,952
Residential Portfolio Totals	10,646,287	10,646,287	9,080,265	8,178,428	77%	6,594,387	81%	50,609,103

Total residential portfolio ex post gross peak demand savings are 1,018.49 kW, while ex post net peak demand savings are 819.27 kW.

Table 1-5 Summary of Peak Demand Impacts – PY2024

Program Name	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 Online Energy Check-up	165.78	165.78	116.61	243.81	147%	233.69	96%
Residential AMI Data Portal	710.12	710.12	710.12	-	0%	-	N/A
Residential Income Qualified Weatherproofing	294.55	294.55	179.68	237.62	81%	237.62	100%
Home Energy Products - ENERGY STAR Appliances	268.68	268.68	268.68	251.57	94%	114.98	46%
Home HVAC Midstream	89.87	89.87	89.87	131.95	147%	88.71	67%
Home Energy Products - Online Marketplace	230.99	230.99	178.10	153.54	66%	144.27	94%
Residential Portfolio Totals	1,759.99	1,759.99	1,543.05	1,018.49	58%	819.27	80%

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 PY2024 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>
Residential Online Energy Check-up	1.52	1.52	0.36	N/A
Residential AMI Data Portal	0.00	0.00	0.00	N/A
Residential Income Qualified Weatherproofing	0.29	0.29	0.18	N/A
Home Energy Products - ENERGY STAR® Appliances	1.26	0.52	0.34	1.20
Home HVAC Midstream	0.36	0.45	0.25	3.65
Home Energy Products - Online Marketplace	0.72	0.72	0.28	76.49

1.4. Evaluation Findings and Recommendations

1.4.1. Home Online Energy Checkup

Overall, the evaluation finds that the Online Energy Check-Up (OEC) program has maintained consistent operations in 2024, with no significant changes to program design, core offerings, or data tracking processes. Marketing efforts remained consistent with prior years. The program continues to prioritize accurate data collection and reporting, ensuring alignment with performance goals. Additionally, program staff are exploring minor enhancements, such as adding educational stickers to kit items, to further improve customer engagement and energy efficiency awareness.

Most respondents were satisfied with the program’s cost savings, information, and kit items. The program received a Net Promoter Score of 29%. The program received high satisfaction ratings, with 78% of participants satisfied with the service and 76% with the information provided. Dissatisfaction was minimal but primarily related to kit delivery issues, product compatibility, and perceived usefulness. Satisfaction levels varied by kit item, with the night light receiving the highest approval and kitchen aerators and showerheads generating more mixed feedback.

Most participants learned about the Online Energy Checkup program through I&M emails and joined primarily to reduce energy costs. The Online Energy Checkup program effectively reached participants through I&M emails, with cost savings being the primary motivation for engagement. While many respondents installed additional energy efficient equipment after participating, a lack of awareness about available rebates was a common barrier to claiming incentives.

Most respondents found the OEC easy to complete and useful for understanding energy conservation. The OEC was largely regarded as accessible, with 89% of respondents rating it as very or somewhat easy to complete. Additionally, 71% found it useful in improving their understanding of energy-saving methods, though a small portion of respondents encountered difficulties or perceived limited value.

1.4.2. AMI Data Portal

Analysis of interactions with the AMI Portal, the WAMI, and the bill alerts did not indicate that the services were reducing energy use in PY2024. This lack of findings differs from the small effect of energy savings resulting from the WAMI found in PY2023.

- **Recommendation 1:** We recommend that I&M provide the full Home Energy Report (HER) service to customers to support behavioral energy savings. The HER has been more consistently associated with measurable reductions in energy use compared to the AMI portal tools.

The HER's effectiveness is grounded in its use of social norm comparisons. The report shows how a customer's energy use compares to similar households and includes evaluative feedback (e.g., "fair," "good," or "great"). This combination of descriptive and injunctive norms encourages customers to align their behavior with the perceived standard. While the AMI portal includes similar neighbor comparisons, they are less prominent and require users to actively seek them out.

Salience also plays a role. HERs are delivered via mail and email, which increases visibility and reduces the need for customers to engage proactively with a digital platform. In contrast, portal-based tools rely on self-directed exploration, which can limit engagement.

The HER is also streamlined in presentation, typically offering a concise set of statistics and a few targeted energy-saving tips on a two-page format. While the portal provides more granular and extensive data, this volume of information may be overwhelming or cognitively burdensome for some users, potentially reducing the likelihood of action.

Finally, the evaluation design used for HERs—typically involving randomized control groups—supports reliable estimation of energy savings. While some AMI portal components (e.g., WAMI and Bill Alerts) also use randomized designs, they lack key features like social norm framing. Additionally, the frequency of the WAMI (weekly) may contribute to alert fatigue, diminishing its effectiveness over time.

More than half of the respondents have used most of the AMI Portal features, though there is a significant portion who remain unaware of or do not find certain features useful. Usage rates varied across features, with the Bill Comparison feature being the most utilized and the Bill Forecast feature being the least. Awareness and perceived usefulness (i.e., 44% agreed that the tools helped them save energy) were key factors influencing feature adoption. Additionally, analysis of records of engagement indicate that the ways to save section of the portal, which provides energy saving recommendations, had a particularly low level of engagement (1%) of accounts engaged with this section.

Additionally, many respondents actively engage with the weekly energy usage report, indicating a strong interest in monitoring their energy consumption.

- **Recommendation 2:** Identify ways of increasing the usefulness of the portal as a tool to help customers save energy. Some tactics to consider include:
 - Improve Framing and Interpretation of Savings Tips. While personalized tips are already provided, it may not always be clear why they are relevant or how they connect to the user’s specific behavior. Consider clarifying the linkage between observed usage patterns and suggested actions, and reinforce how those actions can directly result in bill reductions.
 - Introduce Behavioral Nudges or Progress Feedback. Incorporate behavioral design features (e.g., goal tracking, badges for completed actions, or comparisons to similar users who have reduced usage) to make energy-saving feel more tangible and engaging. This builds on existing tools without duplicating them.

Slightly more than half of respondents adjusted their electricity use based on portal information, with most making general changes or targeting specific times like the afternoon and evening. Fifty-one percent of respondents reported modifying their electricity use based on portal insights, with 61% making general adjustments and 39% focusing on specific times. The most common targeted periods were the afternoon (31%) and evening (19%). Energy-saving actions primarily involved turning off or unplugging devices, adjusting lighting habits, and modifying air conditioning use. Other reported behaviors included shifting energy-intensive activities and adopting energy-efficient measures.

The AMI Portal service received a negative Net Promoter Score (-41%), with most respondents classified as Detractors, citing limited usefulness and relevance of the tools. Sixty-one percent of respondents were Detractors, while 20% were Promoters, leading to a negative NPS. While most users found the tools helpful in understanding electricity usage patterns (62%), fewer (44%) felt they effectively reduced energy use. Common feedback from Detractors included perceived irrelevance, lack of engagement, and technical reliability issues. Suggested improvements focused on better functionality, clearer communication of benefits, and enhanced integration with renewable energy data.

1.4.3. Residential Income Qualified Weatherproofing

Donated measures accounted for the majority of ex post energy savings. The donated weatherstripping, window kits, and door sweeps accounted for 68.7% of the program ex post savings. The efficiency kits provided to participants accounted for another 19.9% of energy savings, and the remaining amount came from in-home direct install and major measures.

While the program achieved significant savings, the heavy reliance on efficiency kits and donated measures suggests it is not as comprehensive as originally intended. Key weatherization and equipment replacement measures, such as air sealing, duct sealing, and heat pump installations, contributed a much smaller share of savings than the program planned for. This indicates that the program may not be fully addressing deeper energy efficiency opportunities that provide long-

term savings. Expanding participation in these measures could enhance program comprehensiveness and better align with the original design.

A potential factor contributing to this outcome is the condition of participating homes, which staff have reported in previous evaluations as a significant barrier to deeper energy efficiency upgrades because these homes need extensive structural improvements before making efficiency improvements is reasonable.

- **Recommendation 1. Focus on delivering more significant measures to participants to improve the comprehensiveness of services provided and achieve deeper savings.**
- **Recommendation 2. We recommend expanding the program data tracked and provided to the Evaluator to include information on why participants receive an efficiency kit rather than more comprehensive services.** Relevant factors could include non-electric heating or significant structural issues. This additional data would offer greater insight into how the program operates and serves income-qualified customers.

SEEL conducts outreach in collaboration with I&M’s marketing efforts and through direct engagement at food banks. The participation process includes follow-ups to maintain engagement. Partnerships with community agencies provide additional funding beyond SEEL’s caps, which can impact deferral rates. Data management processes have remained consistent.

The virtual audit program provided energy-saving guidance, though financial constraints limited some recommendations. The website, mailers, and emails were the main sources of awareness for 75% of respondents. Most found the virtual audit sign-up easy, with six using the phone to sign up and three using the online application. Nearly all (89%) engaged in a 15 to 30-minute phone discussion about home energy use and received tips like weather stripping, light bulb replacement, and thermostat adjustments. While half found the discussion very useful, others were already implementing tips or found some financially unfeasible.

The virtual audit component and energy checkup service were well received, with high satisfaction and strong customer advocacy. Respondents expressed high satisfaction with the energy checkup service, the energy use discussion, and the kit items received, with 67% very satisfied and 33% satisfied. Additionally, 89% of respondents reported being very or somewhat satisfied with I&M as their electricity service provider. The virtual audit component received a Net Promoter Score of 63%.

1.4.4. Home Energy Products ENERGY STAR Appliances

The program addressed the issue of the risk of double counting air purifiers sold through ESRPP and the Online Market Place program identified in the PY2023 evaluation. The Online Marketplace rebate ended in June 2024.

1.4.5. Home HVAC Midstream

The Midstream HVAC program remained largely unchanged with some modification to increase program savings. There have been no significant changes in the Midstream HVAC program's management, design, or operations for 2024. The program continues to serve as a sales tool for contractors and distributors, though it has underperformed in meeting savings goals. CLEAResult introduced a \$100 incentive to encourage distributor participation and mitigate administrative burden. Efforts to increase the number of distributors participating have not yet led to significant performance improvements.

Some air source heat pumps included in the program had baseline HSPF ratings equal to the federal standard.

- **Recommendation 1: Ensure that heat pumps included in the program have HSPF ratings higher than the federal standard.** The emphasis should be on HSPF rather than SEER, as heating savings potential in Indiana exceeds cooling savings potential.

1.4.6. Home Energy Products Online Marketplace

The Online Marketplace has faced challenges with low rebate conversions despite increased site traffic. Marketing efforts, including email campaigns and social media promotions, have driven traffic but not significantly increased purchases.

The program rebated water heaters that met the federal minimum efficiency standard. The water heaters rebated through the program had a Uniform Energy Factor (UEF) value equal to that of a standard efficiency water heater (.92).

- **Recommendation 1. Raise the efficiency standard for water heaters or discontinue the incentive.** No electric resistance water heaters are ENERGY STAR certified; all certified electric models are heat pump water heaters.

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 2024 program year. Volume I is organized as follows:

- Chapter 2: Home Online Energy Checkup
- Chapter 3: AMI Data Portal
- Chapter 4: Residential Income Qualified Weatherproofing
- Chapter 5: Home Energy Products ENERGY STAR Appliances
- Chapter 6: Home HVAC Midstream
- Chapter 7: Home Energy Products Online Marketplace

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- Chapter 8: Cost Effectiveness Evaluation

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

2. Home Online Energy Checkup

This chapter presents the results of both the impact and process evaluations of the 2024 Home Online Energy Checkup Program that Indiana Michigan Power (I&M) offered to its residential customers during the period of January 2024 through December 2024.

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;
- Complete a participant survey for the process evaluation; and
- Provide recommendations for program improvement.

2.1. Program Description

The Home Online Energy Check-Up (OEC) program identifies energy saving opportunities through a web-based self-service assessment tool where customers answer basic questions about their homes and how they use energy in it. Upon completion of the questions online, the program generates a printable report that includes:

- Useful details about customer home’s energy consumption;
- Customized energy-saving recommendations;
- Potential savings from making the suggested improvement; and
- Environmental impact of implementing suggested improvements.

In addition, the customer is mailed a kit of low-cost energy efficiency measures dependent on their water heater type. Kits are limited to one per account every three years. The kit contents are displayed in Table 2-1.

Table 2-1 Home Online Energy Checkup Kit Contents

<i>Kit</i>	<i>Measure</i>	<i>Quantity</i>
Electric Water Heater	0.5 W LED night light	1
	1.5 GPM kitchen faucet aerator	1
	1.0 GPM bathroom faucet aerator	2
	1.5 GPM showerhead	1
Gas Water Heater	Tier 1 advanced power strip (7 outlets)	1

2.2. Data Collection

2.2.1. 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:

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

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 random sample of 3,730 participants in the Home Online Energy Checkup Program. Participants were contacted by email to complete the survey and received up to three emails invitations. Table 2-2 summarizes the results of the survey data collection effort. Of the 166 survey responses, 65 were from participants that received an electric water heating kit and 101 were from customers who received a gas water heating kit.

Table 2-2 Home Online Energy Checkup Survey

<i>Survey</i>	<i>Mode</i>	<i>Time Frame</i>	<i>Number of Contacts</i>	<i>Number of Completions</i>	<i>Completion Rate</i>
Online Energy Checkup Participant Survey	Email	October 2024	3,730	166	4.5%

2.3. Estimation of Ex Post Gross Savings

2.3.1. Methodology for Estimating Ex Post Gross Energy Savings

2.3.1.1. Review of Documentation

I&M maintains program tracking information that includes a list of customers that received the efficiency kit and the kit type. The first aspect of conducting measurements of program activity was to verify that the tracking data report of participants and measures were 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 kit 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 installed the measures listed.

2.3.1.2. Procedures for Estimating Measure-Level Gross Energy Savings

Table 2-3 presents information on savings calculation formulas, savings calculation inputs, incremental cost, and effective useful life values and data sources applicable to the Home Online Energy Checkup Program.

Table 2-3 Home Online Energy Checkup Program Calculation Input Information

<i>Variable Type</i>	<i>Variable Name</i>	<i>Variable Value</i>	<i>Variable Value Source</i>
<i>Measure Name: Advanced Power Strip</i>			
Savings	ΔkWh		kWh
Savings	ΔkW		$per_unit_gross_ex_post_kwh_savings * cdf$
Input	kWh	Varies	Illinois TRM V10 Vol. 3, p. 64.
Input	cdf	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		7	Illinois TRM V10 Vol. 3, p. 63.
<i>Measure Name: Bathroom Faucet Aerator</i>			
Savings	ΔkWh		$(GPMbase_as_used * L_base - GPMlow_as_used * L_low) * Household * 365.25 * DF / FPH * EPG_electric$
Savings	ΔkW		$per_unit_gross_ex_post_kwh_savings * cdf$
Input	$GPMbase_as_used$	Varies	Illinois TRM V10 Vol. 3, p. 223.
Input	L_base	Varies	Illinois TRM V10 Vol. 3, p. 224.
Input	$GPMlow_as_used$	Varies	Illinois TRM V10 Vol. 3, p. 223.
Input	L_low	Varies	Illinois TRM V10 Vol. 3, p. 224.
Input	$Household$	Varies	Illinois TRM V10 Vol. 3, p. 225.
Input	DF	Varies	Illinois TRM V10 Vol. 3, p. 225.
Input	FPH	Varies	Illinois TRM V10 Vol. 3, p. 225.
Input	$EPG_electric$	Varies	Illinois TRM V10 Vol. 3, p. 226.
Input	cdf	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		10	Illinois TRM V10 Vol. 3, p. 222.
<i>Measure Name: Kitchen Faucet Aerator</i>			
Savings	ΔkWh		$(GPMbase_as_used * L_base - GPMlow_as_used * L_low) * Household * 365.25 * DF / FPH * EPG_electric$
Savings	ΔkW		$per_unit_gross_ex_post_kwh_savings * cdf$
Input	$GPMbase_as_used$	Varies	Illinois TRM V10 Vol. 3, p. 223.
Input	L_base	Varies	Illinois TRM V10 Vol. 3, p. 224.
Input	$GPMlow_as_used$	Varies	Illinois TRM V10 Vol. 3, p. 223.

Input	<i>L_low</i>	Varies	Illinois TRM V10 Vol. 3, p. 224.
Input	<i>Household</i>	Varies	Illinois TRM V10 Vol. 3, p. 225.
Input	<i>DF</i>	Varies	Illinois TRM V10 Vol. 3, p. 225.
Input	<i>FPH</i>	Varies	Illinois TRM V10 Vol. 3, p. 225.
Input	<i>EPG_electric</i>	Varies	Illinois TRM V10 Vol. 3, p. 226.
Input	<i>cdf</i>	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		10	Illinois TRM V10 Vol. 3, p. 222.
Measure Name: Showerhead			
Savings	ΔkWh		$(GPM_base * L_base - GPM_low * L_low) * Household * SPCD * 365.25 / SPH * EPG_electric$
Savings	ΔkW		$per_unit_gross_ex_post_kwh_savings * cdf$
Input	<i>GPM_base</i>	2.35	Illinois TRM 10.0 Vol. 3, p. 233. Efficiency kits.
Input	<i>L_base</i>	7.8	Illinois TRM 10.0 Vol. 3, p. 234.
Input	<i>GPM_low</i>	1.5	Illinois TRM 10.0 Vol. 3, p. 233.
Input	<i>L_low</i>	7.8	Illinois TRM 10.0 Vol. 3, p. 234.
Input	<i>SPCD</i>	0.6	Illinois TRM V10 Vol. 3, p. 234.
Input	<i>Household</i>	Varies	Illinois TRM V10 Vol. 3, p. 234
Input	<i>SPH</i>	Varies	Illinois TRM V10 Vol. 3, p. 234
Input	<i>EPG_electric</i>	Varies	Illinois TRM V10 Vol. 3, p. 235.
Input	<i>cdf</i>	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		10	Illinois TRM 10.0 Vol. 3, p. 232.
Measure Name: LED Nightlight			
Savings	ΔkWh		$(WattsBase - WattsEE) * Hours / 1000 * (WHFe + IF)$
Savings	ΔkW		$per_unit_gross_ex_post_kwh_savings * cdf$
Input	<i>WattsBase</i>	7	Illinois TRM V10 Vol. 3, p. 310. Unknown.
Input	<i>WattsEE</i>	0.5	Program tracking data.
Input	<i>Hours</i>	4380	Illinois TRM V10 Vol. 3, p. 311.
Input	<i>WHFe</i>	Varies	Illinois TRM V10 Vol. 3, p. 311.
Input	<i>IF</i>	Varies	Illinois TRM V10 Vol. 3, p. 312.
Input	<i>cdf</i>	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		Varies	Illinois TRM 10.0 Vol. 3, p. 310.

2.3.1.3. In-Service Rates

Table 2-4 shows the in-service rates for program measures provided through the Home Online Energy Checkup Program.

Table 2-4 Summary of Measure In-Service Rates

<i>Measure</i>	<i>Number of Measure Responses</i>	<i>Verification/ In Service Rate</i>	<i>Stratum/Source</i>	<i>Stratum Sample Size</i>
Advanced Power Strip	96	81%	Average Advanced Power Strip Value	96
Bathroom Faucet Aerator	51	68%	Average Bathroom Aerator Value	51

Kitchen Faucet Aerator	59	64%	Average Kitchen Aerator Value	59
LED Nightlight	63	56%	Average LED Nightlight Value	63
Showerhead	58	66%	Average Showerhead Value	58

2.3.2. Results of Ex Post Gross Savings Estimation

Table 2-5 summarizes the ex post gross kWh savings of the Home Online Energy Checkup Program by measure. The ex post annual energy savings for the program were 2,232,748 kWh with a realization rate of 100%.

Table 2-5 Measure-Level Annual Gross kWh Savings

<i>Measure Type</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>
Advanced Power Strip	420,160	420,160	341,380	549,408	131%
1.5 GPM Kitchen Faucet Aerator	554,528	554,528	357,153	668,426	121%
1.0 GPM Bathroom Faucet Aerator	186,205	186,205	125,962	164,587	88%
1.5 GPM Showerhead	1,045,931	1,045,931	685,265	800,987	77%
0.5w LED night light	20,930	20,930	11,628	49,339	236%
Total	2,227,753	2,227,753	1,521,388	2,232,748	100%

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

- Advanced Power Strips (131%) – The increase in ex post savings is primarily due to changes in the in-service rate.
- Water heating measures (Kitchen and Bathroom Faucet Aerators and Showerheads) – The change in savings reflects updates to baseline water flow rate assumptions in the Indiana TRM.
- LED Night Lights (236%) – The significant increase in realization rate is driven by updated baseline wattage assumptions in the Indiana TRM, resulting in higher estimated per-unit savings.

Table 2-6 summarizes the per kit gross kWh savings.

Table 2-6 Kit-Level Annual Gross kWh Savings

<i>Kit Type</i>	<i>Kit Quantity</i>	<i>Ex Ante Annual kWh Savings</i>	<i>Gross Audited kWh Savings</i>	<i>Gross Verified kWh Savings</i>	<i>Ex Post Annual Gross kWh Savings</i>	<i>Gross Realization Rate</i>
Electric	4,623	1,807,593	1,807,593	1,180,008	1,683,340	93%
Gas	6,565	420,160	420,160	341,380	549,408	131%
Total	11,188	2,227,753	2,227,753	1,521,388	2,232,748	100%

Table 2-7 summarizes the gross peak demand reduction of the Home Online Energy Checkup Program. The gross peak demand reduction for the program was 243.81 kW, with a realization rate of 147%.

Table 2-7 Measure-Level Annual Gross kW Savings

<i>Measure Type</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>
Advanced Power Strip	52.52	52.52	42.67	59.99	114%
1.5 GPM Kitchen Faucet Aerator	34.75	34.75	22.38	72.99	210%
1.0 GPM Bathroom Faucet Aerator	11.67	11.67	7.89	17.97	154%
1.5 GPM Showerhead	65.54	65.54	42.94	87.46	133%
0.5w LED night light	1.31	1.31	0.73	5.39	411%
Total	165.78	165.78	116.61	243.81	147%

Table 2-8 summarizes the kit gross kW savings.

Table 2-8 Kit-Level Annual Gross kW Savings

<i>Kit Type</i>	<i>Kit Quantity</i>	<i>Ex Ante Annual kW Savings</i>	<i>Gross Audited kW Savings</i>	<i>Gross Verified kW Savings</i>	<i>Ex Post Annual Gross kW Savings</i>	<i>Gross Realization Rate</i>
Electric	4,623	113.26	113.26	73.94	183.81	162%
Gas	6,565	52.52	52.52	42.67	59.99	114%
Total	11,188	165.78	165.78	116.61	243.81	147%

2.3.3. Estimation of Ex Post Net 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 a survey of program participants.

2.3.3.1. *Estimation of Free Ridership*

The calculation of a free ridership was based on the responses to questions on the following topics:

- Prior experience with similar energy saving equipment.
- Prior planning to purchase energy efficiency measures that were provided through the program.
- Likelihood of installing similar equipment without the program.

2.3.3.1.1. *Prior Experience*

The program is designed to encourage customers to try efficiency measures that they previously did not have experience with by providing them at no cost to the customer. As such, a primary indicator of the likelihood that a participant is a free rider, is whether he or she has previously purchased a similar measure. Previous experience was used as an indicator of whether the customer would have coincidentally purchased a similar measure on their own.

Prior experience is assessed through the following question:

- FR1: Thinking back to before you completed the online energy checkup, had you purchased and installed any of the following items in your home in the last three years?

Respondents who had not purchased a given measure in the past three years were considered to have minimal to no prior experience with that measure, meaning that the intervention of the program is likely significantly influential in the energy savings resulting from the measure. These respondents received an overall free ridership score of 0 for this measure. Otherwise, free ridership is assessed using the following three factors.

2.3.3.1.2. *Prior Plans and Intentions*

Participants were asked if they had plans to purchase any of the measures:

- FR2: Before you heard of the program, did you have specific plans to purchase any of these kit items that were sent to you? If so, which items did you plan to purchase?

For bathroom faucet aerators, participants that responded that they planned to install the measures are asked the following question:

- FR3: Of the two bathroom faucet aerators provided in the kit, how many did you plan to purchase on your own?

Respondents who indicate that they had plans to purchase the measure on FR2, were given a plans score of 1. The response to FR3 was used to adjust the plans score to reflect the number of items the respondent planned to purchase. For example, if the respondent planned to purchase one of the two items received, the plans score was adjusted to .5.

2.3.3.1.3. *Likelihood of Purchasing Measure*

Participants were also asked how likely they would have been to install the efficiency measures if they had not received them through the program.

- FR4: Using a scale where 0 means “not at all likely” and 10 means “very likely”, if you had not completed the online energy checkup or received the energy conservation kit, how likely would you have been to purchase any of the following items on your own within 12 months of when you received them?
- FR5: [IF FR4 > 0] Based on your response, there is some likelihood that you would have purchased some of the kit items in the next 12 months. Given that, we would like to know why you had not already purchased the items on your own. Had you not already bought the kit items because 1) you didn’t want to spend the money, 2) you had not gotten around to it, 3) you didn’t know where to buy the items, 4) you didn’t know enough about the items, or 6) another reason?

Respondents who indicated in FR4 that they had not already purchased a given measure because they did not want to spend the money, did not know where to purchase the measure, or did not know enough about the measure are considered to have had significant barriers to implementing these energy efficiency improvements and received a score of 0% free ridership for the measure under this component. Otherwise, the likelihood of purchasing was scored as:

$$\text{Likelihood of Purchasing} = FR4/10$$

2.3.3.1.4. Free Ridership Scoring

For respondents who demonstrated prior experience with a measure, the scores for the prior plans and likelihood of purchasing the measures are averaged to assign a measure-level free ridership score to each respondent.

2.3.3.2. Estimation of Participant Spillover

Program participants may implement additional energy saving measures without receiving a program incentive because of their participation 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 are also asked to provide information on the attributes of the measures implemented for use in estimating the associated energy savings.

Participants who report implementing on one or more efficiency measures were then 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 the online energy checkup 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 completed the online energy checkup?

The responses to these questions were used to develop a spillover score as follows:

$$Spillover = Average(SO1, 10 - SO2)$$

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

2.3.3.3. Estimation of Non-Participant Spillover

ADM estimated non-participant spillover through a survey of non-participating customers in PY2021. No spillover was identified, and ADM did not apply non-participant savings to the PY2024 net savings estimate.

2.3.4. Results of Ex Post Net Savings Estimation

Table 2-9 summarizes the free ridership results for the kit measures.

Table 2-9 Program-Level Annual Net kWh and kW Savings

Measure	Number of Measure Responses	Average Free Ridership	Stratum / Source	Stratum Sample Size
Advanced Power Strip	101	3%	Average Advanced Power Strip Value	101
Bathroom Faucet Aerator	64	10%	Average Bathroom Aerator Value	64
Kitchen Faucet Aerator	65	11%	Average Kitchen Aerator Value	65
LED Nightlight	65	15%	Average LED Nightlight Value	65
Showerhead	65	11%	Average Showerhead Value	65

Table 2-10 summarizes the ex post annual net kWh and kW savings of the Home Online Energy Checkup Program. The annual net savings totaled 2,059,627 kWh and 233.69 kW.

Table 2-10 Program-Level Annual Net kWh and kW Savings

Category	kWh	kW
Ex Ante Gross Savings	2,227,753	165.78
Gross Audited Savings	2,227,753	165.78
Gross Verified Savings	1,521,388	116.61
Ex Post Gross Savings	2,232,748	243.81
Gross Realization Rate	100%	147%
Ex Post Free Ridership	199,644	21.80
Ex Post Non-Participant Spillover	0	0.00

<i>Category</i>	<i>kWh</i>	<i>kW</i>
Ex Post Participant Spillover	26,523	11.68
Ex Post Net Savings	2,059,627	233.69
Net-to-Gross Ratio	92%	96%
Ex Post Net Lifetime Savings	18,894,381	N/A

2.3.5. Process Evaluation

ADM completed a process evaluation of the Online Energy Checkup Program. The process evaluation activities consisted of the collection and analysis of survey findings from participants and an interview with the I&M program lead.

2.3.5.1. Program Operations

The energy efficiency and consumer products coordinator is responsible for managing key aspects of the Online Energy Check-Up program, including the oversight of kit distribution, ensuring timely shipment, and aligning the program's monthly reports with overall goals. In 2024, the Online Energy Checkup program maintained its existing measures, with no significant changes to program design. The program continues to deliver consistent services and core offerings, similar to previous years.

Marketing efforts for the OEC program have remained largely consistent, with emails sent five times per year to engage customers. However, a formatting issue in one email appeared to reduce response rates. Program staff promptly resolved the issue and are monitoring response rates for future campaigns. Additionally, in Q4 program staff changed the marketing outreach approach to include a single question asking what type of water heater they had in order to determine the appropriate kit to send them.

To enhance the educational value of the OEC program, the coordinator is exploring initiatives such as adding stickers to night lights included in the kits. These stickers would encourage customers to replace older, less efficient lights with the new energy efficient ones provided, aiming to increase the program's effectiveness by ensuring that new items are used to replace existing less-efficient options rather than supplementing them.

Data collection and tracking procedures for the OEC program have not changed this year, with a continued focus on maintaining accuracy and consistency. Data is tracked through a combination of personal spreadsheets and support team processes, which consolidate files to ensure data consistency. The program places significant emphasis on verifying that reported numbers match actual performance and maintaining accuracy for scorecard evaluations. For OEC kits, delivery and confirmation details are managed through weekly files provided by the vendor, including essential information such as names, account numbers, addresses, and tracking numbers to ensure accurate and up-to-date records of kit shipments.

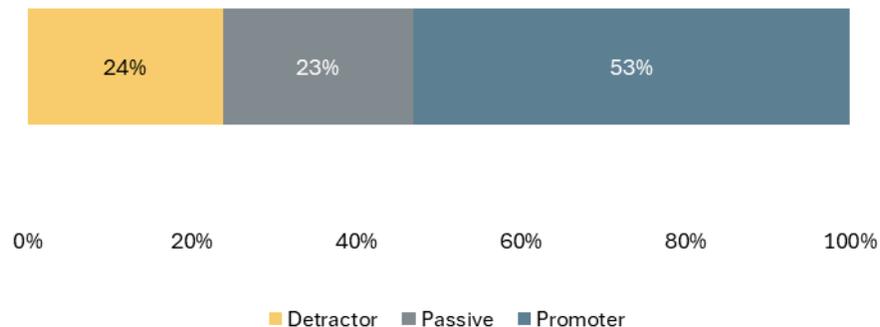
2.3.5.2. Participant Survey Findings

ADM surveyed customers whose households participated in the Online Energy Checkup program. Customers completed an online survey that asked questions about their experience with the program, satisfaction with the kit items, ease of completing the survey, and their home characteristics. Analysis of the survey data was limited to the 166 respondents who answered all survey questions. Partial responses were not used in the analysis of findings presented below because the responses discussed in this section were from survey questions that occurred towards the end of the survey.

2.3.5.3. Net Promoter Score

More than half of the respondents were net promoters, and they were generally satisfied with the cost savings, provided information, and kit items. Based on the survey findings, 24% of respondents were classified as Detractors, 23% as Passive, and 54% as Promoters in terms of their likelihood to recommend the program to others (see Figure 2-1). The Net Promoter Score (NPS) for the Online Energy Checkup program was 29%.

Figure 2-1 Net Promoter Score (n = 164)



Promoters of the OEC program described it as easy, informative, and helpful in promoting energy conservation and cost savings. Participants mentioned the useful information provided, high-quality items, and simple tips for reducing energy usage. Some noted the program's role in raising awareness about energy efficiency, sharing insights with others, and making energy-saving practices accessible. The program was viewed as a beneficial initiative for encouraging sustainability and aiding individuals in saving money while benefiting the environment.

Passive respondents found the OEC useful. While many might recommend it if asked, they wouldn't mention it on their own. Some considered it most suitable for those less familiar with energy conservation, and others pointed out its limited relevance in certain situations, such as having a well. Feedback indicated room for improvement and varied engagement levels.

Detractors highlighted that the program offered limited value and sometimes irrelevant content, failing to provide practical energy-saving information. Some expressed dissatisfaction with missing or inappropriate kit contents, such as water-saving items from an electric utility. Others felt the program lacked impact, was complex, or did not address specific concerns like solar panel crediting. Many stated they rarely discuss energy topics or recommend programs to others.

See Table 2-11 for a breakdown of the categories of comments by group.

Table 2-11 Reason for NPS Rating

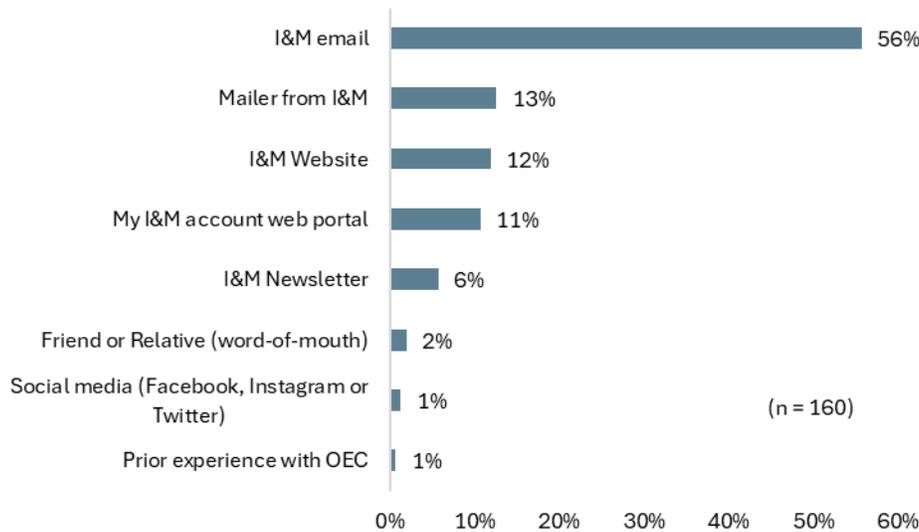
<i>Promoters (n = 87)</i>	<i>Number of Comments (n = 58)</i>
Educational and/or informative	18
Ease of use	6
Encouraging conservation	6
Have already shared with friends, families or others	6
Practical benefits	6
Generally positive feedback	6
Miscellaneous	2
<i>Detractors (n = 39)</i>	<i>Number of Comments (n = 28)</i>
View as a lack of practicality and/or value	9
Reluctance to recommend	7
Dissatisfaction with products and/or services	3
Lack of engagement	2
Mismatch between expectation and deliverables	2
General negative sentiment	3
Miscellaneous	3
<i>Passive (n = 30)</i>	<i>Number of Comments (n = 38)</i>
Educational and/or information	3
Already sharing with family, friends or others	9
Practical benefits	2
Ease of use	2
General positive feedback	3
Reluctance to recommend	10

2.3.5.4. Awareness and Engagement

Most survey respondents learned of the Online Energy Checkup program through an I&M email. Consistent with the primary marketing strategy, 56% of participants learning about the

Online Energy Checkup via email communication from I&M, 13% through a mailer from I&M, and 12% from the I&M website (see Figure 2-2).

Figure 2-2 Sources of Awareness



Customers participated to learn how to reduce their energy bills. Respondents completed the online energy checkup survey and received the energy efficiency kit primarily to learn ways to save money on their energy bills (47%) and because the items were provided free of charge (39%). Environmental reasons were less frequently cited. See Table 2-12 for more information.

Table 2-12 Motivation to Participate in the Online Energy Checkup Program

<i>Responses</i>	<i>Percentage of Responses (n = 259)</i>
To learn about ways to save money on energy bill(s)	47%
The items were provided free of charge	39%
Environmental reasons	14%
Other reasons	1%

2.3.5.5. Completing the Online Energy Checkup Survey

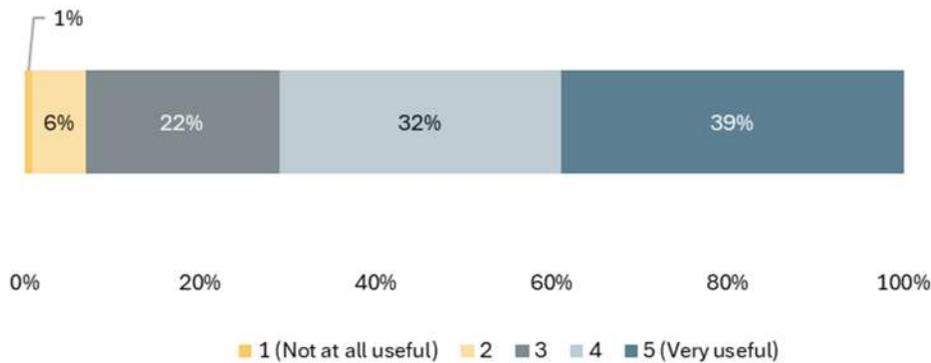
Few respondents had difficulty completing the energy checkup. Most respondents (73%) found the online energy checkup survey to be very easy to complete, while 16% rated it as somewhat easy, with an average score of 4.6. A small percentage of respondents (1%) found it to be somewhat difficult, giving it a rating of 2. See Table 2-13 for additional details. One respondent who encountered difficulty noted the absence of a listing for geothermal HVAC systems in the assessment tool.

Table 2-13 Ease of Completing Online Energy Checkup Survey

<i>Responses</i>	<i>Percentage of Responses (n = 166)</i>
1 (Very difficult)	0%
2	1%
3	10%
4	16%
5 (Very easy)	73%

Survey respondents provided feedback on the Online Energy Checkup's effectiveness in enhancing their understanding of energy conservation methods. A significant majority, 71% of participants, rated the tool as very or somewhat useful, assigning it a 4 or 5 on a 5-point scale. A small portion (1%) found the online checkup not at all useful in aiding their comprehension of energy-saving techniques (see Figure 2-3).

Figure 2-3 Usefulness of the Online Checkup (n = 166)

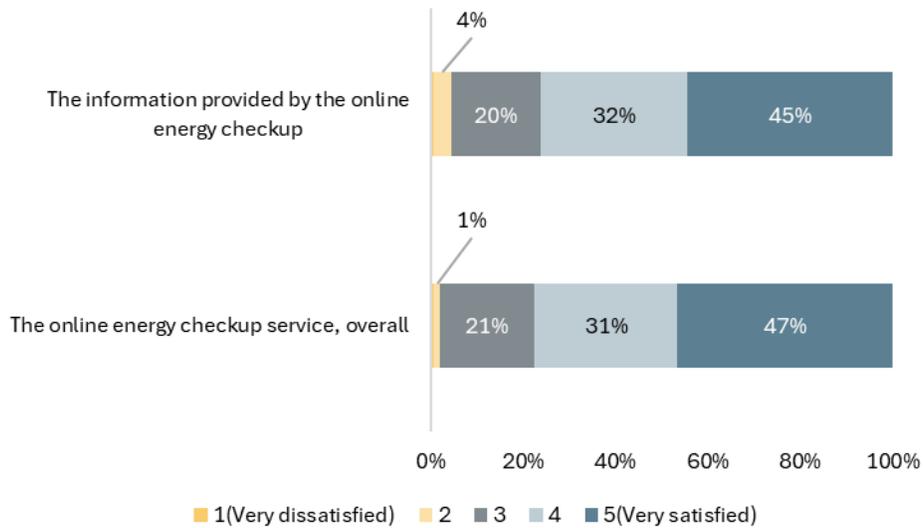


2.3.5.6. Satisfaction Online Energy Checkup Survey and Kit Items

Respondents were generally satisfied with the Online Energy Checkup program and the information provided. Overall, 78% of participants were satisfied or very satisfied with the online energy checkup service, and 76% were satisfied or very satisfied with the information it provided. Dissatisfaction was minimal, with 2% expressing dissatisfaction with the OEC service and 4% expressing dissatisfaction with the information (see Figure 2-4). The small share of participants who expressed dissatisfaction did so for several reasons, including not receiving the kit, items being of low quality or incompatible with their fixtures, difficulty in using the power strip, and a lack of perceived value or energy savings. Some noted that the program's offerings were not useful or had already been installed, while others found the program overly basic or irrelevant to their needs. A few respondents mentioned that low-flow items exacerbated water pressure problems or specific items broke. Others cited general disinterest or fatigue with the survey process. However,

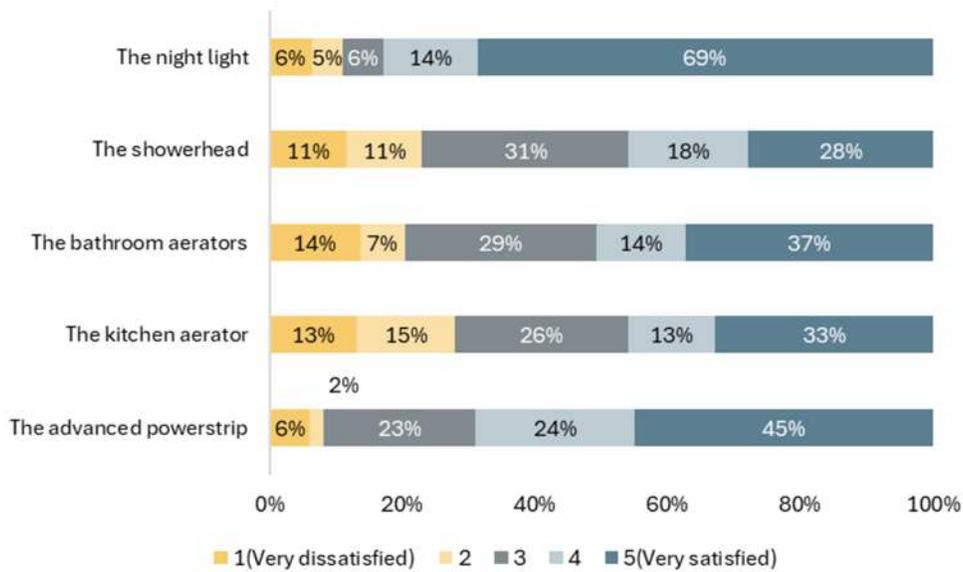
we reiterate that the majority of respondents were satisfied with the service and the information provided.

Figure 2-4 Satisfaction with the Online Energy Checkup Program



Satisfaction levels varied among items in the energy efficiency kit (see Figure 2-5). The nightlight received the highest satisfaction rating (83%), while the advanced power strip also performed well (69% satisfied, 8% dissatisfied). Satisfaction was moderate for the bathroom aerators (51%) and the kitchen aerator (46%), though the latter had a higher dissatisfaction rate (28%). The showerhead showed similar results, with 46% satisfied and 23% dissatisfied.

Figure 2-5 Satisfaction of Kit Items



Many respondents (49%) expressed high satisfaction with I&M as their electricity service provider, while 32% indicated they were somewhat satisfied. A small percentage (6%) reported being dissatisfied with I&M. See Table 2-14 for additional details.

Table 2-14 Satisfaction with I&M

<i>Responses</i>	<i>Percentage of Responses (n = 165)</i>
1 (Very dissatisfied)	1%
2	5%
3	13%
4	32%
5 (Very easy)	49%

2.3.5.7. Demographic Findings

The majority of respondents (87%) own the residence where they completed the online energy checkup, while 11% are renters. Most participants (84%) reside in single-family detached homes, with smaller proportions living in attached houses (4%), apartments (7%), or other types of properties. A significant portion of these homes (61%) were constructed before 1980, with 20% dating back to before 1950. Homes built after the year 2000 comprise 19% of the total. The average reported home size is approximately 1,880 square feet.

Natural gas is the predominant heating source for homes (71%) and water heaters (55%), with electricity being the second most common fuel. A typical household consists of two people year-round (48%) and usually contains two bathroom faucets (44%) and two showers (49%).

Household incomes vary considerably, with the largest segment reporting an annual income between \$50,000 and \$75,000 (19%), although 33% of respondents chose not to disclose their income.

2.4. Findings and Recommendations

Overall, the evaluation finds that the Online Energy Check-Up (OEC) program has maintained consistent operations in 2024, with no significant changes to program design, core offerings, or data tracking processes. Marketing efforts remained consistent with prior years. The program continues to prioritize accurate data collection and reporting, ensuring alignment with performance goals. Additionally, program staff are exploring minor enhancements, such as adding educational stickers to kit items, to further improve customer engagement and energy efficiency awareness.

Most respondents were satisfied with the program’s cost savings, information, and kit items. The program received a Net Promoter Score of 29%. The program received high satisfaction ratings, with 78% of participants satisfied with the service and 76% with the information provided. Dissatisfaction was minimal but primarily related to kit delivery issues, product compatibility, and

perceived usefulness. Satisfaction levels varied by kit item, with the night light receiving the highest approval and kitchen aerators and showerheads generating more mixed feedback.

Most participants learned about the Online Energy Checkup program through I&M emails and joined primarily to reduce energy costs. The Online Energy Checkup program effectively reached participants through I&M emails, with cost savings being the primary motivation for engagement. While many respondents installed additional energy efficient equipment after participating, a lack of awareness about available rebates was a common barrier to claiming incentives.

Most respondents found the OEC easy to complete and useful for understanding energy conservation. The OEC was largely regarded as accessible, with 89% of respondents rating it as very or somewhat easy to complete. Additionally, 71% found it useful in improving their understanding of energy-saving methods, though a small portion of respondents encountered difficulties or perceived limited value.

3. AMI Portal

This chapter presents the results of both the impact and process evaluations of the Residential AMI Portal service I&M provided to customers during the period of January 2024 through December 2024.

The objectives of the evaluation were to:

- Assess net energy (kWh) savings and peak demand (kW) reductions resulting from participation in the program during the program year.
- Provide recommendations for program improvement as appropriate.

3.1. Program Description

The Residential AMI Portal service provides residential customers, with AMI meters, detailed information on their energy usage. Customers may log on to their account to view and explore their energy use over time alongside relevant comparisons based on weather, neighbors, and prior usage. The portal also provides a bill forecast tool that shows customers their current usage or cost to date in the billing period, their projected usage or cost for the billing period, and their typical usage or cost for the period, based on their past usage. The portal provides customers with historical data on their energy usage and costs, and information on energy usage and weather trends. In addition to the portal, customers may:

- Receive high bill alerts when their bill is 25% higher compared to the same month during the previous year for customers included in the random sample designated to receive the high bill alerts if they meet the condition.
- A weekly energy report for customers included in the random sample designated to receive the report.

3.1.1. 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:

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

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 random sample of 9,555 participants in the Home Online Energy Checkup Program. Participants were contacted by email to complete the survey and received up to three emails invitations. Table 2-2 summarizes the results of the survey data collection effort.

Table 3-1 Home Online Energy Checkup Survey

<i>Survey</i>	<i>Mode</i>	<i>Time Frame</i>	<i>Number of Contacts</i>	<i>Number of Completions</i>	<i>Completion Rate</i>
Residential AMI Portal	Email	August 2024	9,555	98	1.0%

3.2. Estimation of Ex Post Net Savings

3.2.1. Methodology for Estimating Ex Post Net Energy Savings

3.2.1.1. Data Used in Estimation of Ex Post Net Energy Savings

The analysis of the Residential AMI Portal used the following data:

- Billing data with customer account energy use.
- Records of customer engagement with the AMI services. These data include engagement with the portal, received of the Weekly AMI (WAMI) report, and receipt of high bill alerts.
- Oracle control and treatment group assignments for the WAMI and high bill alerts (HBA) services.

3.2.1.2. Modeling Approaches

ADM estimated the impact of the AMI portal using different definitions of the treatment group and different types of regression models to estimate the impacts of the treatment. To account for the effect of weather on energy use, all models included heating degree days and cooling degree days.

Table 3-2 summarizes the definitions of the treatment groups and the comparison groups used in the analyses.

ADM applied two different types of regression models to estimate the effect of the treatment for each of the definitions of the treatment group listed below. The models incorporated a comparison group. Using a comparison group allows for the assessment of the treatment effect on energy use

while accounting for other factors that may affect energy use in general (for example, economic environment-related factors may affect energy use and are unrelated to the treatment).

- Difference-in-difference model. The difference-in-difference model is designed to control changes in energy use over time that affect both the treatment and comparison group. This is done by comparing energy use in the pre and post treatment periods for the treatment group to the pre and post period energy use in the comparison group.
- Post-treatment comparisons only model, with pre-treatment controls. This model compares energy use for the treatment and comparison group only during the post period.

For cohorts that did not include a randomized control group—specifically, those that accessed the AMI portal—ADM used propensity score matching to identify a comparable group of non-participating customers. The propensity scores were developed based on pre-period energy usage and zip code, consistent with our approach in prior evaluations. However, this methodology was modified for the PY2024 evaluation due to changes in the availability of non-participating customers.

As AMI services have expanded over time, the pool of customers who have not engaged with the service has decreased, limiting our ability to construct a well-matched control group. To address this constraint, ADM employed a matching-with-replacement strategy, allowing a single non-participating customer to be matched to multiple participating customers. This approach assigns weights to matched customers, effectively representing them as more than one customer in the analysis. While this method helps compensate for the limited availability of non-participants, it introduces additional uncertainty, as any anomalies in individual comparison group customers are amplified according to their assigned weight.

Given this added uncertainty, it is essential that both the LFER and PPR models produce converging results to confirm that the service has an effect.

Because a limited number of untreated customers were available for use in developing a matched control group, ADM selected a random sample of treatment group customers to balance the number of customers in the treatment and comparison group.

For the High Bill Alert Treatment RCT and WAMI Treatment RCT, ADM used Oracle’s random assignment of customers to the treatment and control groups. The treatment and control group design did not account for cross participation in the services, for example, HBA treatment group customers were allowed to act as controls for the WAMI service. Because of that, we ran the regression models using the treatment and control group assignments as assigned by Oracle, as well as with a subset of the assigned customers that did not receive or engage with the other services.

Table 3-2 Summary of Treatment Groups Used to Estimate Annual AMI Impacts

<i>Cohort Name</i>	<i>Treatment Group Description</i>	<i>Count of Customers in the Treatment Group (Sampled Cases)</i>	<i>Count of Customers in the Control Group</i>
All Customers with Portal Access	Customers who Accessed Portal	34,302	20,108
Accessed Bill Forecast - Compare My Bills	Participants who accessed the Bill Forecast and Compare My Bills parts of the portal.	8,762	8,469
Accessed Compare My Bills	Participants who accessed the Compare My Bills part of the portal.	8,259	7,950
High Bill Alert Treatment RCT - All	Participants randomly assigned to receive high bill alerts.	93,958	2,364
High Bill Alert Treatment RCT - Propensity Score Model Adjustment	Participants randomly assigned to receive high bill alerts with propensity score matched weighting to adjust for non-equivalence in treatment and control group pre-period energy use.	92,688	2,352
WAMI Treatment RCT - All	Participants randomly assigned to receive the WAMI	56,350	16,580

3.2.1.3. Regression Modeling

3.2.1.3.1. Weather Optimization Model

The regression models used in the analysis are described below. Both models included terms for cooling degree days (CDD) and heating degree days (HDD) to account for weather-related changes in energy use. CDD and HDD were developed using local temperature data retrieved from the National Oceanic and Atmospheric Administration (NOAA). The CDD and HDD were optimized for each participant, rather than using a fixed value across all participants. To optimized the CDD and HDD, combinations of CDD base values (CDD65, CDD70, CDD75, CDD80) and HDD base values (HDD50, HDD55, HDD60, HDD65) were iteratively run using Equation 3-1. The CDD/HDD base value combination that produced the highest adjusted R-square value was the CDD/HDD value used for that participant.

Equation 3-1 Cooling and Heating Degree Optimization Regression Model

$$kWh_{imy} = \beta_0 + \beta_{had,it} * HDD_{it} + \beta_{cdd,it} * CDD_{it} + \epsilon_{it}$$

Table 3-3 Cooling and Heating Degree Day Model Terms

<i>Variable</i>	<i>Definition</i>
kWh_{imy}	Customer i's average daily electric usage in month m of year y.
β_0	The intercept term.
$\beta_{hdd,it}$	The coefficient for the main effect of HDD.
$\beta_{cdd,it}$	The coefficient for the main effect of CDD.
HDD_{it}	The HDD variable calculated for iteration t for customer i.
CDD_{it}	The CDD variable calculated for iteration t for customer i.
ϵ_{it}	The error term for the iteration.

3.2.1.3.2. *Difference-in-Difference (DiD) Model*

The difference-in-difference (DiD) regression model is a statistical technique used to estimate the effect of a treatment by comparing the change in outcomes over time between a group of participants and a comparison group. This model allows for the analysis of data across pre- and post-treatment periods, providing insights into the treatment's impact. Although it's possible to specify the model with a fixed effects term, this approach often leads to a loss of degrees of freedom for the main effect of "treatment" due to perfect collinearity with the intercept term. As a result, the random effects model is typically preferred for its enhanced interpretability, maintaining the ability to assess the treatment effect while avoiding the limitations associated with fixed effects specification. Equation 3-2 specifies the regression model.

Equation 3-2 *Difference-in-Difference (DiD) Model*

$$\begin{aligned}
 kWh_{imy} = & \beta_0 + \beta_1 * post_{imy} + \beta_2 * treatment_i + \sum_{m=1}^{12} \beta_m * month + \beta_{hdd} * HDD_{imy} \\
 & + \beta_{cdd} * CDD_{imy} + \beta_t * post_{imy} * treatment_i + \beta_{t,hdd} * post_{imy} \\
 & * treatment_i * HDD_{imy} + \beta_{t,cdd} * post_{imy} * treatment_i * CDD_{imy} + \epsilon
 \end{aligned}$$

Table 3-4 Difference-in-Difference (DiD) Model Terms

Variable	Definition
$kWh_{i,my}$	Customer i's average daily electric usage in month m of year y.
β_0	The intercept term.
β_1	The coefficient for the main effect of post.
β_2	The coefficient for the main effect of treatment.
β_m	A matrix of coefficients for the main effect of month.
β_{hdd}	The coefficient for the main effect of HDD.
β_{cdd}	The coefficient for the main effect of CDD.
β_t	The coefficient for the post-treatment interaction.
$\beta_{t,hdd}$	The coefficient for the post-treatment-HDD interaction.
$\beta_{t,cdd}$	The coefficient for the post-treatment-CDD interaction.
$post_{i,my}$	An indicator variable which indicates whether a given month falls into a customer's post-treatment period.
$treatment_i$	An indicator variable which indicates whether a customer falls into the treatment group or not.
$HDD_{i,my}$	The HDD calculated for a given customer for a given month.
$CDD_{i,my}$	The CDD calculated for a given customer for a given month.
ε	The error term.

3.2.1.3.3. Post Period Regression (PPR) Model

The post-period regression (PPR) model is designed to assess the impact of interventions by comparing observations from participants after the treatment with those from a comparison group. Unlike models that assess changes over time, the PPR model focuses specifically on the period following the intervention. It incorporates pre-treatment consumption data, segmented across four distinct seasons, as variables. This approach allows for the control of individual differences that could influence consumption patterns. By using these seasonal consumption figures as control variables, the model aims to provide a more accurate estimate of the treatment effect by accounting for variations in consumption that are not related to the treatment. This method is particularly useful in studies where external factors, such as seasonal changes, could significantly affect the outcome variable. Equation 3-3 specifies the PPR regression model.

Equation 3-3 Post Period Regression (PPR) Model

$$\begin{aligned}
kWh_{i,my} = & \beta_0 + \sum_{m=1}^{12} \beta_m * month + \sum_{s=spring}^{winter} \beta_s * pre_{s,i} + \sum_{m=1}^{12} \sum_{s=spring}^{winter} \beta_{m,s} * month * pre_{s,i} \\
& + \beta_{hdd} * HDD_{i,my} + \beta_{cdd} * CDD_{i,my} + \beta_t * treatment_i + \beta_{t,hdd} * treatment_i \\
& * HDD_{i,my} + \beta_{t,cdd} * treatment_i * CDD_{i,my} + \varepsilon
\end{aligned}$$

Table 3-5 Post Period Regression Model Terms

<i>Variable</i>	<i>Definition</i>
$kWh_{i,my}$	Customer <i>i</i> 's average daily electric usage in month <i>m</i> of year <i>y</i> .
β_0	The intercept term.
β_m	A matrix of coefficients for the main effect of month.
β_s	A matrix of coefficients for the main effect of pre-usage in each of the four seasons (spring, summer, fall, winter) for customer <i>i</i> .
$\beta_{m,s}$	A matrix of coefficients for the interaction between month and season.
β_{hdd}	The coefficient for the main effect of HDD.
β_{cdd}	The coefficient for the main effect of CDD.
β_t	The coefficient for the main effect of treatment.
$\beta_{t,hdd}$	The coefficient for the treatment-HDD interaction.
$\beta_{t,cdd}$	The coefficient for the treatment-CDD interaction.
$treatment_i$	An indicator variable which indicates whether a customer falls into the treatment group or not.
$pre_{s,i}$	The average daily consumption during spring, summer, fall, and winter for customer <i>i</i> . Spring was defined as March through May. Summer was defined as June through September. Fall was defined as October/November. Winter was defined as December, January, and February.
$HDD_{i,my}$	The HDD calculated for a given customer for a given month.
$CDD_{i,my}$	The CDD calculated for a given customer for a given month.
ϵ	The error term.

3.2.1.4. Regression Model Findings

Table 3-6 presents the results of the regression analysis. The analyses identified one statistically significant effect of the AMI portal service, which was associated with increased energy use. The remaining effects were not statistically significant. This effect was observed in the model using the matched comparison group.

As noted in the methodology section, we would expect convergence between the DiD and PPR models to draw conclusions about the effect in the matched models. However, we did not observe such convergence. It is possible that the observed increase in energy use is driven by self-selection bias—customers who accessed the portal may have done so because their energy use was already high.

The absence of statistically significant energy savings contrasts with the PY2023 findings, where a small decrease in energy use was observed in the WAMI randomized control trial. However, in that year, the lower bound of the 90% confidence interval was close to zero (1.55), indicating a relatively weak effect.

Table 3-6 Summary of Regression Results

Cohort	Model	Annual Savings (Per Account)	90% Confidence Interval	Statistically Significant	Estimate of Effect on Energy Use
All Customers who Accessed Portal	DiD	-88.68	-161.79 / -15.56	Yes	Associated with Higher Energy Use
	PPR	-38.66	-106.52 / 29.2	No	Not significant, directionally higher use
Accessed Bill Forecast - Compare My Bills	DiD	-14.86	-132.08 / 102.37	No	Not significant, directionally higher use
	PPR	6.80	-84.95 / 98.54	No	Not significant, directionally lower use
Accessed Compare My Bills	DiD	2.49	-122.03 / 127.	No	Not significant, directionally lower use
	PPR	5.12	-90.58 / 100.82	No	Not significant, directionally lower use
High Bill Alert Treatment RCT - All	DiD	-113.35	-284.48 / 57.77	No	Not significant, directionally higher use
	PPR	-155.91	-323.12 / 11.31	No	Not significant, directionally higher use
High Bill Alert Treatment RCT - Propensity Score Model Adjustment	DiD	-106.12	-278.08 / 65.84	No	Not significant, directionally higher use
	PPR	-153.64	-566.9 / 259.63	No	Not significant, directionally higher use
WAMI Treatment RCT - All	DiD	-9.37	-78.67 / 59.94	No	Not significant, directionally higher use
	PPR	-3.84	-68.18 / 60.49	No	Not significant, directionally higher use

3.2.2. Results of Ex Post Net Energy Savings Estimation

There were no savings associated with the AMI Portal in PY2024.

3.3. Survey Findings

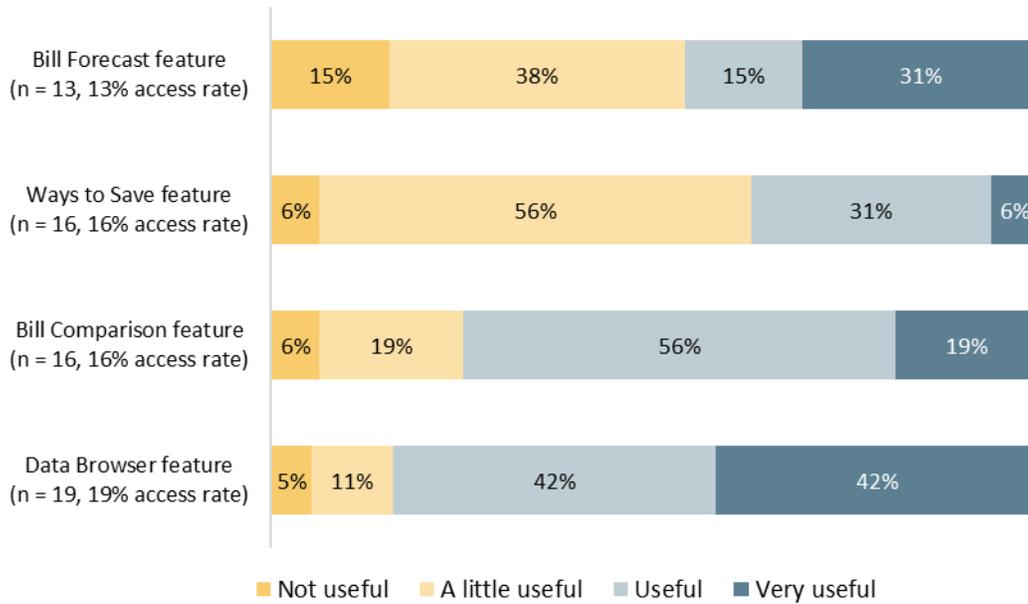
ADM surveyed customers whose households logged into I&M’s Energy Management Tools through their IndianaMichiganPower.com account. These tools provide information on trends in your electricity usage and energy use compared to similar homes. Analysis of the survey data was limited to the 98 respondents who completed the survey. Of the 98 customers who accessed the survey, 49% of respondents said they did not access the portal, while 40% reported having accessed it. An additional 11% of respondents were unsure if they had accessed the programs.

3.3.1.1. AMI Portal Features

The components of the portal were infrequently accessed, but the bill comparison and browser features were considered more useful than bill forecasts and ways to save. Nearly a third (33%) of respondents reported using the Bill Forecast feature, with 31% rating it as very

useful. The Data Browser feature was used by 49% of respondents, and 42% found it very useful. The Bill Comparison feature was used by 41% of respondents, with 19% rating it as very useful. The Ways to Save feature was used by 45% of respondents, with 6% finding it very useful. See Figure 3-1 for more information.

Figure 3-1 Usefulness of AMI Portal Features



Analysis of account records show lower levels of engagement with the portal widgets. Table 3-7 summarizes the share of customer accounts engaging with the different components of the portal. Engagement with portal components varied, with Compare My Bills (14%) and Bill Forecast (8%) having the highest levels of customer interaction. In contrast, Ways to Save and Home Energy Analysis had the lowest engagement, each at just 1%. Among the Data Browser features, individual engagement remained low, ranging from 1% to 5%, with Highest Days of Use (4%) and My Energy Use (5%) showing slightly higher usage compared to Home Energy Analysis (1%).

Table 3-7 Account Record Engagement

Portal Component	Percent of Customer Accounts Engaging
Bill Forecast	8%
Compare My Bills	14%
Green Button	5%
Data Browser - Highest Days of Use	4%
Data Browser - Home Energy Analysis	1%
Data Browser - Home Energy Disaggregation	5%

Data Browser - My Energy Use	5%
Ways to Save	1%

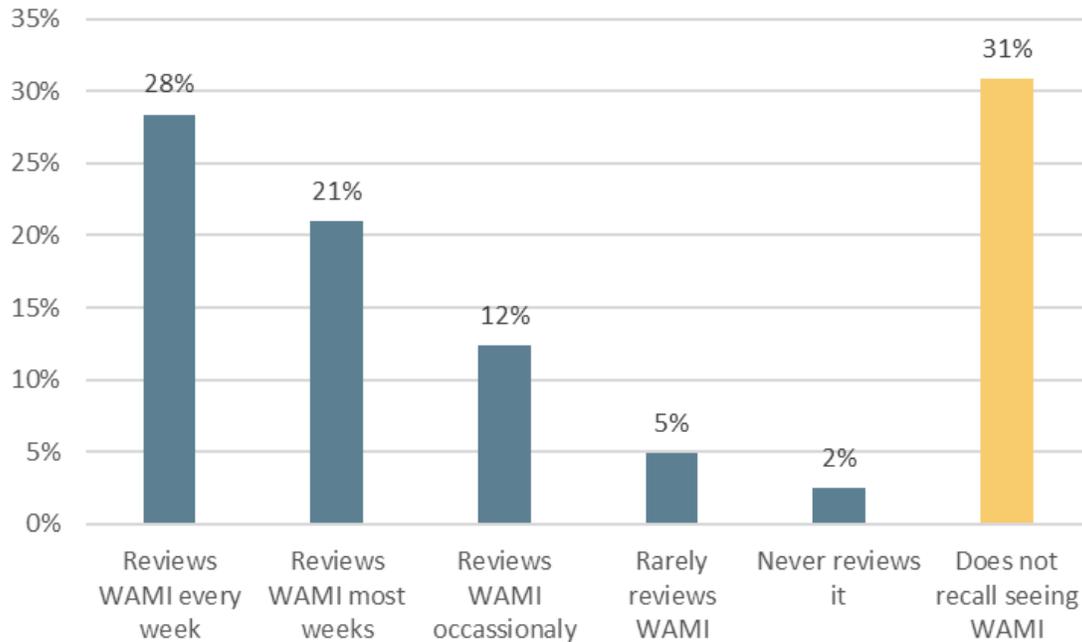
Generally, lack of awareness was the most common reason customers did not use the AMI Portal features. Among those who did not use the Bill Forecast feature, 58% were unaware of it, 17% did not find it useful, 8% had technical difficulties, and 4% found it too complicated. For the Data Browser feature, 50% were unaware, 15% perceived it as not useful, 15% encountered technical issues, and others cited reasons such as not needing the information. The primary reasons for not using the Ways to Save feature included unawareness (40%), perceived lack of usefulness (33%), complexity (7%), and technical difficulties (7%). Respondents indicated that they did not use the Bill Comparison feature because they were not aware of it (52%), did not think it would be useful (29%), had technical issues (14%), or found it complicated (5%). See Table 3-8 for more information.

Table 3-8 Reasons for not Accessing the Bill Forecast Feature

<i>Reason</i>	<i>Percentage of Respondents Bill Forecast Feature (n = 24)</i>	<i>Percentage of Respondents Data Browser Feature (n = 20)</i>	<i>Percentage of Respondents Bill Comparison Feature (n = 21)</i>	<i>Percentage of Respondents Ways to Save Feature (n = 20)</i>
Not aware of it	58%	50%	52%	40%
It seemed too complicated to use	4%	5%	5%	7%
Did not think it would be useful	17%	15%	29%	33%
Attempted to use it but encountered technical difficulties	8%	15%	14%	7%
Other	13%	15%	0%	13%

A majority of respondents (61%) reported reviewing the weekly AMI (WAMI) report at least occasionally, with 28% reviewing it every week and 21% most weeks. However, 31% did not recall seeing the report, indicating a potential gap in awareness or engagement. A small percentage (7%) reported rarely or never reviewing it.

Figure 3-2 WAMI Engagement



3.3.1.2. Electricity Usage Based on Energy Use Information

Most respondents adjusted their electricity use based on portal information, mostly making general changes or targeting specific times like the afternoon and evening. Fifty-one percent of respondents have adjusted their electricity use based on energy use information provided through the portal, while 49% have not. Among those who made changes, 61% did so in general, 22% adjusted both during specific times of the day and in general, and 17% focused on specific times. Among those who were targeting specific times, 31% aimed to reduce energy use in the afternoon, 23% at night, 19% in the evening, 15% midday, and 12% in the morning.

Actions to reduce energy use commonly include turning off or unplugging devices when not in use and adjusting lighting habits. Many respondents also reported modifying air conditioning usage, such as raising the thermostat settings or turning off the AC when weather permits.

Other energy reducing activities included altering the timing of energy-intensive activities and using energy efficient measures like LED bulbs. Additionally, some respondents mentioned behavioral adjustments, such as grilling instead of using the stovetop and closing curtains to manage heat and sunlight. Responses were categorized and presented in Table 3-9.

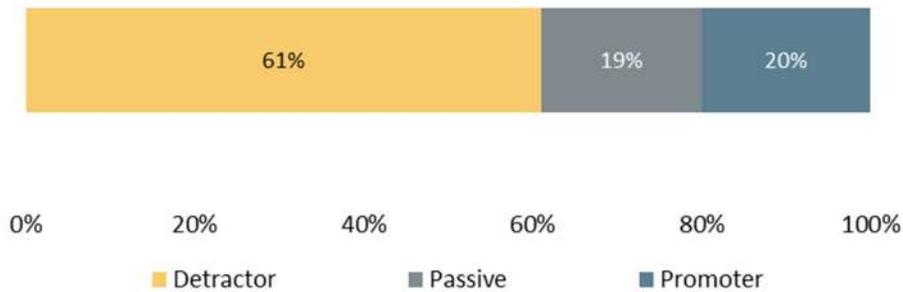
Table 3-9 Actions Taken to Reduce Energy Use

Action	Number of Respondents
Modifying air conditioning usage	10
Turning off or unplugging devices	8
Turning off lights when not in use	7
Behavioral adjustments	4
Altering timing of energy intensive activities	3
Being more energy efficient	3

3.3.1.3. Net Promoter Score

More than half of the respondents were detractors, resulting in a negative net promoter score. Based on the survey findings, 61% of respondents were classified as Detractors, 19% as Passive, and 20% as Promoters in terms of their likelihood to recommend the program to others (see Figure 3-3). The Net Promoter Score (NPS) for the AMI Portal program in Indiana was -41%.

Figure 3-3 Net Promoter Score (n = 70)



Among promoters, the feedback highlights a strong appreciation for the tools' helpfulness and effectiveness. Respondents valued the information provided, noting it as useful and indicative of I&M's commitment to energy conservation. Satisfaction with the tools was also expressed, with comments reflecting a positive resolution of any issues encountered. Some respondents acknowledged the potential impact of the tools on others, even if not everyone might use them.

Among detractors, common concerns include the perception that the tools and reports are not relevant or useful, with many noting that they do not use them or find them beneficial. Technical issues and problems with functionality were frequently mentioned, including issues with loading and customer service responses. Additionally, some respondents felt that additional monitoring was unnecessary because they already manage their energy use effectively or believe that energy costs are primarily driven by rates rather than usage. There were also comments

indicating a preference for not sharing advice or discussing energy strategies with others, as well as a general sense of dissatisfaction with the impact of the tools on reducing bills.

Among passive respondents, the main themes are a mixed perception of usefulness and uncertainty. Many found the tools to be potentially useful but expressed hesitation about their effectiveness or the effort required to use them. Some respondents appreciated the guidance provided but did not find it significantly impactful or felt it induced more anxiety than benefit. Additionally, a few respondents were uncertain about the tools' value or their own understanding of them.

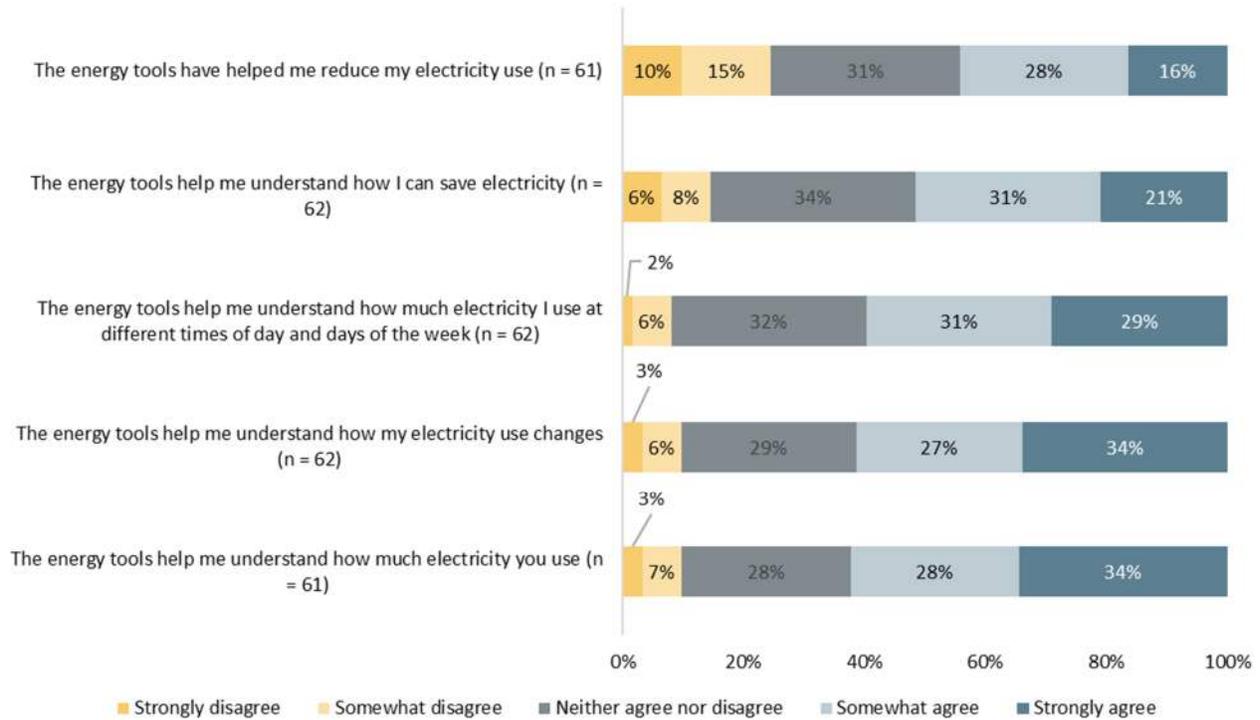
Table 3-10 Reason for NPS Rating

<i>Promoters (n = 14)</i>	<i>Number of Comments (n = 11)</i>
Helpfulness and effectiveness	7
Resolution and satisfaction	2
Potential impact	2
<i>Detractors (n = 43)</i>	<i>Number of Comments (n = 30)</i>
Lack of relevance/usefulness	13
No need for additional monitoring	6
Technical issues or problems	4
Cost-related concerns about their bill	4
Communication preferences	3
<i>Passive (n = 13)</i>	<i>Number of Comments (n = 9)</i>
Perceived usefulness	5
Uncertainty/indifference	4

3.3.1.4. Satisfaction

Most respondents felt that the energy tools are useful in understanding their electricity use, particularly in tracking changes over time and usage patterns, though fewer found them effective in saving or reducing electricity. The majority of respondents felt that the energy tools help them understand their electricity use, with 62% agreeing that the tools are useful for this purpose. Similarly, 61% found the tools helpful in understanding changes in their electricity use over time. Sixty percent agreed that the tools assist in understanding usage at different times of the day and days of the week. However, 52% agreed that the tools help them understand how to save electricity. Finally, 44% felt that the tools have been effective in reducing their electricity use. See Figure 3-4 for more information.

Figure 3-4 Perceived Effectiveness of Energy Tools in Understanding and Reducing Electricity Use



There was feedback emphasizing the need for technical reliability and clearer benefits. The majority of responses regarding suggestions for improving the energy tools were either neutral or negative. Common themes included requests for improved functionality, such as ensuring the tools load properly and addressing technical issues. Some respondents suggested exploring better investment in renewable energy and improving communication about the tools, especially for new customers. Others expressed frustration with rate increases and found the tools either unnecessary or insufficiently useful, with a few mentioning the need for better integration with solar panel data or simpler user experiences.

3.4. Findings and Recommendations

Analysis of interactions with the AMI Portal, the WAMI, and the bill alerts did not indicate that the services were reducing energy use in PY2024. This lack of findings differs from the small effect of energy savings resulting from the WAMI found in PY2023.

- Recommendation 1:** We recommend that I&M provide the full Home Energy Report (HER) service to customers to support behavioral energy savings. The HER has been more consistently associated with measurable reductions in energy use compared to the AMI portal tools.

The HER’s effectiveness is grounded in its use of social norm comparisons. The report shows how a customer's energy use compares to similar households and includes evaluative

feedback (e.g., “fair,” “good,” or “great”). This combination of descriptive and injunctive norms encourages customers to align their behavior with the perceived standard. While the AMI portal includes similar neighbor comparisons, they are less prominent and require users to actively seek them out.

Salience also plays a role. HERs are delivered via mail and email, which increases visibility and reduces the need for customers to engage proactively with a digital platform. In contrast, portal-based tools rely on self-directed exploration, which can limit engagement.

The HER is also streamlined in presentation, typically offering a concise set of statistics and a few targeted energy-saving tips on a two-page format. While the portal provides more granular and extensive data, this volume of information may be overwhelming or cognitively burdensome for some users, potentially reducing the likelihood of action.

Finally, the evaluation design used for HERs—typically involving randomized control groups—supports reliable estimation of energy savings. While some AMI portal components (e.g., WAMI and Bill Alerts) also use randomized designs, they lack key features like social norm framing. Additionally, the frequency of the WAMI (weekly) may contribute to alert fatigue, diminishing its effectiveness over time.

More than half of the respondents have used most of the AMI Portal features, though there is a significant portion who remain unaware of or do not find certain features useful. Usage rates varied across features, with the Bill Comparison feature being the most utilized and the Bill Forecast feature being the least. Awareness and perceived usefulness (i.e., 44% agreed that the tools helped them save energy) were key factors influencing feature adoption. Additionally, analysis of records of engagement indicate that the ways to save section of the portal, which provides energy saving recommendations, had a particularly low level of engagement (1%) of accounts engaged with this section.

Additionally, many respondents actively engage with the weekly energy usage report, indicating a strong interest in monitoring their energy consumption.

- **Recommendation 2:** Identify ways of increasing the usefulness of the portal as a tool to help customers save energy. Some tactics to consider include:
 - Improve Framing and Interpretation of Savings Tips. While personalized tips are already provided, it may not always be clear why they are relevant or how they connect to the user’s specific behavior. Consider clarifying the linkage between observed usage patterns and suggested actions, and reinforce how those actions can directly result in bill reductions.
 - Introduce Behavioral Nudges or Progress Feedback. Incorporate behavioral design features (e.g., goal tracking, badges for completed actions, or comparisons to similar users who have reduced usage) to make energy-saving feel more tangible and engaging. This builds on existing tools without duplicating them.

Slightly more than half of respondents adjusted their electricity use based on portal information, with most making general changes or targeting specific times like the afternoon and evening. Fifty-one percent of respondents reported modifying their electricity use based on portal insights, with 61% making general adjustments and 39% focusing on specific times. The most common targeted periods were the afternoon (31%) and evening (19%). Energy-saving actions primarily involved turning off or unplugging devices, adjusting lighting habits, and modifying air conditioning use. Other reported behaviors included shifting energy-intensive activities and adopting energy-efficient measures.

The AMI Portal service received a negative Net Promoter Score (-41%), with most respondents classified as Detractors, citing limited usefulness and relevance of the tools. Sixty-one percent of respondents were Detractors, while 20% were Promoters, leading to a negative NPS. While most users found the tools helpful in understanding electricity usage patterns (62%), fewer (44%) felt they effectively reduced energy use. Common feedback from Detractors included perceived irrelevance, lack of engagement, and technical reliability issues. Suggested improvements focused on better functionality, clearer communication of benefits, and enhanced integration with renewable energy data.

4. Residential Income Qualified Weatherproofing

This chapter presents the results of both the impact and process evaluations of the 2024 Income Qualified Weatherproofing Program that Indiana Michigan Power (I&M) offered to its residential customers during the period of January 2024 through December 2024.

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.

4.1. Program Description

The Income Qualified Weatherproofing Program is offered to residential customers who would not otherwise have the ability to make energy efficiency improvements on their own. The program provides energy audits, direct install measures, and weatherization services to qualifying customers at no cost to the customer.

The first step to participate in the program is for customers to sign up and receive a Home Energy Assessment. During the assessment, the auditor identifies energy efficiency improvements, conducts direct installation of some measures, and records which additional weatherization measures need to be implemented. Customers may receive a remote telephone or virtual audit instead of an in-person audit. Customers who receive a remote audit are provided with a kit of efficiency measures. The kit measures are presented in the table below.

Table 4-1 Virtual Kit Measures

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

4.2. Data Collection

4.2.1. 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:

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

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.¹ As shown in Table 4-2, ADM did not achieve those response counts. For this reason, ADM combined PY2023 and PY2024 responses to estimate the in-service rates for the program measures.

ADM administered the survey to a census of unique contacts with contact information available at the time the two surveys were fielded. Participants that received a virtual audit kit were contacted up to three times, by email, to complete the survey. In home participants were contacted by telephone and up to three calls were placed for each contact.

Table 4-2 Income Qualified Weatherproofing Survey Data Collection

<i>Survey</i>	<i>Mode</i>	<i>Time Frame</i>	<i>Number of Contacts</i>	<i>Number of Completions</i>	<i>Completion Rate</i>
IQW: In-Home Participant	Telephone	January 2025	60	2	3.3%
IQW: Virtual Audit Participant	Email	August 2024	289	9	3.1%
IQW: Virtual Audit Participant	Email	December 2024	76	5	6.6%
Total			425	16	3.8%

4.3. Estimation of Ex Post Gross Savings

4.3.1. Methodology for Estimating Ex Post Gross Energy Savings

4.3.1.1. 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

¹ This count excludes the installations of PTACs in multifamily projects.

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 were installed.

4.3.1.2. Procedures for Estimating Measure-Level Gross Energy Savings

Table 4-3 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 4-3 Income Qualified Weatherization Calculation Input Information

<i>Variable Type</i>	<i>Variable Name</i>	<i>Variable Value</i>	<i>Variable Value Source</i>
Measure Name: 9W LED - Kit			
Savings	ΔkWh		$(WattsBase - WattsEE) * Hours * (WHFe + IF) / 1000$
Savings	ΔkW		$per_unit_gross_ex_post_kwh_savings * cdf$
Input	<i>WattsBase</i>	Varies	Illinois TRM V10 Vol. 3, p. 289. 9W equiv
Input	<i>WattsEE</i>	Varies	Program tracking data.
Input	<i>Hours</i>	Varies	Illinois TRM V10 Vol. 3, p. 291
Input	<i>WHFe</i>	Varies	Illinois TRM V10 Vol. 3, p. 291
Input	<i>IF</i>	Varies	Illinois TRM V10 Vol. 3, p. 293
Input	<i>cdf</i>	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		3	Indiana TRM 2023 Workbook, 5.5.6 and 5.5.9, Income Eligible
Measure Name: LED Nightlight - Kit			
Savings	ΔkWh		$(WattsBase - WattsEE) * Hours / 1000 * (WHFe + IF)$
Savings	ΔkW		$per_unit_gross_ex_post_kwh_savings * cdf$
Input	<i>WattsBase</i>	7	Illinois TRM V10 Vol. 3, p. 310. Unknown.
Input	<i>WattsEE</i>	0.33	Program tracking data.
Input	<i>Hours</i>	4380	Illinois TRM V10 Vol. 3, p. 311
Input	<i>WHFe</i>	Varies	Illinois TRM V10 Vol. 3, p. 311
Input	<i>IF</i>	Varies	Illinois TRM V10 Vol. 3, p. 312
Input	<i>cdf</i>	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		Varies	Illinois TRM V10.0 Vol. 3, p. 310
Measure Name: Showerhead - Kit			
Savings	ΔkWh		$(GPM_base * L_base - GPM_low * L_low) * Household * SPCD * 365.25 / SPH * EPG_electric$

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Savings	ΔkW		$per_unit_gross_ex_post_kwh_savings * cdf$
Input	GPM_base	2.35	Illinois TRM V10.0 Vol. 3, p. 233. Efficiency kits.
Input	L_base	7.8	Illinois TRM V10.0 Vol. 3, p. 234.
Input	GPM_low	1.5	Illinois TRM 10.0 Vol. 3, p. 233.
Input	L_low	7.8	Illinois TRM V10.0 Vol. 3, p. 234.
Input	$SPCD$	0.6	Illinois TRM V10 Vol. 3, p. 234.
Input	$Household$	Varies	Illinois TRM V10 Vol. 3, p. 234
Input	SPH	Varies	Illinois TRM V10 Vol. 3, p. 234
Input	$EPG_electric$	Varies	Illinois TRM V10 Vol. 3, p. 235.
Input	cdf	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		10	Illinois TRM V10.0 Vol. 3, p. 232.
Measure Name: Advanced Power Strip - Kit			
Savings	ΔkWh		$kWh_savings$
Savings	ΔkW		$per_unit_gross_ex_post_kwh_savings * cdf$
Input	$kWh_savings$	Varies	Illinois TRM V10 Vol. 3, p. 64
Input	cdf	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		7	Illinois TRM V10 Vol. 3, p. 63
Measure Name: Kitchen Faucet Aerator - Kit			
Savings	ΔkWh		$(GPMbase_as_used * L_base - GPMlow_as_used * L_low) * Household * 365.25 * DF / FPH * EPG_electric$
Savings	ΔkW		$per_unit_gross_ex_post_kwh_savings * cdf$
Input	$GPMbase_as_used$	Varies	Illinois TRM V10 Vol. 3, p. 223.
Input	L_base	Varies	Illinois TRM V10 Vol. 3, p. 224.
Input	$GPMlow_as_used$	Varies	Illinois TRM V10 Vol. 3, p. 223.
Input	L_low	Varies	Illinois TRM V10 Vol. 3, p. 224.
Input	$Household$	Varies	Illinois TRM V10 Vol. 3, p. 225.
Input	DF	Varies	Illinois TRM V10 Vol. 3, p. 225.
Input	FPH	Varies	Illinois TRM V10 Vol. 3, p. 225.
Input	$EPG_electric$	Varies	Illinois TRM V10 Vol. 3, p. 226.
Input	cdf	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		10	Illinois TRM V10 Vol. 3, p. 222.
Measure Name: Bathroom Faucet Aerator - Kit			
Savings	ΔkWh		$(GPMbase_as_used * L_base - GPMlow_as_used * L_low) * Household * 365.25 * DF / FPH * EPG_electric$
Savings	ΔkW		$per_unit_gross_ex_post_kwh_savings * cdf$
Input	$GPMbase_as_used$	Varies	Illinois TRM V10 Vol. 3, p. 223.
Input	L_base	Varies	Illinois TRM V10 Vol. 3, p. 224.
Input	$GPMlow_as_used$	Varies	Illinois TRM V10 Vol. 3, p. 223.
Input	L_low	Varies	Illinois TRM V10 Vol. 3, p. 224.
Input	$Household$	Varies	Illinois TRM V10 Vol. 3, p. 225.
Input	DF	Varies	Illinois TRM V10 Vol. 3, p. 225.
Input	FPH	Varies	Illinois TRM V10 Vol. 3, p. 225.

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Input	<i>EPG_electric</i>	Varies	Illinois TRM V10 Vol. 3, p. 226.
Input	<i>cdf</i>	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		10	Illinois TRM V10 Vol. 3, p. 222.
Measure Name: Advanced Power Strip			
Savings	ΔkWh		<i>kWh_savings</i>
Savings	ΔkW		<i>per_unit_gross_ex_post_kwh_savings * cdf</i>
Input	<i>kWh_savings</i>	Varies	Illinois TRM V10 Vol. 3, p. 64
Input	<i>cdf</i>	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		7	Illinois TRM V10 Vol. 3, p. 63
Measure Name: LED Night Light			
Savings	ΔkWh		$(WattsBase - WattsEE) * Hours / 1000 * (WHFe + IF)$
Savings	ΔkW		<i>per_unit_gross_ex_post_kwh_savings * cdf</i>
Input	<i>WattsBase</i>	7	Illinois TRM V10 Vol. 3, p. 310.
Input	<i>WattsEE</i>	0.33	Program tracking data.
Input	<i>Hours</i>	4380	Illinois TRM V10 Vol. 3, p. 311.
Input	<i>WHFe</i>	Varies	Illinois TRM V10 Vol. 3, p. 311.
Input	<i>IF</i>	Varies	Illinois TRM V10 Vol. 3, p. 312.
Input	<i>cdf</i>	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		Varies	Illinois TRM 10.0 Vol. 3, p. 310.
Measure Name: Direct Install LED			
Savings	ΔkWh		$(WattsBase - WattsEE) * Hours * (WHFe + IF) / 1000$
Savings	ΔkW		<i>per_unit_gross_ex_post_kwh_savings * cdf</i>
Input	<i>WattsBase</i>	Varies	Varies on lamp type: Illinois TRM V10 Vol. 3, p. 289, p. 272-274 , or p. 310.
Input	<i>WattsEE</i>	Varies	Program tracking data.
Input	<i>Hours</i>	Varies	Varies on lamp type: Illinois TRM V10 Vol. 3, p. 291, p.276 , or p. 311.
Input	<i>WHFe</i>	Varies	Illinois TRM V10 Vol. 3, p. 291.
Input	<i>IF</i>	Varies	Illinois TRM V10 Vol. 3, p. 293
Input	<i>cdf</i>	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		3	Indiana TRM 2023 Workbook, 5.5.6 and 5.5.9, Income Eligible.
Measure Name: Kitchen Faucet Aerator			
Savings	ΔkWh		$(GPMbase_as_used * L_base - GPMlow_as_used * L_low) * Household * 365.25 * DF / FPH * EPG_electric$
Savings	ΔkW		<i>per_unit_gross_ex_post_kwh_savings * cdf</i>
Input	<i>GPMbase_as_used</i>	Varies	Illinois TRM V10 Vol. 3, p. 223.
Input	<i>L_base</i>	Varies	Illinois TRM V10 Vol. 3, p. 224.
Input	<i>GPMlow_as_used</i>	Varies	Illinois TRM V10 Vol. 3, p. 223.
Input	<i>L_low</i>	Varies	Illinois TRM V10 Vol. 3, p. 224.
Input	<i>Household</i>	Varies	Illinois TRM V10 Vol. 3, p. 225.
Input	<i>DF</i>	Varies	Illinois TRM V10 Vol. 3, p. 225.
Input	<i>FPH</i>	Varies	Illinois TRM V10 Vol. 3, p. 225.
Input	<i>EPG_electric</i>	Varies	Illinois TRM V10 Vol. 3, p. 226.

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Input			0
Input	<i>cdf</i>	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		10	Illinois TRM V10 Vol. 3, p. 222.
Measure Name: Bathroom Faucet Aerator			
Savings	ΔkWh		$(GPM_{base\ as\ used} * L_{base} - GPM_{low\ as\ used} * L_{low}) * Household * 365.25 * DF / FPH * EPG_{electric}$
Savings	ΔkW		$per_unit_gross_ex_post_kwh_savings * cdf$
Input	<i>GPM_{base as used}</i>	Varies	Illinois TRM V10 Vol. 3, p. 223.
Input	<i>L_{base}</i>	Varies	Illinois TRM V10 Vol. 3, p. 224.
Input	<i>GPM_{low as used}</i>	Varies	Illinois TRM V10 Vol. 3, p. 223.
Input	<i>L_{low}</i>	Varies	Illinois TRM V10 Vol. 3, p. 224.
Input	<i>Household</i>	Varies	Illinois TRM V10 Vol. 3, p. 225.
Input	<i>DF</i>	Varies	Illinois TRM V10 Vol. 3, p. 225.
Input	<i>FPH</i>	Varies	Illinois TRM V10 Vol. 3, p. 225.
Input	<i>EPG_{electric}</i>	Varies	Illinois TRM V10 Vol. 3, p. 226.
Input	<i>cdf</i>	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		10	Illinois TRM V10 Vol. 3, p. 222.
Measure Name: Showerhead			
Savings	ΔkWh		$(GPM_{base} * L_{base} - GPM_{low} * L_{low}) * Household * SPCD * 365.25 / SPH * EPG_{electric}$
Savings	ΔkW		$per_unit_gross_ex_post_kwh_savings * cdf$
Input	<i>GPM_{base}</i>	Varies	Illinois TRM 10.0 Vol. 3, p. 233. Direct install.
Input	<i>L_{base}</i>	7.8	Illinois TRM 10.0 Vol. 3, p. 234.
Input	<i>GPM_{low}</i>	Varies	Illinois TRM 10.0 Vol. 3, p. 233.
Input	<i>L_{low}</i>	7.8	Illinois TRM 10.0 Vol. 3, p. 234.
Input	<i>SPCD</i>	0.6	Illinois TRM V10 Vol. 3, p. 234.
Input	<i>Household</i>	Varies	Illinois TRM V10 Vol. 3, p. 234
Input	<i>SPH</i>	Varies	Illinois TRM V10 Vol. 3, p. 234
Input	<i>EPG_{electric}</i>	Varies	Illinois TRM V10 Vol. 3, p. 235.
Input	<i>cdf</i>	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		10	Illinois TRM V10.0 Vol. 3, p. 232.
Measure Name: Refrigerator			
Savings - 1	ΔkWh Baseline 1		$(kWh_{exist} - kWh_{ee}) * 365.25$
Savings - 2	ΔkW Baseline 1		$per_unit_gross_ex_post_kwh_savings * cdf$
Savings - 2	ΔkWh (Baseline 2)		$(kWh_{base} - kWh_{ee}) * 365.25$
Savings - 2	ΔkW (Baseline 2)		$per_unit_gross_ex_post_kwh_savings_second_baseline * cdf$
Input	<i>kWh_{exist}</i>	Varies	PY2021 ADM review of pre-existing units.
Input	<i>kWh_{base}</i>	Varies	Illinois TRM V10.0 Vol. 3, p. 29
Input	<i>kWh_{ee}</i>	Varies	Energy Star database
Input	<i>cdf</i>	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL - 1		6	Illinois TRM V10.0 Vol. 3, p. 30

EUL - 2		11	Illinois TRM V10.0 Vol. 3, p. 30
Measure Name: Heat Pump Water Heater			
Savings	ΔkWh		$(1 / UEF_{base} - 1 / UEF_{new}) * 17.6 GPD * Household * 365.25 * 8.33 lbs / gallon * (T_{out} - T_{in}) / 3412 + kWh_{cooling} - kWh_{heating} + Dehumidification$
Savings	ΔkW		$per_unit_gross_ex_post_kwh_savings * cdf$
Input	UEF_{base}	Varies	Federal appliance standard.
Input	UEF_{new}	Varies	Tracking data. Characteristics of applicable equipment.
Input	$17.6 GPD$	17.6	Illinois TRM V10.0 Vol. 3, p. 217
Input	$Household$	Varies	Illinois TRM V10.0 Vol. 3, p. 217
Input	T_{out}	125	Illinois TRM V10.0 Vol. 3, p. 217
Input	T_{in}	50.7	Illinois TRM V10.0 Vol. 3, p. 217
Input	$kWh_{cooling}$	Varies	$(((((17.6 GPD * Household * 365.25 * 8.33 lbs / gallon * (T_{out} - T_{in}) * 1) / 3412 - ((1 / UEF_{new} * 17.6 GPD * Household * 365.25 * 8.33 lbs / gallon * (T_{out} - T_{in}) * 1) / 3412))) * LF * CoolLoadFactor) / (COP_{cool}) * LM))$
Input	$kWh_{heating}$	Varies	$(((((17.6 GPD * Household * 365.25 * 8.33 lbs / gallon * (T_{out} - T_{in}) * 1) / 3412 - ((1 / UEF_{new} * 17.6 GPD * Household * 365.25 * 8.33 lbs / gallon * (T_{out} - T_{in}) * 1) / 3412))) * LF * HeatLoadFactor) / (COP_{heat}))$
Input	$Dehumidification$	359	Illinois TRM V10.0 Vol. 3, p. 219. Dehumidifier in use.
Input	cdf	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		15	Illinois TRM V10.0 Vol. 3, p. 215
Measure Name: Wall Insulation			
Savings	ΔkWh		$((((1 / (R_{exist} + wall_assembly_r_value) - 1 / (R_{new} + wall_assembly_r_value)) * a_{wall} * (1 - framing_factor)) * 24 * CDD * DUA) / (1000 * \eta_{Cool})) * ADJ_{cool} * \%Cool + (((1 / (R_{exist} + wall_assembly_r_value) - 1 / (R_{new} + wall_assembly_r_value)) * a_{wall} * (1 - framing_factor)) * 24 * HDD) / (\eta_{Heat} * 3412)) * ADJ_{heat} * \%ElectricHeat$
Savings	ΔkW		$per_unit_gross_ex_post_kwh_savings * cdf$
Input	R_{exist}	Varies	Tracking data.
Input	R_{new}	Varies	Tracking data.
Input	$framing_factor$	0.25	Illinois TRM 10.0 Vol. 3, p. 353.
Input	CDD	Varies	Illinois TRM 10.0 Vol. 3, p. 353.
Input	DUA	0.75	Illinois TRM 10.0 Vol. 3, p. 354.
Input	a_{wall}	Varies	Area insulated in square feet.
Input	η_{Cool}	Varies	Illinois TRM 10.0 Vol. 3, p. 354.
Input	$\%Cool$	Varies	Equals 1 if cooling present; otherwise 0.
Input	ADJ_{cool}	0.8	Illinois TRM 10.0 Vol. 3, p. 354.
Input	HDD	Varies	Illinois TRM 10.0 Vol. 3, p. 355.
Input	η_{Heat}	Varies	Illinois TRM 10.0 Vol. 3, p. 355.
Input	$\%ElectricHeat$	Varies	Equals 1 if electric heating present; otherwise 0.

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Input	<i>ADJheat</i>	0.6	Illinois TRM 10.0 Vol. 3, p. 356.
Input	<i>wall_assembly_r_value</i>	5	Illinois TRM 10.0 Vol. 3, p. 353.
Input	<i>cdf</i>	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		20	Illinois TRM 10.0 Vol. 3, p. 352.
Measure Name: Air Sealing			
Savings	ΔkWh		$(CFM50_before - CFM50_after) / N_cool * 60 * 24 * CDD * DUA * 0.018 / (1000 * \eta_{Cool}) * Adj_airsealingcool * IE_net_correction + (CFM50_before - CFM50_after) / N_heat * 60 * 24 * HDD * 0.018 / (3412 * \eta_{Heat})$
Savings	ΔkW		<i>per_unit_gross_ex_post_kwh_savings * cdf</i>
Input	<i>CFM50_before</i>	Varies	Tracking data.
Input	<i>CFM50_after</i>	Varies	Tracking data.
Input	<i>CDD</i>	Varies	Illinois TRM V10.0 Vol. 3, p. 322. Indiana TRM Workbook V1 climate zone mapping.
Input	<i>HDD</i>	Varies	Illinois TRM V10.0 Vol. 3, p. 324. Indiana TRM Workbook V1 climate zone mapping.
Input	<i>N_cool</i>	Varies	Illinois TRM V10.0 Vol. 3, p. 321. Indiana TRM Workbook V1 climate zone mapping.
Input	<i>N_heat</i>	Varies	Illinois TRM V10.0 Vol. 3, p. 324. Indiana TRM Workbook V1 climate zone mapping.
Input	<i>DUA</i>	0.75	Illinois TRM V10.0 Vol. 3, p. 322.
Input	η_{Cool}	Varies	Illinois TRM 10.0 Vol. 3, p. 322.
Input	η_{Heat}	Varies	Illinois TRM 10.0 Vol. 3, p. 324.
Input	<i>Adj_airsealingcool</i>	1	Illinois TRM V10.0 Vol. 3, p. 323. No attic insulation.
Input	<i>IE_net correction</i>	1	Illinois TRM V10.0 Vol. 3, p. 323. No attic insulation.
Input	<i>cdf</i>	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		20	Illinois TRM V10.0 Vol. 3, p. 320
Measure Name: Ductless Heat Pump			
Savings - 1	ΔkWh Baseline 1		$((Capacity_heat / HSPF2_base) - (Capacity_heat / HSPF2_ee)) / 1000 * EFLH_heat + ((Capacity_cool_ee / SEER2_base) - (Capacity_cool_ee / SEER2_ee)) / 1000 * EFLH_cool + ((Heating_kwh_exist - ((Capacity_heat / HSPF2_base) / 1000 * EFLH_heat)) * ER_factor) + ((Capacity_cool_exist / SEER2_exist) - (Capacity_cool_ee / SEER2_base)) / 1000 * ER_factor * EFLH_cool$
Savings - 2	ΔkW Baseline 1		<i>per_unit_gross_ex_post_kwh_savings * cdf</i>
Savings - 2	ΔkWh (Baseline 2)		$((Capacity_heat / HSPF2_base) - (Capacity_heat / HSPF2_ee)) / 1000 * EFLH_heat + ((Capacity_cool_ee / SEER2_base) - (Capacity_cool_ee / SEER2_ee)) / 1000 * EFLH_cool$
Savings - 2	ΔkW (Baseline 2)		<i>per_unit_gross_ex_post_kwh_savings_second_baseline * cdf</i>
Input	<i>Capacity_cool_exist</i>	Varies	Assumed equivalent to new equipment.
Input	<i>Capacity_cool_ee</i>	Varies	Tracking data.
Input	<i>EFLH_cool</i>	Varies	Illinois TRM V10.0 Vol. 3, p. 157. Indiana TRM Workbook V1.
Input	<i>SEER2_exist</i>	Varies	Illinois TRM V10.0 Vol. 3, p.76.

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Input	<i>SEER2_base</i>	13.4	2023 Indiana TRM Workbook, '5.3.12 Ductless Heat Pumps' worksheet.
Input	<i>SEER2_ee</i>	Varies	AHRI. Characteristics of applicable equipment.
Input	<i>Capacity_heat</i>	Varies	Tracking data.
Input	<i>EFLH_heat</i>	Varies	Illinois TRM V10.0 Vol. 3, p. 158. Indiana TRM Workbook V1.
Input	<i>HSPF2_base</i>	Varies	Illinois TRM V10.0 Vol. 3, p. 159. Indiana TRM Workbook V1.
Input	<i>HSPF2_ee</i>	Varies	AHRI. Characteristics of applicable equipment.
Input	<i>Heating_kwh_exist</i>	Varies	Pre-project annual electric energy usage. Based on econometric analysis of interval meter data and capped at estimate of electric resistance baseline usage.
Input	<i>ER_factor</i>	1	Assume early replacement with income-qualified program.
Input	<i>cdf</i>	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL - 1		6	Illinois TRM V10.0 Vol. 3, p.72
EUL - 2		12	Illinois TRM V10.0 Vol. 3, p.72
Measure Name: Pipe Insulation			
Savings	ΔkWh		$((1 / R_{Exist}) - (1 / R_{New})) * ((L_{effective} * C_{inside} * \Delta T * 8766) / (n_{DHW} * 3412))$
Savings	ΔkW		$per_unit_gross_ex_post_kwh_savings * cdf$
Input	<i>R_Exist</i>	0.521	Illinois TRM V10.0 Vol. 3, p. 205. 0.75" copper pipe.
Input	<i>R_New</i>	4	Illinois TRM 10.0 Vol. 3, p. 205
Input	<i>L_effective</i>	1	Quantity variable accounts for length in feet for applicable project.
Input	<i>C_inside</i>	0.2055	Illinois TRM V10.0 Vol. 3, p. 205. 0.75" pipe.
Input	<i>delta_T</i>	60	Illinois TRM 10.0 Vol. 3, p. 205
Input	<i>n_DHW</i>	Varies	Illinois TRM 10.0 Vol. 3, p. 205
Input		0	0
Input	<i>cdf</i>	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		15	Illinois TRM 10.0 Vol. 3, p. 204
Measure Name: Ceiling Insulation			
Savings	ΔkWh		$((((1 / (R_{exist} + roof_assembly_r_value)) - 1 / (R_{new} + roof_assembly_r_value)) * a_attic * (1 - framing_factor)) * 24 * CDD * DUA) / (1000 * \eta_{Cool})) * ADJ_{cool} * \%Cool + (((1 / (R_{exist} + roof_assembly_r_value)) - 1 / (R_{new} + roof_assembly_r_value)) * a_attic * (1 - framing_factor)) * 24 * HDD) / (\eta_{Heat} * 3412)) * ADJ_{heat} * \%ElectricHeat$
Savings	ΔkW		$per_unit_gross_ex_post_kwh_savings * cdf$
Input	<i>Rexist</i>	Varies	Tracking data.
Input	<i>Rnew</i>	Varies	Tracking data.
Input	<i>framing_factor</i>	0.07	Illinois TRM 10.0 Vol. 3, p. 362.
Input	<i>CDD</i>	Varies	Illinois TRM 10.0 Vol. 3, p. 362.
Input	<i>DUA</i>	0.75	Illinois TRM 10.0 Vol. 3, p. 363.
Input	<i>a_attic</i>	Varies	Area insulated in square feet.
Input	η_{Cool}	Varies	Illinois TRM 10.0 Vol. 3, p. 363.
Input	$\%Cool$	Varies	Equals 1 if cooling present; otherwise 0.
Input	<i>ADJcool</i>	1.21	Illinois TRM 10.0 Vol. 3, p. 363.

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Input	<i>HDD</i>	Varies	Illinois TRM 10.0 Vol. 3, p. 364.
Input	η_{Heat}	Varies	Illinois TRM 10.0 Vol. 3, p. 364.
Input	<i>%ElectricHeat</i>	Varies	Equals 1 if electric heating present; otherwise 0.
Input	<i>ADJheat</i>	0.6	Illinois TRM 10.0 Vol. 3, p. 365.
Input	<i>roof_assembly_r_value</i>	3	Illinois TRM 10.0 Vol. 3, p. 362.
Input	<i>cdf</i>	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		20	Illinois TRM 10.0 Vol. 3, p. 361.
Measure Name: Window Insulation Kit			
Savings	ΔkWh		$((kWh_{per_sf_elec_resistance} * \%elec_resistance + kWh_{per_sf_heat_pump} * \%heat_pump) * ADJR_{xAirSealing}) + ((\Delta CFM50 / N_{cool} * 60 * 24 * CDD * DUA * 0.018) / (1000 * \eta_{Cool}) * LM * \%Cool)) * Window_{sf}$
Savings	ΔkW		$per_unit_gross_ex_post_kwh_savings * cdf$
Input	<i>kWhper_sf_elec_resistance</i>	3.9	Illinois TRM V10 Vol. 3, p. 327.
Input	<i>kWhper_sf_heat_pump</i>	2	Illinois TRM V10 Vol. 3, p. 327.
Input	<i>%elec_resistance</i>	0.24119598	2020 RECS Midwest Census Region data.
Input	<i>%heat_pump</i>	0.08229724	2020 RECS Midwest Census Region data.
Input	$\Delta CFM50$	0.639	Illinois TRM V10 Vol. 3, p. 329.
Input	<i>N_cool</i>	39.5	Illinois TRM V10 Vol. 3, p. 321.
Input	<i>CDD</i>	820	Illinois TRM V10 Vol. 3, p. 322.
Input	<i>DUA</i>	0.75	Illinois TRM V10 Vol. 3, p. 322.
Input	η_{Cool}	10.5	Illinois TRM V10 Vol. 3, p. 322.
Input	<i>LM</i>	3.3	Illinois TRM V10 Vol. 3, p. 323.
Input	<i>ADJR_{xAirSealing}</i>	0.8	Illinois TRM V10 Vol. 3, p. 328.
Input	<i>%Cool</i>	0.52	Indiana TRM 2023 Workbook, 5.6.1.
Input	<i>Window_sf</i>	Varies	Product characteristics.
Input	<i>cdf</i>	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		1	Illinois TRM 10.0 Vol. 3, p. 320.
Measure Name: Door Sweep			
Savings	ΔkWh		$((kWh_{per_sf_elec_resistance} * \%elec_resistance + kWh_{per_sf_heat_pump} * \%heat_pump) * ADJR_{xAirSealing}) + ((\Delta CFM50 / N_{cool} * 60 * 24 * CDD * DUA * 0.018) / (1000 * \eta_{Cool}) * LM * \%Cool)$
Savings	ΔkW		$per_unit_gross_ex_post_kwh_savings * cdf$
Input	<i>kWhper_sf_elec_resistance</i>	195.3	Illinois TRM V10 Vol. 3, p. 327.
Input	<i>kWhper_sf_heat_pump</i>	97.6	Illinois TRM V10 Vol. 3, p. 327.
Input	<i>%elec_resistance</i>	0.24119598	2020 RECS Midwest Census Region data.
Input	<i>%heat_pump</i>	0.08229724	2020 RECS Midwest Census Region data.
Input	$\Delta CFM50$	25.5	Illinois TRM V10 Vol. 3, p. 329.
Input	<i>N_cool</i>	39.5	Illinois TRM V10 Vol. 3, p. 321.
Input	<i>CDD</i>	820	Illinois TRM V10 Vol. 3, p. 322.

Input	<i>DUA</i>	0.75	Illinois TRM V10 Vol. 3, p. 322.
Input	<i>ηCool</i>	10.5	Illinois TRM V10 Vol. 3, p. 322.
Input	<i>LM</i>	3.3	Illinois TRM V10 Vol. 3, p. 323.
Input	<i>ADJRxAirSealing</i>	0.8	Illinois TRM V10 Vol. 3, p. 328.
Input	<i>%Cool</i>	0.52	Indiana TRM 2023 Workbook, 5.6.1.
Input	<i>cdf</i>	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		1	Illinois TRM 10.0 Vol. 3, p. 320.
Measure Name: Weatherstripping			
Savings	<i>ΔkWh</i>		$((kWhper_sf_elec_resistance * \%elec_resistance + kWhper_sf_heat_pump * \%heat_pump) * ADJRxAirSealing) + ((\Delta CFM50 / N_cool * 60 * 24 * CDD * DUA * 0.018) / (1000 * \eta Cool) * LM * \%Cool)) * LinearFeet$
Savings	<i>ΔkW</i>		$per_unit_gross_ex_post_kwh_savings * cdf$
Input	<i>kWhper_sf_elec_resistance</i>	13	Illinois TRM V10 Vol. 3, p. 327.
Input	<i>kWhper_sf_heat_pump</i>	6.5	Illinois TRM V10 Vol. 3, p. 327.
Input	<i>%elec_resistance</i>	0.24119598	2020 RECS Midwest Census Region data.
Input	<i>%heat_pump</i>	0.08229724	2020 RECS Midwest Census Region data.
Input	<i>ΔCFM50</i>	0.639	Illinois TRM V10 Vol. 3, p. 329.
Input	<i>N_cool</i>	39.5	Illinois TRM V10 Vol. 3, p. 321.
Input	<i>CDD</i>	820	Illinois TRM V10 Vol. 3, p. 322.
Input	<i>DUA</i>	0.75	Illinois TRM V10 Vol. 3, p. 322.
Input	<i>ηCool</i>	10.5	Illinois TRM V10 Vol. 3, p. 322.
Input	<i>LM</i>	3.3	Illinois TRM V10 Vol. 3, p. 323.
Input	<i>ADJRxAirSealing</i>	0.8	Illinois TRM V10 Vol. 3, p. 328.
Input	<i>%Cool</i>	0.52	Indiana TRM 2023 Workbook, 5.6.1.
Input	<i>LinearFeet</i>	17	Product characteristics.
Input	<i>cdf</i>	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		1	Illinois TRM 10.0 Vol. 3, p. 320.

4.3.1.3. Verification and In-Service Rates

Table 4-4 shows the verification rates for program measures installed through the income-qualified program for in-home participants. The results are based on data collected during the PY2023 and PY2024 evaluations. For donated items, ADM referenced the Illinois TRM 12.0

For the kit items, some respondents reported that they had not installed and were not planning to install the items in the next six months.

Table 4-4 Summary of Measure In-Service Rates

Measure	Number of Measure Responses	Verification/ In Service Rate	Stratum/Source	Stratum Sample Size
9W LED - Kit	33	78%	Average LED -Kit (2023 and 2024 Survey Results) Value	33
Advanced Power Strip - Kit	38	82%	Average Advanced Power Strip - Kit (2023 and 2024 Survey Results) Value	38
Bathroom Faucet Aerator - Kit	13	77%	Average Bathroom Faucet Aerator - Kit (2023 and 2024 Survey Results) Value	13
Kitchen Faucet Aerator - Kit	12	75%	Average Kitchen Faucet Aerator - Kit (2023 and 2024 Survey Results) Value	12
LED Nightlight - Kit	37	35%	Average LED Nightlight - Kit (2023 and 2024 Survey Results) Value	37
Showerhead - Kit	13	92%	Average Showerhead - Kit (2023 and 2024 Survey Results) Value	13
Advanced Power Strip	11	65%	Average DI Measures (2023 and 2024 Survey Results) Value	51
Bathroom Faucet Aerator	9	65%	Average DI Measures (2023 and 2024 Survey Results) Value	51
Direct Install LED	6	65%	Average DI Measures (2023 and 2024 Survey Results) Value	51
Kitchen Faucet Aerator	8	65%	Average DI Measures (2023 and 2024 Survey Results) Value	51
LED Night Light	11	65%	Average DI Measures (2023 and 2024 Survey Results) Value	51
Refrigerator	4	100%	Average Major Measures (2023 and 2024 Survey Results) Value	4
Showerhead	6	65%	Average DI Measures (2023 and 2024 Survey Results) Value	51
Heat Pump Water Heater	0	100%	Average Major Measures (2023 and 2024 Survey Results) Value	4
Package Terminal Heat Pump	0	100%	Average Major Measures (2023 and 2024 Survey Results) Value	4
Air Sealing	0	100%	Average Major Measures (2023 and 2024 Survey Results) Value	4
Ductless Heat Pump	0	100%	Average Major Measures (2023 and 2024 Survey Results) Value	4
Pipe Insulation	0	65%	Average DI Measures (2023 and 2024 Survey Results) Value	51
Ceiling Insulation	0	100%	Average Major Measures (2023 and 2024 Survey Results) Value	4
Air Source Heat Pump	0	100%	Average Major Measures (2023 and 2024 Survey Results) Value	4
Wall Insulation	0	100%	Average Major Measures (2023 and 2024 Survey Results) Value	4
Window Insulation Kit	0	57%	IL TRM v12.0, Vol 3, p. 384	0
Door Sweep	0	57%	IL TRM v12.0, Vol 3, p. 384	0
Weatherstripping	0	63%	IL TRM v12.0, Vol 3, p. 384	0

4.3.2. Results of Ex Post Gross Savings Estimation

Table 4-5 summarizes the gross kWh savings of the Income Qualified Weatherproofing Program by measure. The ex post annual energy savings for the program were 2,176,101 kWh with a realization rate of 119%.

Table 4-5 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>
LED Night Light	674	5,662	5,662	3,706	13,626	241%
Direct Install LED	2,494	84,989	84,989	55,629	80,391	95%
Kitchen Faucet Aerator	67	9,053	9,053	5,926	9,712	107%
Bathroom Faucet Aerator	91	2,154	2,154	1,410	1,532	71%
Showerhead	86	21,095	21,095	13,808	14,371	68%
Refrigerator	25	1,275	1,275	1,275	1,127	88%
Heat Pump Water Heater	2	3,080	3,080	3,080	5,539	180%
Advanced Power Strip	236	20,532	20,532	13,439	15,911	77%
Pipe Insulation	563	18,466	18,466	12,087	19,885	108%
Ceiling Insulation	12	31,667	31,667	31,667	16,523	52%
Wall Insulation	1	3,280	3,280	3,280	2,723	83%
Air Sealing	6	390	390	390	3,371	864%
Ductless Heat Pump	8	113,805	113,805	113,805	60,548	53%
9W LED - Kit	4,760	113,697	113,697	89,347	113,363	100%
LED Nightlight - Kit	1,190	8,781	8,781	3,107	10,091	115%
Showerhead - Kit	740	148,307	148,307	137,022	184,629	124%
Advanced Power Strip - Kit	595	29,195	29,195	23,817	49,996	171%
Kitchen Faucet Aerator - Kit	370	44,328	44,328	33,366	60,616	137%
Bathroom Faucet Aerator - Kit	740	13,522	13,522	10,435	16,308	121%
Window Insulation Kit	18,000	500,996	500,996	285,568	515,612	103%
Door Sweep	18,000	490,736	490,736	279,719	469,826	96%
Weatherstripping	16,000	165,312	165,312	104,147	510,401	309%
Total		1,830,323	1,830,323	1,226,030	2,176,101	119%

Energy savings associated with virtual assessment efficiency kits are presented by kit type in Table 4-6.

Table 4-6 Kit-Level Annual Gross kWh Savings

<i>Kit Type</i>	<i>Number of Kits</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>
Electric Water Heater Kit	370	299,330	299,330	252,128	355,450	119%
Gas Water Heater Kit	225	58,500	58,500	44,966	79,554	136%
Total	595	357,830	357,830	297,095	435,004	122%

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

- Water heating measures (Kitchen and Bathroom Faucet Aerators and Showerheads (137% and 121%) – The change in savings reflects updates to baseline water flow rate assumptions in the Indiana TRM.
- LED Night Lights (241%) – The significant increase in realization rate is driven by updated baseline wattage assumptions in the Indiana TRM, resulting in higher estimated per-unit savings.
- Heat pump water heater (180%). The ex ante savings estimate used a value of 1,540kWh saved per unit. The ex post analysis based on the efficiency of the installed units found a savings of 2,769 kWh for each of the two units installed.
- Air sealing (864%). The ex post analysis used the Indiana TRM methodology that references the Illinois TRM V10.0, with weather zones mapped to Indiana reference cities.
- Advanced power strip – kit (171%). The ex ante savings used a smaller deemed savings value of 48.5 kWh per unit vs. the value of 84.0 kWh per unit found in the ex post analysis.
- Kitchen faucet aerator – kit. (137%). The ex ante savings used a smaller deemed savings value of 119.8 kWh per unit vs. the value of 89.5 kWh per unit found in the ex post analysis.

Table 4-7 summarizes the gross peak demand reduction of the Income Qualified Weatherproofing Program. The gross peak demand reduction for the program was 237.62 kW, with a realization rate of 81%.

Table 4-7 Measure-Level Annual Gross kW Savings

<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>
LED Night Light	674	-	-	-	1.49	

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<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>
Direct Install LED	2,494	7.48	7.48	4.90	8.78	117%
Kitchen Faucet Aerator	67	0.43	0.43	0.28	1.06	247%
Bathroom Faucet Aerator	91	0.23	0.23	0.15	0.17	74%
Showerhead	86	0.86	0.86	0.56	1.57	182%
Refrigerator	25	0.14	0.14	0.14	0.12	86%
Heat Pump Water Heater	2	0.42	0.42	0.42	0.60	144%
Advanced Power Strip	236	2.26	2.26	1.48	1.74	77%
Pipe Insulation	563	15.00	15.00	9.82	2.17	14%
Ceiling Insulation	12	0.14	0.14	0.14	1.80	1289%
Wall Insulation	1	0.01	0.01	0.01	0.30	2499%
Air Sealing	6	0.09	0.09	0.09	0.37	409%
Ductless Heat Pump	8	2.38	2.38	2.38	6.61	278%
9W LED - Kit	4,760	9.85	9.85	7.73	12.38	126%
LED Nightlight - Kit	1,190	-	-	-	1.10	
Showerhead - Kit	740	5.97	5.97	5.52	20.16	338%
Advanced Power Strip - Kit	595	11.88	11.88	9.69	5.46	46%
Kitchen Faucet Aerator - Kit	370	1.67	1.67	1.25	6.62	397%
Bathroom Faucet Aerator - Kit	740	1.03	1.03	0.80	1.78	172%
Window Insulation Kit	18,000	216.00	216.00	123.12	56.30	26%
Door Sweep	18,000	9.90	9.90	5.64	51.30	518%
Weatherstripping	16,000	8.80	8.80	5.54	55.73	633%
Total		294.55	294.55	179.68	237.62	81%

Table 4-8 summarizes the kW savings for the kits provided to virtual audit participants.

Table 4-8 Kit-Level Annual Gross kW Savings

<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>
Electric Water Heater Kit	370	25.90	25.90	21.38	38.81	150%
Gas Water Heater Kit	225	4.50	4.50	3.61	8.69	193%
Total	595	30.40	30.40	24.99	47.50	156%

4.3.3. Estimation of Ex Post Net Savings

4.3.3.1. 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.² An NTG ratio of 1.0 was also applied to the donated measures.

4.3.3.2. Results of Ex Post Net Savings Estimation

Table 4-9 summarizes the ex post annual net kWh and kW savings of the Residential Income Qualified Weatherproofing Program. The annual net savings totaled 2,176,101 kWh and 237.62 kW.

Table 4-9 Program-Level Annual Net kWh and kW Savings

<i>Category</i>	<i>kWh</i>	<i>kW</i>
Ex Ante Gross Savings	1,830,323	294.55
Gross Audited Savings	1,830,323	294.55
Gross Verified Savings	1,226,030	179.68
Ex Post Gross Savings	2,176,101	237.62
Gross Realization Rate	119%	81%
Ex Post Free Ridership	0	-
Ex Post Non-Participant Spillover	0	-
Ex Post Participant Spillover	0	-
Ex Post Net Savings	2,176,101	237.62
Net-to-Gross Ratio	100%	100%
Ex Post Net Lifetime Savings	7,514,409	NA

4.4. 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 surveys of program participants.

² The Uniform Methods Project: Methods for Determining Energy Efficiency Savings for Specific Measures, Chapter 21, p.45 <https://www.nrel.gov/docs/fy17osti/68578.pdf>

4.4.1. 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.

4.4.1.1. Summary of Program Participation

Table 4-10 summarizes the distribution of savings by program component. As shown, 89% of ex post kWh savings came from efficiency kits and donated measures, while in-home direct install and major measures accounted for a smaller share of savings.

In terms of contribution to the program savings goal, in-home direct install measures made up 30% of the goal, and major measures accounted for 17%.

This distribution differs from the 2024 gross savings projections in the program planning document, which anticipated the following savings contributions:³

- 26% from refrigerators.
- 26% from air sealing.
- 7% from duct sealing.
- 6% from air source heat pumps.
- 5% from heat pump water heaters.
- 4% from attic insulation.

While the program achieved significant energy savings, the distribution of savings suggests a greater reliance on efficiency kits and donated measures than initially projected. Weatherization and equipment replacement measures, such as air sealing, duct sealing, and heat pump installations, contributed a smaller share of savings than anticipated.

Expanding participation in these measures could help the program capture additional long-term savings and enhance comprehensiveness, aligning more closely with the original design.

³ Source: DSM Plan EE Exhibits Work Paper.

Table 4-10 Summary of Ex Post Savings by Program Component

<i>Program Component</i>	<i>Share of Ex Post Energy Savings</i>	<i>Ex Post Energy Savings as Share of Program Goal</i>
Efficiency Kit	20%	84%
Donated Measure	69%	289%
In-Home Direct Install	7%	30%
Major Measures	4%	17%

Table 4-11 and Table 4-12 summarize participation in the virtual assessment and in-home assessment components of the program.

Table 4-11 Summary of Virtual Assessment Participation

<i>Kit</i>	<i>Percent of Virtual Audit Participants</i>
Electric	62%
Gas	38%

Table 4-12 Summary of In-Home Assessment Ex Ante Savings

<i>Housing Type</i>	<i>Major Measure</i>	<i>Direct Install Measure</i>	<i>Number of Customers</i>	<i>Average Ex Post kWh Savings</i>
Multi-Family	No	Yes	21	752
Multi-Family	Yes	Yes	1	1,337
Single Family	No	Yes	129	1,043
Single Family	Yes	No	33	2,613
Single Family	Yes	Yes	4	1,823

4.4.1.2. Program Design and Operations

ADM interviewed the I&M energy efficiency program coordinator and the SEEL program manager to gain insight into the IQW program operations and design.

4.4.1.2.1. 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. For example, the program has developed a collaborative relationship with Bright Point, a community action agency. Bright Point now directly works with the program to address weatherization needs for Indiana Michigan Power customers. The program has created a process where Bright Point can fill out a form with the necessary information to determine funding eligibility based on kWh savings and project costs.

4.4.1.2.2. Roles and Responsibilities

The I&M program coordinator manages the overall program, including oversight of the vendor responsible for implementing the weatherization component. There have been no significant changes in responsibilities since last year.

SEEL continues to implement the weatherization program. Although there have been no changes in SEEL's roles, SEEL increased the project staffing. The SEEL program manager, who assumed the role in 2023, is responsible for overseeing the day-to-day operations of the program. Their key duties include recruiting and managing contractors, ensuring quality assurance, and supporting I&M in marketing the program through various channels. The manager also plays a role in maintaining program integrity and operational efficiency.

4.4.1.2.3. Marketing and Outreach

SEEL employs a strategy that includes collaboration with I&M's marketing efforts. Alongside I&M's marketing emails, SEEL's outreach teams and educators visit food banks, where they set up booths and distribute free kits to I&M customers. These interactions allow them to collect customer

information, assess heating systems, and facilitate further engagement through in-person visits or online audits.

4.4.1.2.4. Participation Process

The participation process remains straightforward. Customers engage with the program through initial contact at food banks or via marketing channels. Follow-up assessments and audits are arranged based on the initial interaction.

4.4.1.2.5. Success Stories and Partnerships

The program's success includes collaboration with community organizations such as food banks. These partnerships have been utilized to reach underserved populations, expanding the program's impact.

There are no health and safety funds available in Indiana. To address this, SEEL has collaborated more closely with Brightpoint, the CAA in Fort Wayne that serves much of northeast Indiana. Brightpoint can undertake additional work that SEEL cannot because of funding restrictions. This collaboration allows SEEL to handle the tasks within their funding limits, while Brightpoint covers the rest. For example, SEEL can fund heat pumps up to the \$4,000 cap for single-family units or the \$3,000 cap for multifamily units, and Brightpoint can cover costs beyond that. SEEL's enhanced outreach to local agencies and their partnership with Brightpoint has reduced deferral rates by addressing more comprehensive home needs.

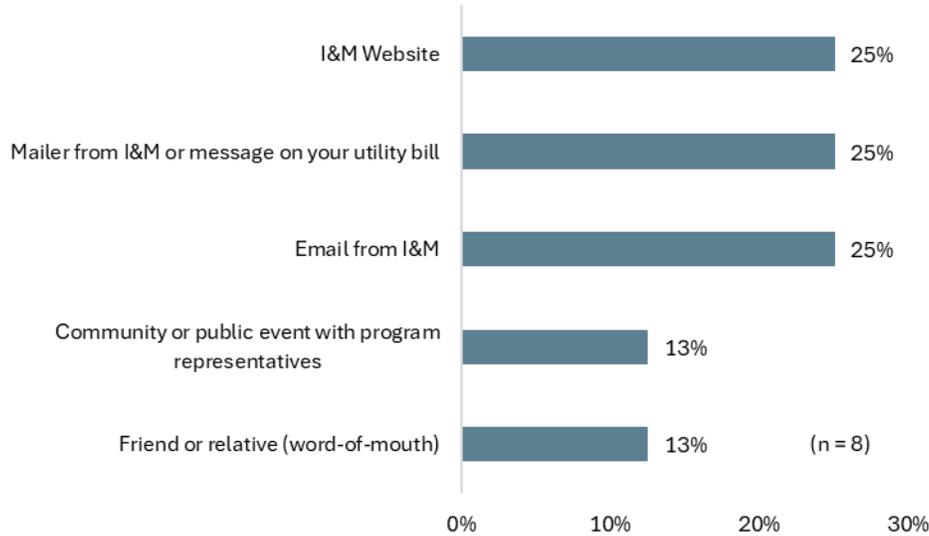
4.4.1.3. In-Home Participant Survey Results

ADM administered a survey to participants who received in-home services; however, we did not summarize the responses because of a low response count (n = 2).

4.4.1.4. Virtual Audit Participant Survey Results

The program website, mailers, and email communications from I&M drove initial program awareness. Seventy-five percent of respondents learned of the program through these sources, while the remaining survey respondents found out via a community event or word of mouth.

Figure 4-1 Initial Source of Program Awareness



Nearly all participants thought that it was easy to sign up for the virtual audit. Six respondents signed up for the program by telephone, while three respondents chose to sign up online. All respondents reported that it was very or somewhat easy to sign up.

Table 4-13 Ease of Signing up for Virtual Audit

How easy or difficult was it to sign up for the program?	Number of Respondents (n = 9)
Very easy	78%
Somewhat easy	22%
Somewhat difficult	0%
Very difficult	0%

A majority (89%) of respondents reported participating in a telephone discussion about their home energy use with a program representative. Most discussions lasted 15 to 30 minutes (75%), with 13% lasting 15 minutes or less, and 13% unsure of the duration. All respondents (100%) stated that the representative provided energy-saving tips. Recalled tips included using weather strips, replacing light bulbs, covering windows, flushing the hot water heater, and adjusting the thermostat.

Table 4-14 Length of Virtual Audit

How long did the virtual audit take?	Number of Respondents (n = 8)
15 minutes or less	13%
15 to 30 minutes	75%

<i>How long did the virtual audit take?</i>	<i>Number of Respondents (n = 8)</i>
30 to 45 minutes	0%
45 to 60 minutes	0%
Unsure	13%

Half of the respondents (50%) found the telephone discussion very useful for understanding energy-saving methods, while the remaining half rated it moderately useful, with 25% giving a rating of 3 and another 25% rating it as 4. Those who felt the discussion was not very useful mentioned that they were already implementing many of the suggested tips or that some recommendations were unaffordable for them.

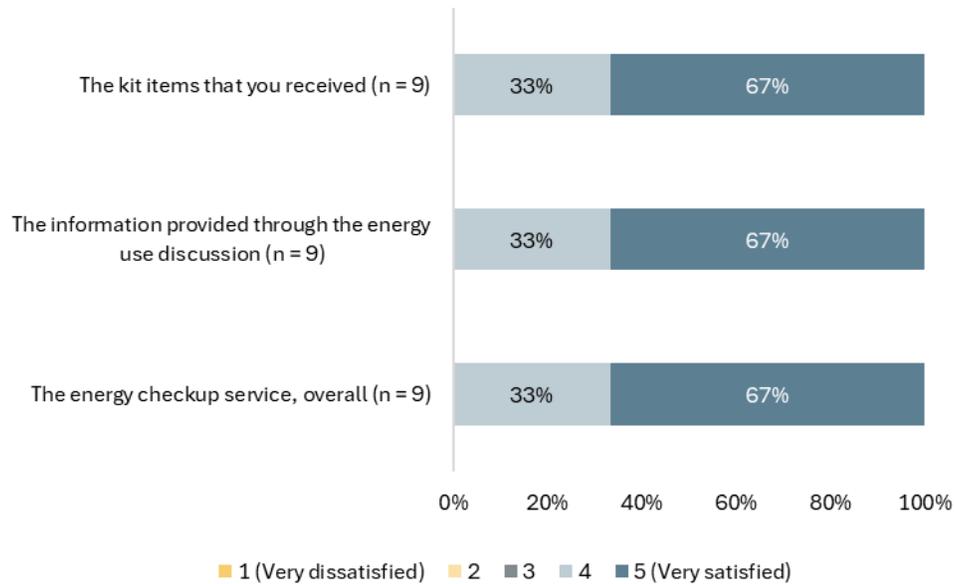
Table 4-15 Usefulness of Virtual Audit to help Understand Ways to Save Energy

<i>How long did the virtual audit take?</i>	<i>Number of Respondents (n = 8)</i>
5 (Very useful)	50%
4	25%
3	25%
2	0%
1 (Not at all useful)	0%

Respondents expressed high satisfaction with the energy checkup service, the energy use discussion, and the kit items received. Across all three aspects, 67% rated their satisfaction as very satisfied, while 33% rated it as satisfied, with no respondents indicating dissatisfaction. See Figure 4-2 for more details. Additionally, 89% of survey respondents were very or somewhat satisfied with I&M as their electricity service provider.

More than half of respondents (63%) identified as promoters of the virtual audit component, while 38% were considered passive. This resulted in a Net Promoter Score of 63%.

Figure 4-2 Satisfaction with Virtual Audit



Most respondents (92%) owned their residences, with 83% living in single-family detached homes. Homes were primarily built between 1950 and 1989, and natural gas was the predominant heating fuel (92%) and water heating fuel (73%). Household sizes varied, with 58% having two residents and 33% living alone. Bathroom faucets ranged from one to four, with 46% having one, and 82% of homes had one shower.

4.5. Findings and Recommendations

Donated measures accounted for the majority of ex post energy savings. The donated weatherstripping, window kits, and door sweeps accounted for 68.7% of the program ex post savings. The efficiency kits provided to participants accounted for another 19.9% of energy savings, and the remaining amount came from in-home direct install and major measures.

While the program achieved significant savings, the heavy reliance on efficiency kits and donated measures suggests it is not as comprehensive as originally intended. Key weatherization and equipment replacement measures, such as air sealing, duct sealing, and heat pump installations, contributed a much smaller share of savings than the program planned for. This indicates that the program may not be fully addressing deeper energy efficiency opportunities that provide long-term savings. Expanding participation in these measures could enhance program comprehensiveness and better align with the original design.

A potential factor contributing to this outcome is the condition of participating homes, which staff have reported in previous evaluations as a significant barrier to deeper energy efficiency upgrades because these homes need extensive structural improvements before making efficiency improvements is reasonable.

- **Recommendation 1. Focus on delivering more significant measures to participants to improve the comprehensiveness of services provided and achieve deeper savings.**
- **Recommendation 2. We recommend expanding the program data tracked and provided to the Evaluator to include information on why participants receive an efficiency kit rather than more comprehensive services.** Relevant factors could include non-electric heating or significant structural issues. This additional data would offer greater insight into how the program operates and serves income-qualified customers.

SEEL conducts outreach in collaboration with I&M’s marketing efforts and through direct engagement at food banks. The participation process includes follow-ups to maintain engagement. Partnerships with community agencies provide additional funding beyond SEEL’s caps, which can impact deferral rates. Data management processes have remained consistent.

The virtual audit program provided energy-saving guidance, though financial constraints limited some recommendations. The website, mailers, and emails were the main sources of awareness for 75% of respondents. Most found the virtual audit sign-up easy, with six using the phone to sign up and three using the online application. Nearly all (89%) engaged in a 15 to 30-minute phone discussion about home energy use and received tips like weather stripping, light bulb replacement, and thermostat adjustments. While half found the discussion very useful, others were already implementing tips or found some financially unfeasible.

The virtual audit component and energy checkup service were well received, with high satisfaction and strong customer advocacy. Respondents expressed high satisfaction with the energy checkup service, the energy use discussion, and the kit items received, with 67% very satisfied and 33% satisfied. Additionally, 89% of respondents reported being very or somewhat satisfied with I&M as their electricity service provider. The virtual audit component received a Net Promoter Score of 63%.

5. Home Energy Products ENERGY STAR Appliances

This chapter presents the results of both the impact and process evaluations of the 2024 Home Energy Products ENERGY STAR® Appliances Program that Indiana Michigan Power (I&M) offered to its residential customers during the period of January 2024 through December 2024.

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.
- Provide recommendations for program improvement as appropriate.

5.1. Program Description

The ENERGY STAR® Appliances Program provides midstream incentives through the ENERGY STAR® Retail Products Platform. The ENERGY STAR® Retail Products Platform is a midstream initiative that partners with several utilities and other organizations to provide incentives for efficient products with major nationwide retailers. The goal of the initiative is to increase the market penetration of ENERGY STAR® certified appliances. I&M provides incentives for air purifiers, clothes washers dryers, freezers, refrigerators, and clothes washers.

5.2. Data Collection

Data used to support the impact evaluation of the program will include:

- Program tracking data from the primary tracking database (the retail product platform historical and program sales data); and
- Program summary data from the I&M DSM EE Program Scorecard.

Analysis was performed on a census of program records.

5.3. Estimation of Ex Post Gross Savings

5.3.1. Methodology for Estimating Ex Post Gross Energy Savings

5.3.1.1. *Review of Documentation*

ADM reviewed the program tracking data and sales data from the ENERGY STAR® Retail Products Platform to ensure that the data provides sufficient information to calculate energy and demand impacts. The data from the system was reviewed for duplicate entries.

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

Table 5-1 presents information on savings calculation formulas, savings calculation inputs, incremental cost, and effective useful life values and data sources applicable to the ENERGY STAR Retail Products Platform measures.

Table 5-1 ENERGY STAR Retail Products Platform Program Calculation Input Information

<i>Variable Type</i>	<i>Variable Name</i>	<i>Variable Value</i>	<i>Variable Value Source</i>
Measure Name: Electric Dryer			
Savings	<i>ΔkWh</i>		$(Load / CEF_{base} - Load / CEF_{eff}) * N_{cycles} * \%Electric$
Savings	<i>ΔkW</i>		$per_unit_gross_ex_post_kwh_savings * cdf$
Input	<i>Load</i>	Varies	ENERGY STAR database for applicable product ID.
Input	<i>CEF_{base}</i>	Varies	Illinois TRM V10.0 Vol. 3, p. 48.
Input	<i>CEF_{eff}</i>	Varies	ENERGY STAR database for applicable product ID.
Input	<i>Ncycles</i>	283	Illinois TRM V10.0 Vol. 3, p. 48.
Input	<i>%Electric</i>	1	Illinois TRM V10.0 Vol. 3, p. 48.
Input	<i>cdf</i>	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		16	Illinois TRM V10.0 Vol. 3, p. 47.
Inc Cost		Varies	Illinois TRM V10.0 Vol. 3, p. 47.
Measure Name: Freezer			
Savings	<i>ΔkWh</i>		$kWh_{base} - kW_{hee}$
Savings	<i>ΔkW</i>		$per_unit_gross_ex_post_kwh_savings * cdf$
Input	<i>kWh_{base}</i>	Varies	Illinois TRM V10.0 Vol. 3, p. 26-27.
Input	<i>kW_{hee}</i>	Varies	Illinois TRM V10.0 Vol. 3, p. 26-27.
Input	<i>cdf</i>	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		22	Illinois TRM V10.0 Vol. 3, p. 26.
Inc Cost		35	Illinois TRM V10.0 Vol. 3, p. 26.
Measure Name: Refrigerator			
Savings	<i>ΔkWh</i>		$UEC_{base} - UEC_{ee}$
Savings	<i>ΔkW</i>		$per_unit_gross_ex_post_kwh_savings * cdf$
Input	<i>UEC_{base}</i>	Varies	Illinois TRM V10.0 Vol. 3, p. 31.
Input	<i>UEC_{ee}</i>	Varies	Illinois TRM V10.0 Vol. 3, p. 31.
Input	<i>cdf</i>	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		17	Illinois TRM V10.0 Vol. 3, p. 30.
Inc Cost		Varies	Illinois TRM V10.0 Vol. 3, p. 30.
Measure Name: Clothes Washer			
Savings	<i>ΔkWh</i>		$(Capacity * 1 / IMEF_{base} * N_{cycles} * (\%Cw_{base} + \%DHW_{base} * \%Electric_{DHW}) + (\%Dryer_{base} * \%Electric_{Dryer})) - (Capacity * 1 / IMEF_{eff} * N_{cycles} * (\%Cw_{eff} + \%DHW_{eff} * \%Electric_{DHW}) + (\%Dryer_{eff} * \%Electric_{Dryer}))$
Savings	<i>ΔkW</i>		$per_unit_gross_ex_post_kwh_savings * cdf$
Input	<i>Capacity</i>	Varies	ENERGY STAR database for applicable product ID.
Input	<i>IMEF_{base}</i>	1.75	Illinois TRM V10.0 Vol. 3, p. 11.
Input	<i>IMEF_{eff}</i>	Varies	ENERGY STAR database for applicable product ID.
Input	<i>Ncycles</i>	295	Illinois TRM V10.0 Vol. 3, p. 11.
Input	<i>%Cw_{base}</i>	Varies	Illinois TRM V10.0 Vol. 3, p. 12.

Input	<i>%CWeff</i>	Varies	Illinois TRM V10.0 Vol. 3, p. 12.
Input	<i>%DHWbase</i>	Varies	Illinois TRM V10.0 Vol. 3, p. 12.
Input	<i>%DHWeff</i>	Varies	Illinois TRM V10.0 Vol. 3, p. 12.
Input	<i>%Dryerbase</i>	Varies	Illinois TRM V10.0 Vol. 3, p. 12.
Input	<i>%Dryereff</i>	Varies	Illinois TRM V10.0 Vol. 3, p. 12.
Input	<i>%Electric_DHW</i>	0.16	Illinois TRM V10.0 Vol. 3, p. 12.
Input	<i>%Electric_Dryer</i>	0.38	Illinois TRM V10.0 Vol. 3, p. 12.
Input	<i>cdf</i>	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		14	Illinois TRM V10.0 Vol. 3, p. 10.
Inc Cost		Varies	Illinois TRM V10.0 Vol. 3, p. 10.
Measure Name: Air Purifier			
Savings	<i>ΔkWh</i>		$Hours * (SmokeCADR_base / (SmokeCADR_per_watt_base * 1000)) + ((8760 - Hours) * PartialOnModePower_base / 1000) + Hours * (SmokeCADR_eff / (SmokeCADR_per_watt_eff * 1000)) + ((8760 - Hours) * PartialOnModePower_eff / 1000)$
Savings	<i>ΔkW</i>		$per_unit_gross_ex_post_kwh_savings * cdf$
Input	<i>SmokeCADR_base</i>	Varies	Illinois TRM V10.0 Vol. 3, p. 8.
Input	<i>SmokeCADR_per_watt_base</i>	Varies	Illinois TRM V10.0 Vol. 3, p. 8.
Input	<i>PartialOnModePower_base</i>	Varies	Illinois TRM V10.0 Vol. 3, p. 8.
Input	<i>SmokeCADR_eff</i>	Varies	Characteristics of applicable equipment.
Input	<i>SmokeCADR_per_watt_eff</i>	Varies	Characteristics of applicable equipment.
Input	<i>PartialOnModePower_eff</i>	Varies	Characteristics of applicable equipment.
Input	<i>Hours</i>	5840	Illinois TRM V10.0 Vol. 3, p. 7.
Input	<i>cdf</i>	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		9	Illinois TRM V10.0 Vol. 3, p. 6.
Inc Cost		Varies	Illinois TRM V10.0 Vol. 3, p. 7.

5.3.2. Results of Ex Post Gross Savings Estimation

Table 5-2 summarizes the gross kWh savings of the Home Energy Products ENERGY STAR® Appliances Program by measure. The ex post annual energy savings for the program were 2,303,827 kWh with a realization rate of 97%.

Table 5-2 Measure-Level Annual Gross kWh Savings

Measure	Quantity of Measures Incented	Ex Ante Gross kWh Savings	Gross Audited kWh Savings	Gross Verified kWh Savings	Ex Post Gross kWh Savings	Gross Realization Rate
Electric Dryer	4,378	645,130	645,130	645,130	638,549	99%
Freezer	906	36,240	36,240	36,240	44,976	124%
Refrigerator	11,680	624,160	624,160	624,160	619,371	99%
Clothes Washer	6,110	836,412	836,412	836,412	519,099	62%
Air Purifier	560	234,926	234,926	234,926	481,832	205%
Total	23,634	2,376,868	2,376,868	2,376,868	2,303,827	97%

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

- Clothes Washer (62%). The ex ante analysis assumed a savings of 136 kWh for each unit, whereas the ex post per unit savings varied by unit size and configuration. The average ex post savings was 85 kWh.
- Air purifier (205%). The ex ante savings estimate assumed a saving of 420 kWh for each air purifier, whereas the ex post savings varied by the clean air delivery rate. The average ex post savings was 860 kWh.

Table 5-3 summarizes the gross peak demand reduction of the ENERGY STAR® Appliances Program. The gross peak demand reduction for the program was 251.57 kW, with a realization rate of 85%.

Table 5-3 Measure-Level Annual Gross kW Savings

Measure	Quantity of Measures Incented	Ex Ante Gross kW Savings	Gross Audited kW Savings	Gross Verified kW Savings	Ex Post Gross kW Savings	Gross Realization Rate
Electric Dryer	4,378	138.19	138.19	138.19	69.73	50%
Freezer	906	3.44	3.44	3.44	4.91	143%
Refrigerator	11,680	50.44	50.44	50.44	67.63	134%
Clothes Washer	6,110	62.86	62.86	62.86	56.68	90%
Air Purifier	560	13.75	13.75	13.75	52.61	383%
Total	23,634	268.68	268.68	268.68	251.57	94%

5.4. Estimation of Ex Post Net Savings

The ENERGY STAR Retail Products Platform (ESRPP) is a market transformation program designed to promote the long-term adoption of energy-efficient products by aligning utility incentives and promotions with national ENERGY STAR standards. The program partners with retailers to encourage a strategic focus on energy-efficient products by providing incentives from

utilities and other program sponsors. These incentives aim to influence inventory decisions, increasing the availability and sales of ENERGY STAR certified products. The program’s goal is to achieve sustained adoption of energy-efficient products over time.

While the program emphasizes long-term market transformation, a key component of the evaluation was to quantify the share of efficient product sales directly attributable to the program versus those resulting from natural market adoption during the current program year. To achieve this, ADM conducted regression analyses using historical pre-program sales data to forecast sales of qualified products in the absence of the program.

The approach is consistent with the baselining approach outlined in the *ENERGY STAR® Retail Products Platform (RPP): Conditions and Considerations in Evaluating Market Transformation Programs and Evaluation Guidance for RPP* guidance document.

We describe the three different models used to analyze the data below.

- **Model 1:** A linear regression model with qualified product sales regressed on a time variable equal to the number of months since the beginning of the historical period and non-qualified product sales for the month. Non-qualified product sales were included in the model to capture sales activity overall. That is, non-qualified sales were included to account for exogenous factors that affect sales of the product category (e.g., supply constraints or economic conditions), and in doing so, we assume that exogenous factors would affect both qualified and non-qualified product sales.
- **Model 2:** A Poisson regression in the same form as regression model 1. A Poisson link was used because count data were regressed on the set of predictors.
- **Model 3:** A probit regression that models market penetration of qualified products. In this model, the ratio of qualified product sales to non-qualified product sales is regressed on the sales quarter.

ADM applied these models to the sales data for each product category. For two products, refrigerators and washers, sales data were run separately for advanced and basic tier units. Advanced and basic tier units were also sold for freezers, but few advanced tier freezers were sold and for that reason, the advanced and basic tiers were combined in the analysis. For all other products, only basic tier units were sold.

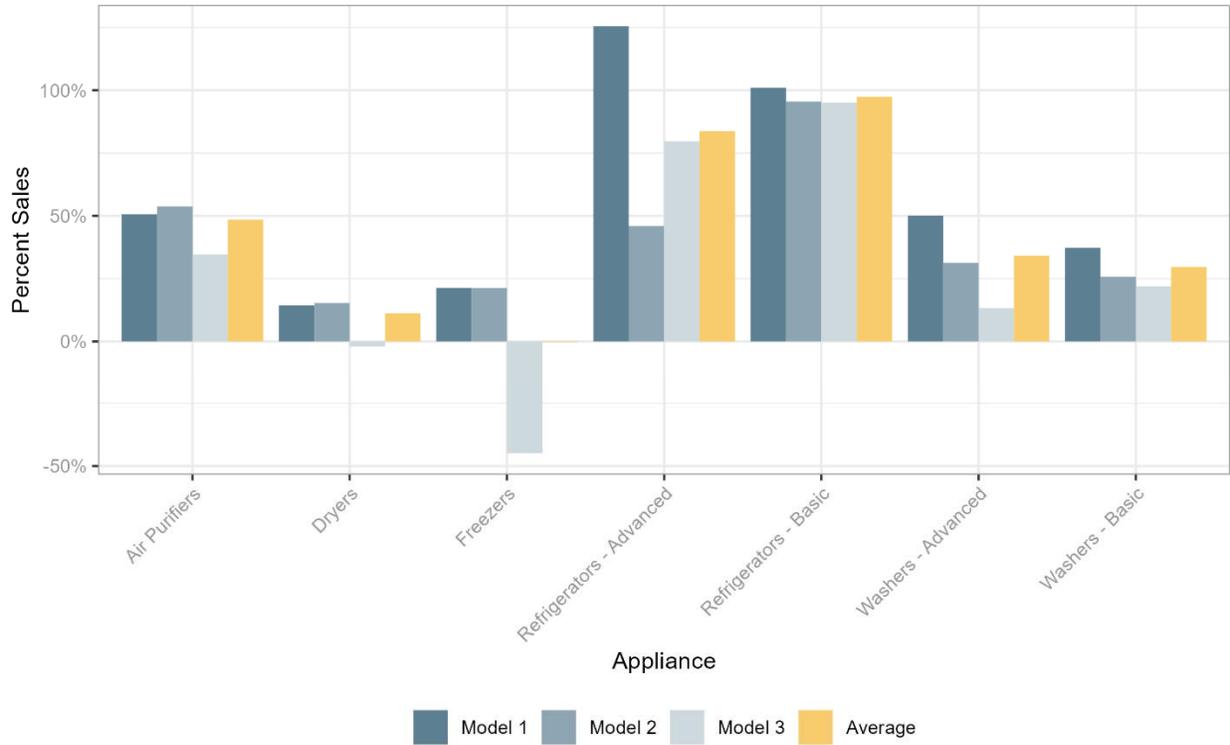
The estimated model coefficients were used to forecast sales of the qualified products in the absence of program support. The model estimated sales were compared to the actual sales to estimate the percentage increase in sales, which is the share of products that were sold due to the program. The increased sales percentage was calculated as:

$$\frac{\text{Observed Sales} - \text{Model Estimated Sales}}{\text{Observed Sales}}$$

The increased sales percentage is a positive value when the observed sales are greater than the forecasted sales and a negative value when the observed sales are less than the forecasted sales.

Figure 5-1 presents the percentage of increased sales estimated using each of the models.

Figure 5-1 Increased Sales Percentage



As shown in Figure 5-1, for most products, the three models produced similar estimates of the percentage of increased sales, but the coefficients were more divergent for advanced refrigerators, and model three showed a decline in sales for freezers compared to an increase shown for the other two modes.

To estimate an overall sales increase, ADM averaged the three model estimates of sales. The average value was weighted by the sum of the squared prediction errors for each of the model estimates. Prediction errors were operationalized as the sum of the squared difference between the predicted and observed values. Put differently, the more closely the model predicted sales aligned with the observed values, the greater the weight applied to that model estimates in calculating the overall average.

To determine if the observed predicted sales increase was statistically significant, ADM calculated the 90% confidence interval for the predicted increase. To calculate the confidence level, ADM calculated the standard error of the summed monthly predictions for each model as the square root of the sum of the standard errors for the monthly predicted values for each model. For example, for model 1, the standard error of the increase was calculated as:

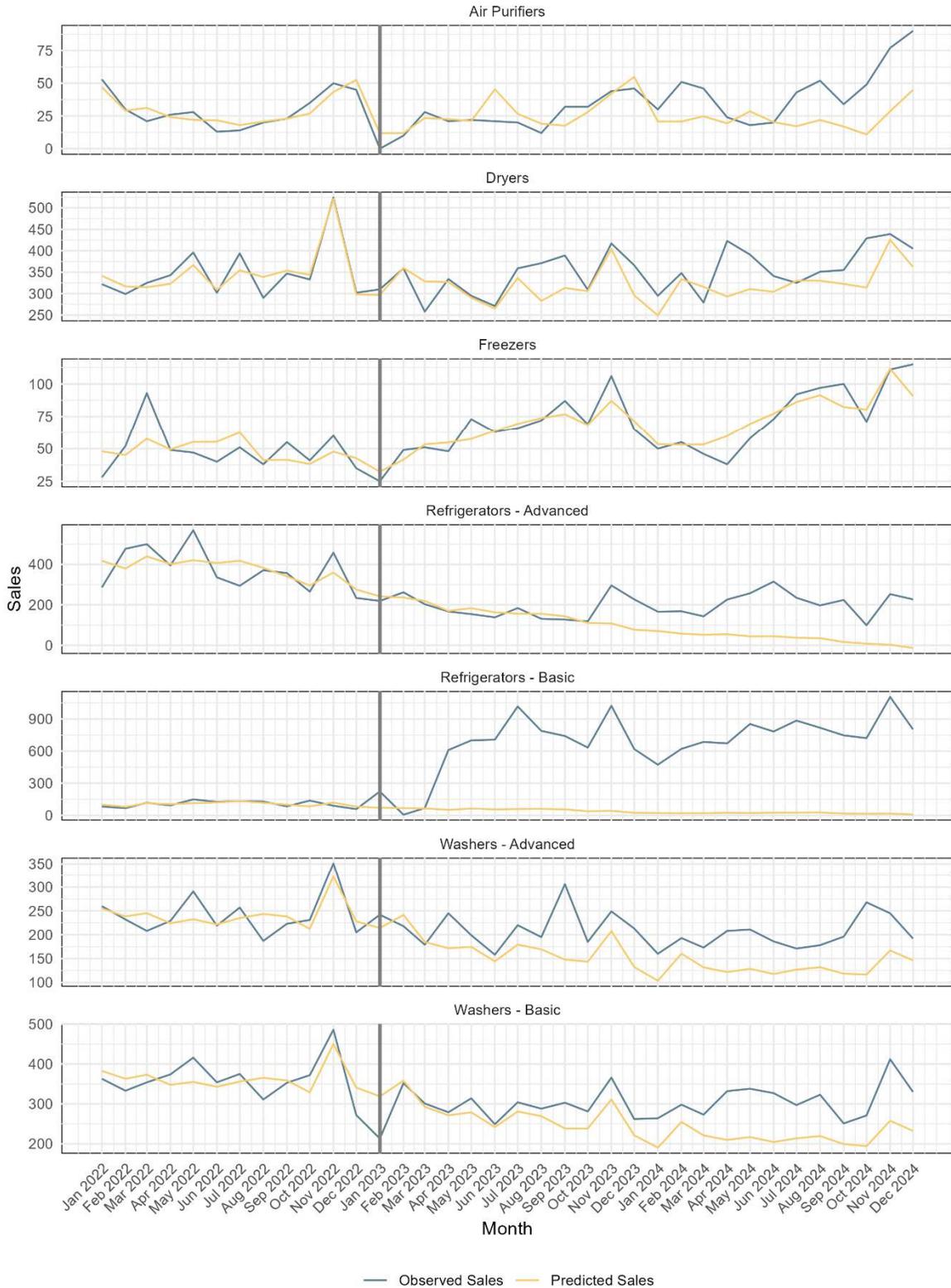
$$SE_{Model\ 1} = \sqrt{\sum_i^n SE_{Model\ 1\ predicted\ value}}$$

To estimate the standard error of the weighted average increase calculated across the three model results, ADM used the following formula:

$$SE_{AverageIncrease} = \sqrt{\frac{\frac{SE_{Model\ 1}}{SSPE_{Model1}} + \frac{SE_{Model\ 2}}{SSPE_{Model2}} + \frac{SE_{Model\ 3}}{SSPE_{Model3}}}{\frac{1}{SSPE_{Model1}} + \frac{1}{SSPE_{Model2}} + \frac{1}{SSPE_{Model3}}}}$$

Figure 5-2 displays plots of the observed and forecasted sales during the pre- and post-program periods.

Figure 5-2 Observed and Forecasted Qualified Product Sales (Vertical Bar Divides the Pre and Post Program Periods)



5.4.1. Results of Ex Post Net Savings Estimation

ADM assumed that the net impact of the program was 0 if the net sales value 1) was negative, indicating that sales were less than predicted based on pre-program sales or 2) the 90% confidence interval for the increase in sales contained 0, suggesting that the sales increase was within the range of normal sample variation. As such, ADM assumed the net program effect for these products was 0. Table 5-4 summarizes the sales effects used to estimate the program savings.

Table 5-4 Final Net Sale Values

<i>Product</i>	<i>Average Increase</i>	<i>90% Confidence Interval (Lower/Upper)</i>	<i>Percent Increase in Sales</i>
Air Purifiers	259	245 / 273	48%
Dryers	490	463 / 517	11%
Freezers	-2	-22 / 17	0%
Refrigerators - Advanced	2,102	2058 / 2146	84%
Refrigerators - Basic	8926	8902 / 8951	97%
Washers - Advanced	812	784 / 840	34%
Washers - Basic	1,103	1071 / 1135	30%

Table 5-5 compares the net sales impact found for the I&M program and compares it to values found in three other evaluations of the ENERGY STAR® Retail Products Platform. As shown, the estimates are variable but there is some consistency for dryers, and advanced refrigerators. Each of the benchmark evaluations was performed for the first year the program was offered.

Table 5-5 Percent Increase Benchmark Comparison

<i>Product</i>	<i>I&M (PY2023)</i>	<i>I&M (PY2024)</i>	<i>Con Edison</i>	<i>PG&E</i>	<i>ComEd*</i>
Air Purifiers	-13%	48%		-5%	
Dryers	4%	11%	10%	8%	
Freezers	3%	0%	11%	63%	
Refrigerators - Advanced	12%	84%	15%	15%	0%
Refrigerators - Basic	91%	97%		2%	
Washers - Advanced	18%	34%	-43%	-104%	2%
Washers - Basic	4%	30%		85%	

Sources:

Con Edison Retail Products Platform (RPP) Evaluation 2017. EMI Consulting. June 2018.

Pacific Gas & Electric ENERGY STAR Retail Products Platform (ESRPP). Program Pilot Early Evaluation. Final Report. January 2019.

ComEd ENERGY STAR Retail Products Platform Pilot Impact Evaluation Report. Program Year 2020 (CY2020). Guidehouse. April 2021.

*ComEd’s program included basic and advanced tiers, but incentives were only provided for basic-tier clothes washers and advanced-tier refrigerators.

Table 5-6 summarizes the ex post annual net kWh and kW savings of the ENERGY STAR® Appliances Program. The annual net savings totaled 1,052,931 kWh and 114.98 kW.

Table 5-6 Program-Level Annual Net kWh and kW Savings

<i>Category</i>	<i>kWh</i>	<i>kW</i>
Ex Ante Gross Savings	2,376,868	268.68
Gross Audited Savings	2,376,868	268.68
Gross Verified Savings	2,376,868	268.68
Ex Post Gross Savings	2,303,827	251.57
Gross Realization Rate	97%	94%
Ex Post Free Ridership	1,250,896	136.59
Ex Post Non-Participant Spillover	0	-
Ex Post Participant Spillover	0	-
Ex Post Net Savings	1,052,931	114.98
Net-to-Gross Ratio	46%	46%
Ex Post Net Lifetime Savings	15,470,272	NA

5.5. Process Evaluation

5.5.1.1. Program Design and Operations

Program Overview

ADM interviewed the energy efficiency and consumer products coordinator to gain insight into the Home Energy Products ENERGY STAR Appliances program. The coordinator manages multiple programs, with responsibilities including aligning monthly reports with program goals, and monitoring appliance sales through major retailers like Lowe's, Home Depot, and Best Buy. The coordinator also participates in evaluating potential new products for the program.

I&M does not currently market the Home Energy Products ENERGY STAR Appliances program.

Incentive Adjustments in 2024

In 2024, there were adjustments to incentive levels based on product categories. In Indiana, incentives for advanced refrigerators increased from \$5 to \$10, while incentives for basic freezers and basic room air cleaners were reduced from \$20 to \$10 and from \$25 to \$15, respectively. These changes were made to better align incentives with current market conditions and consumer responses.

Data Collection and Tracking

To mitigate the risk of double counting air purifiers sold through both the Online Marketplace and the Home Energy Products ENERGY STAR Appliances program, instant rebates for air purifiers on the Online Marketplace have been disabled (the last instant rebate air purifier was sold in June 2024). This change prevents the double counting of savings from air purifiers sold through the ESRPP and the Online Marketplace.

There have been no significant changes to the program's data collection and tracking procedures this year. Data is tracked using a combination of personal spreadsheets and support team processes, which involve consolidating files into the ECP system to ensure data consistency. The focus remains on verifying the accuracy of reported numbers for scorecard evaluations.

5.6. Findings and Recommendations

The program addressed the issue of the risk of double counting air purifiers sold through ESRPP and the Online Market Place program identified in the PY2023 evaluation. The Online Marketplace rebate ended in June 2024.

6. Home HVAC Midstream

This chapter presents the results of both the impact and process evaluations of the 2024 Home HVAC Midstream Program that Indiana Michigan Power (I&M) offered to its residential customers during the period of January 2024 through December 2024.

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.
- Complete a process evaluation of the program.
- Provide recommendations for program improvement as appropriate.

6.1. Program Description

The rebates provided in the Home HVAC Midstream Program offset a portion of the cost barriers inhibiting the local stocking practices for more efficient HVAC measures. The prescriptive rebates in this program are pre-determined cash reimbursements for typical energy efficiency measures undertaken by residential end use customers. Measure rebates in this program are designed with the intent to provide a partial offset of the incremental measure cost but serve to offset the cost for distributors to stock the more efficient measures eligible for rebates in this program.

The program may also provide encouragement for distributors through other incentives if they demonstrate through and provide sales data that stocking levels have improved through the use of the distributor's sales team, as applicable and as determined by I&M and its implementation partner for this program.

6.2. Data Collection

Data used to support the impact evaluation of the program included:

- Program tracking data from the primary tracking database;
- Program summary data from the I&M DSM EE Program Scorecard; and
- Participant survey data and/or distributor interview data.

ADM collected data from customers that receive the rebated equipment and from participating distributors. This data was used to confirm the installation of the measures, provide data on the appropriate baseline for the installation, and inform the process evaluation and estimation of net savings.

Table 6-1 summarizes the data collection activities. ADM aimed to conduct a survey of all end-users who installed the equipment eligible for rebates by the end of October 2024. In developing the survey sample, we excluded customers that received HVAC tune-ups and cases where the measures were installed in larger multifamily properties. To engage participants, a letter

containing a QR code, and a link was sent out to customers. This initial contact was supplemented by telephone outreach, during which a maximum of three calls were made to each customer. Because only eight responses were obtained.

Table 6-1 Home HVAC Midstream Survey and Interview Data Collection

Survey	Mode	Time Frame	Number of Contacts	Number of Completions	Completion Rate
Midstream HVAC	Letter mailed web survey link and phone follow up	November 2024	66	8	12.1%

6.3. Estimation of Ex Post Gross Savings

6.3.1. Methodology for Estimating Ex Post Gross Energy Savings

6.3.1.1. Review of Documentation

ADM reviewed the program tracking data to ensure that the data provides sufficient information to identify unique customers for surveying and to calculate energy and demand impacts. The data from the system was reviewed for duplicate entries.

6.3.1.2. Procedures for Estimating Measure-Level Gross Energy Savings

Table 6-2 presents information on savings calculation formulas, savings calculation inputs, incremental cost, and effective useful life values and data sources applicable to the Home HVAC Midstream Program.

Table 6-2 Home HVAC Midstream Program Calculation Input Information

Variable Type	Variable Name	Variable Value	Variable Value Source
Measure Name: Ductless Heat Pump			
Savings - 1	ΔkWh Baseline 1		$\left(\frac{\text{Capacity_heat_ee}}{\text{HSPF2_base}} - \frac{\text{Capacity_heat_ee}}{\text{HSPF2_ee}} \right) / 1000 * \text{EFLH_heat} + \left(\frac{\text{Capacity_cool_ee}}{\text{SEER2_base}} - \frac{\text{Capacity_cool_ee}}{\text{SEER2_ee}} \right) / 1000 * \text{EFLH_cool} + \left(\text{Heating_kwh_exist} - \left(\frac{\text{Capacity_heat_ee}}{\text{HSPF2_base}} \right) / 1000 * \text{EFLH_heat} \right) * \text{ER_factor} + \left(\frac{\text{Capacity_cool_exist}}{\text{SEER2_exist}} - \frac{\text{Capacity_cool_ee}}{\text{SEER2_base}} \right) / 1000 * \text{ER_factor} * \text{EFLH_cool}$
Savings - 2	ΔkW Baseline 1		$\text{per_unit_gross_ex_post_kwh_savings} * \text{cdf}$
Savings - 2	ΔkWh (Baseline 2)		$\left(\frac{\text{Capacity_heat_ee}}{\text{HSPF2_base}} - \frac{\text{Capacity_heat_ee}}{\text{HSPF2_ee}} \right) / 1000 * \text{EFLH_heat} + \left(\frac{\text{Capacity_cool_ee}}{\text{SEER2_base}} - \frac{\text{Capacity_cool_ee}}{\text{SEER2_ee}} \right) / 1000 * \text{EFLH_cool}$
Savings - 2	ΔkW (Baseline 2)		$\text{per_unit_gross_ex_post_kwh_savings_second_baseline} * \text{cdf}$
Input	Capacity_cool_exist	Varies	Assumed equivalent to new equipment.

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Input	<i>Capacity_cool_ee</i>	Varies	Tracking data.
Input	<i>EFLH_cool</i>	Varies	Illinois TRM V10.0 Vol. 3, p. 157. Indiana TRM Workbook V1.
Input	<i>SEER2_exist</i>	Varies	Illinois TRM V10.0 Vol. 3, p. 158. ASHP.
Input	<i>SEER2_base</i>	13.4	2023 Indiana TRM Workbook, '5.3.12 Ductless Heat Pumps' worksheet.
Input	<i>SEER2_ee</i>	Varies	AHRI. Characteristics of applicable equipment.
Input	<i>Capacity_heat_ee</i>	Varies	Tracking data.
Input	<i>EFLH_heat</i>	Varies	Illinois TRM V10.0 Vol. 3, p. 158. Indiana TRM Workbook V1.
Input	<i>HSPF2_base</i>	Varies	2023 Indiana TRM Workbook, '5.3.12 Ductless Heat Pumps' worksheet.
Input	<i>HSPF2_ee</i>	Varies	AHRI. Characteristics of applicable equipment.
Input	<i>Heating_kwh_exist</i>	Varies	Pre-project annual electric energy usage. Based on econometric analysis of interval meter data and capped at estimate of electric resistance baseline usage.
Input	<i>ER_factor</i>	Varies	Based on analysis of survey responses.
Input	<i>cdf</i>	Varies	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL - 1		Varies	Illinois TRM V10.0 Vol. 3, p. 154.
EUL - 2		Varies	Illinois TRM V10.0 Vol. 3, p. 154.
Inc Cost		Varies	Illinois TRM V10.0 Vol. 3, p. 155.
Measure Name: Air Source Heat Pump			
Savings - 1	<i>ΔkWh Baseline 1</i>		$\left(\frac{Capacity_heat_ee}{HSPF2_base} - \frac{Capacity_heat_ee}{HSPF2_ee} \right) / 1000 * EFLH_heat + \left(\frac{Capacity_cool_ee}{SEER2_base} - \frac{Capacity_cool_ee}{SEER2_ee} \right) / 1000 * EFLH_cool + \left(Heating_kwh_exist - \left(\frac{Capacity_heat_ee}{HSPF2_base} \right) / 1000 * EFLH_heat \right) * ER_factor + \left(\frac{Capacity_cool_exist}{SEER2_exist} - \frac{Capacity_cool_ee}{SEER2_base} \right) / 1000 * ER_factor * EFLH_cool$
Savings - 2	<i>ΔkW Baseline 1</i>		<i>per_unit_gross_ex_post_kwh_savings * cdf</i>
Savings - 2	<i>ΔkWh (Baseline 2)</i>		$\left(\frac{Capacity_heat_ee}{HSPF2_base} - \frac{Capacity_heat_ee}{HSPF2_ee} \right) / 1000 * EFLH_heat + \left(\frac{Capacity_cool_ee}{SEER2_base} - \frac{Capacity_cool_ee}{SEER2_ee} \right) / 1000 * EFLH_cool$
Savings - 2	<i>ΔkW (Baseline 2)</i>		<i>per_unit_gross_ex_post_kwh_savings_second_baseline * cdf</i>
Input	<i>Capacity_cool_exist</i>	Varies	Tracking data.
Input	<i>Capacity_cool_ee</i>	Varies	Tracking data.
Input	<i>EFLH_cool</i>	Varies	Illinois TRM V10.0 Vol. 3, p. 75. Indiana TRM Workbook V1.
Input	<i>SEER2_exist</i>	Varies	Illinois TRM V10.0 Vol. 3, p. 76. ASHP.
Input	<i>SEER2_base</i>	14.3	2023 Indiana TRM Workbook, '5.3.1 ASHP' worksheet.
Input	<i>SEER2_ee</i>	Varies	AHRI. Characteristics of applicable equipment.
Input	<i>Capacity_heat_ee</i>	Varies	Tracking data.
Input	<i>EFLH_heat</i>	Varies	Illinois TRM V10.0 Vol. 3, p. 77. Indiana TRM Workbook V1.
Input	<i>HSPF2_base</i>	Varies	2023 Indiana TRM Workbook, '5.3.1 ASHP' worksheet.
Input	<i>HSPF2_ee</i>	Varies	AHRI. Characteristics of applicable equipment.

Input	<i>Heating_kwh_exist</i>	Varies	Pre-project annual electric energy usage. Based on econometric analysis of interval meter data and capped at estimate of electric resistance baseline usage.
Input	<i>ER_factor</i>	Varies	Based on analysis of survey responses.
Input	<i>cdf</i>	Varies	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL - 1		Varies	Illinois TRM V10.0 Vol. 3, p. 72.
EUL - 2		Varies	Illinois TRM V10.0 Vol. 3, p. 72.
Inc Cost		Varies	Illinois TRM V10.0 Vol. 3, p. 73.
Measure Name: Central Air Conditioner			
Savings - 1	<i>ΔkWh Baseline 1</i>		$((Capacity_cool / SEER2_base) - (Capacity_cool / SEER2_ee)) / 1000 * EFLH_cool) + ((Capacity_cool / SEER2_exist) - (Capacity_cool / SEER2_base)) / 1000 * ER_factor * EFLH_cool$
Savings - 2	<i>ΔkW Baseline 1</i>		<i>per_unit_gross_ex_post_kwh_savings * cdf</i>
Savings - 2	<i>ΔkWh (Baseline 2)</i>		$((Capacity_cool / SEER2_base) - (Capacity_cool / SEER2_ee)) / 1000 * EFLH_cool$
Savings - 2	<i>ΔkW (Baseline 2)</i>		<i>per_unit_gross_ex_post_kwh_savings_second_baseline * cdf</i>
Input	<i>Capacity_cool</i>	Varies	Tracking data.
Input	<i>Capacity_cool</i>	Varies	Tracking data.
Input	<i>EFLH_cool</i>	Varies	Illinois TRM V10.0 Vol. 3 Vol. 3, p. 94.
Input	<i>SEER2_exist</i>	Varies	Illinois TRM V10.0 Vol. 3 Vol. 3, p. 94.
Input	<i>SEER2_base</i>	13.4	2023 Indiana TRM Workbook, '5.3.3 Central Air Conditioning' worksheet.
Input	<i>SEER2_ee</i>	Varies	AHRI. Characteristics of applicable equipment.
Input	<i>ER_factor</i>	Varies	Based on analysis of survey responses.
Input	<i>cdf</i>	Varies	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL - 1		6	Illinois TRM V10.0 Vol. 3 Vol. 3, p. 92.
EUL - 2		12	Illinois TRM V10.0 Vol. 3 Vol. 3, p. 92.
Inc Cost		Varies	Illinois TRM V10.0 Vol. 3 Vol. 3, p. 92.
Measure Name: Smart Thermostat			
Savings	<i>ΔkWh</i>		$Cooling_kWh * Heating_Reduction + Heating_kWh * Cooling_Reduction$
Savings	<i>ΔkW</i>		<i>per_unit_gross_ex_post_kwh_savings * cdf</i>
Input	<i>Heating_Reduction</i>	0.085	Illinois TRM V10.0 Vol. 3, p. 180. Unknown baseline thermostat type.
Input	<i>Cooling_kWh</i>	Varies	If newly-installed HVAC equipment present, equals $((btuh_cool_new_unit / SEER2_ee) / 1000 * EFLH_cool)$; otherwise, based on econometric analysis of interval meter data.
Input	<i>Cooling_Reduction</i>	0.084	Illinois TRM V10.0 Vol. 3, p. 182.
Input	<i>Heating_kWh</i>	Varies	If newly-installed HVAC equipment providing heating present, equals $((btuh_heat_new_unit / HSPF2_ee) / 1000 * EFLH_heat)$; otherwise, based on econometric analysis of interval meter data.
Input	<i>cdf</i>	Varies	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		11	Illinois TRM V10.0 Vol. 3, p. 178.
Inc Cost		125	Illinois TRM V10.0 Vol. 3, p. 178.
Measure Name: Heat Pump Water Heater			

Savings	ΔkWh		$(1 / UEF_{base} - 1 / UEF_{new}) * 17.6 \text{ GPD} * \text{Household} * 365.25 * 8.33 \text{ lbs / gallon} * (T_{out} - T_{in}) / 3412 + kWh_{cooling} - kWh_{heating} + \text{Dehumidification}$
Savings	ΔkW		$per_unit_gross_ex_post_kwh_savings * cdf$
Input	UEF_{base}	Varies	Federal appliance standard.
Input	UEF_{new}	Varies	Tracking data. Characteristics of applicable equipment.
Input	17.6 GPD	17.6	Illinois TRM V10.0 Vol. 3, p. 217.
Input	Household	Varies	Illinois TRM V10.0 Vol. 3, p. 217.
Input	T_{out}	125	Illinois TRM V10.0 Vol. 3, p. 217.
Input	T_{in}	50.7	Illinois TRM V10.0 Vol. 3, p. 77. Indiana TRM Workbook V1.
Input	$kWh_{cooling}$	Varies	$(((((17.6 \text{ GPD} * \text{Household} * 365.25 * 8.33 \text{ lbs / gallon} * (T_{out} - T_{in}) * 1) / 3412 - ((1 / UEF_{new} * 17.6 \text{ GPD} * \text{Household} * 365.25 * 8.33 \text{ lbs / gallon} * (T_{out} - T_{in}) * 1) / 3412))) * LF * \text{CoolLoadFactor}) / (\text{COP}_{cool}) * LM))$
Input	$kWh_{heating}$	Varies	$(((((17.6 \text{ GPD} * \text{Household} * 365.25 * 8.33 \text{ lbs / gallon} * (T_{out} - T_{in}) * 1) / 3412 - ((1 / UEF_{new} * 17.6 \text{ GPD} * \text{Household} * 365.25 * 8.33 \text{ lbs / gallon} * (T_{out} - T_{in}) * 1) / 3412))) * LF * \text{HeatLoadFactor}) / (\text{COP}_{heat}))$
Input	Dehumidification	359	Illinois TRM V10.0 Vol. 3, p. 219. Dehumidifier in use.
Input	cdf	Varies	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		15	Illinois TRM V10.0 Vol. 3, p. 215.
Inc Cost		Varies	Illinois TRM V10.0 Vol. 3, p. 216.

6.3.1.2.1. Early Replacement Analysis

6.3.1.2.1.1 Determining Early Replacement Likelihood Score (ER_{factor})

Responses to the following two participant survey questions were used to develop estimates of ER_{factor} referenced in Table 6-2, which is the likelihood that an early replacement baseline is applicable to the estimation of equipment savings:

- Question 1 (LIKELIHOOD): 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 [EQUIPMENT_TYPE] at about the same time if you had not received the discount?
- Question 2 (TIMING): When might you have installed the same [EFF_MEASURE1/2] if the discount was not available?

Survey respondent ER_{Factor} is calculated as follows:

$$ER_{factor} = IF(TIMING \geq \text{two years}, (10 - LIKELIHOOD) / 10, 0)$$

If a customer is a survey respondent, then, in the savings analysis, ER_{factor} is equal to value calculated per the formula above based on the customer’s survey responses. If a customer is a survey non-respondent, then ER_{factor} is set equal to the average ER_{factor} of survey respondents for the applicable measure.

6.3.1.2.1.2 *Determining Incremental Early Replacement Savings*

Stipulated values and new equipment capacity values were employed to calculate the kWh estimates for normal replacement heating and cooling, as well as incremental early replacement cooling.

However, for estimating incremental early replacement heating savings, a different methodology was utilized due to the lack of data on pre-existing equipment characteristics. This methodology used customer interval energy usage data to establish the existing equipment baseline energy use for early replacements. The three-step process used to estimate the existing equipment energy use is described below.

Step 1. Develop initial estimate of existing heating energy usage.

For participants with complete interval energy usage data for 2022, econometric analysis of interval usage data was conducted using the following model:

$$kWh_i = B_0 + B_{1CDH_i} + B_{2HDH_i} + e_i$$

Where:

kWh = Dependent variable; hourly power (kWh).

CDH = MAX (Outdoor Temperature - 65°F, 0)

HDH = MAX (65°F - Outdoor Temperature, 0)

Interval usage data-based estimates of annual heating energy usage (kWh_exist_heat_ami) are calculated as follows:

- If the t-statistic of the meter-specific value of B2 resulting from estimation of the model described above was less than 10.0, we set kWh_exist_heat_ami equal to 0.
- If the t-statistic of the meter-specific value of B2 resulting from estimation of the model described above was equal to or greater than 10.0, we calculated kWh_exist_heat_ami by multiplying the sum of the applicable annual heating degree hours (HDH) by the meter-specific value of B2 resulting from estimation of the model described above.

Step 2. Cap initial estimate of existing heating energy usage at estimated resistance heating unit energy usage.

Heating_kwh_inter was calculated as:

$$Heating_kwh_exist_inter = MIN(kWh_exist_heat_ami, Electric_resistance_heating_kWh)$$

Where:

$$Electric_resistance_heating_kWh = ((Capacity_heat * EFLH_heat * (1 / 3.41)) / 1000)$$

Step 3. Develop final estimate of existing heating energy usage, ensuring that no incremental early replacement heating energy savings are calculated unless substantiated by results of the analysis of interval data.

Then, Heating_kwh_exist was calculated as:

$$Heating_kwh_exist = MAX(Heating_kwh_exist_inter, Baseline_unit_heating_kwh)$$

Where:

$$Baseline_unit_heating_kwh = ((Capacity_heat * EFLH_heat * (1 / HSPF_base)) / 1000)$$

Application of the third step ensures that incremental heating early replacement savings equal 0 kWh when there was insufficient pre-project kWh usage to substantiate a finding of incremental early replacement savings.

Again, incremental heating early replacement savings are calculated as:

$$(Heating_kwh_exist - (Capacity_heat / HSPF_base / 1000 * EFLH_heat)) * ER_factor$$

ER_factor is the estimated likelihood that an early replacement baseline is applicable. If a customer was a survey respondent, then ER_factor was equal a value between 0 and 1 based on responses related to when equipment replacement would have occurred in the absence of the program. If a customer is a survey non-respondent, then ER_factor was set equal to the average ER_factor of survey respondents for the applicable measure.

6.3.1.3. Verification and In-Service Rates

Table 7-4 shows the verification rates for program measures provided through the Home Energy Home HVAC Midstream Program. The results are based on a combination of PY2023 and PY2024 surveys findings.

Table 6-3 Summary of Measure Verification Rates

Measure	Number of Measure Responses	Verification/ In Service Rate	Stratum/Source	Stratum Sample Size
Air Source Heat Pump	6	100%	Average Midstream HVAC Value	32
Central Air Conditioner	16	100%	Average Midstream HVAC Value	32
Ductless Heat Pump	9	100%	Average Midstream HVAC Value	32
Smart Thermostat	1	100%	Average Midstream HVAC Value	32
HVAC Tune Up	0	100%	Average Midstream HVAC Value	32

6.3.2. Results of Ex Post Gross Savings Estimation

Table 6-4 summarizes the gross kWh savings of the Home HVAC Midstream Program by measure. The ex post annual energy savings for the program were 328,833 kWh with a realization rate of 61%.

Table 6-4 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>
Air Source Heat Pump	212	223,640	223,640	223,640	83,645	37%
Ductless Heat Pump	100	109,581	109,581	109,581	162,854	149%
Central Air Conditioner	3	750	750	750	727	97%
Smart Thermostat	39	16,984	16,984	16,984	10,598	62%
HVAC Tune-up	239	184,779	184,779	184,779	66,019	36%
Heat Pump Water Heater	2	4,311	4,311	4,311	4,990	116%
Total	595	540,045	540,045	540,045	328,833	61%

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

- Air Source Heat Pumps (37%) – The low realization rate is largely due to two projects where many installed units provided minimal incremental savings:
 - At a master-metered multifamily property, the installed ASHPs had HSPF2 = 7.5, resulting in no heating energy savings.
 - At a new construction multifamily project, the installed ASHPs matched the federal SEER2 and HSPF2 baseline efficiency, leading to no claimable savings under program rules.
- Ductless Heat Pumps (149%) – Ex post savings were determined by referencing AHRI-reported characteristics of the installed units and comparing them to the applicable federal baseline, since no early replacements occurred.
- Smart Thermostats (62%) – Ex ante savings were set at either 118.5 kWh or 1,885 kWh, depending on the heating system type. Ex post savings were calculated using the Illinois TRM V10.0 methodology, applying stipulated heating and cooling savings factors to baseline usage. Baseline heating and cooling consumption was determined either by referencing new HVAC equipment efficiencies and capacities (where applicable) or through regression analysis of participant interval energy usage data.
- HVAC Tune-Ups (36%) – The low realization rate is related to the tuned HVAC equipment being relatively efficient, limiting potential savings from tune-ups.

Table 6-5 summarizes the gross peak demand reduction of the HVAC Midstream Program. The gross peak demand reduction for the program was 131.95 kW, with a realization rate of 147%.

Table 6-5 Measure-Level Annual Gross kW Savings

<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>
Air Source Heat Pump	212	39.30	39.30	39.30	49.77	127%
Ductless Heat Pump	100	27.59	27.59	27.59	71.84	260%
Central Air Conditioner	3	1.83	1.83	1.83	1.42	78%
Smart Thermostat	39	6.15	6.15	6.15	1.16	19%
HVAC Tune-up	239	14.79	14.79	14.79	7.21	49%
Heat Pump Water Heater	2	0.20	0.20	0.20	0.54	267%
Total	595	89.87	89.87	89.87	131.95	147%

6.4. Estimation of Ex Post Net Savings

For the HVAC Midstream Program, ADM assessed free ridership using data collected from a customer survey for those who received discounted HVAC equipment and interviews with participating distributors. These methods aimed to identify both direct and indirect impacts of the program on the adoption of high-efficiency HVAC units. The program’s direct effect on end-users was through offering discounts that reduced costs for end-users. Indirectly, it influenced the market by increasing the availability of efficient units and motivating distributors to promote these to buyers.

The integration of data from end-users and distributors was as follows:

- When End-Users Were Aware of the Discount, free ridership was estimated using the lower score between the end-user’s and the average distributor’s free ridership scores.
- When End-Users Were Unaware of the Discount, the average distributor score alone was utilized for free ridership estimation.

The approach to estimating free ridership for end-users and distributors is described below.

6.4.1.1. Estimation End-User Free Ridership

The methodology for calculating end-user free ridership relies on participant responses in three key areas:

Prior Intent to Install Efficient Equipment: Determined by two questions:

- “Were you planning to install an energy-efficient [Equipment] before learning about the I&M discount?”

- “If yes, did you intend to specifically install an energy-efficient [Equipment] as opposed to a standard efficiency model?”

End-users who were not planning on installing an efficient system prior to learning about the discount are classified as non-free riders.

Action in the Absence of Discount: Evaluated through the question:

- “Without the I&M discount, what would have been your likely course of action?”

Table 6-6 summarizes how the responses to that question were scored.

Table 6-6 Free Ridership Score of Action Taken without Discount

<i>Reported Action Taken without Discount</i>	<i>Free Ridership Score</i>
You would have bought the exact same system or one that was more energy efficient	1
You would have bought a less efficient or lower cost system	.5
You would not have bought a new	0

Likelihood of Installing the Same Equipment Without Discount: This aspect is quantified by converting the likelihood rating to the question “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 [Equipment] at about the same time if you had not received the discount?” into a score:

- Likelihood Score = Likelihood Rating / 10

6.4.1.2. Estimation Distributor Free Ridership

Interviews with distributors were used to assess the program influence on distributor sales tactics, stocking practices, and on sales of qualified equipment. The responses and scoring approach are discussed below. Scoring was performed so that larger values indicated a greater likelihood of free ridership.

Because a limited number of distributor interviews were completed, the net savings analysis of distributor responses used responses from distributors operating in Indiana and in Michigan where I&M also offers the midstream program.

Program Influence on Sales Tactics: A sales tactics score was developed based on distributor reported tactics taken to sell more program-qualified equipment. Specifically, the sales tactics score was calculated by subtracting 0.2 from 1.0, so that lower scores indicated lower potential free ridership, for each of the following tactics that a distributor reported taking:

- Upsell contractors to purchase program-qualified units.
- Conduct training workshops for contractors.
- Marketing of program-qualified units.

- Discuss the benefits of program-qualified units with design professionals (e.g., engineers or architects).
- Develop marketing or informational materials for service providers to use.

Program Influence on Stocking: Distributors who reported that they had increased their stocking of program qualified equipment because of the program were assigned a stocking score of 0 and all others were assigned a stocking score of 1.

Program Influence Score: The program influence score was developed using the distributors 0 to 10 rating on how influential the program has been on their sales of program qualified equipment. Specifically, the score was equal to 1 minus the rating divided by 10.

The overall free ridership score was equal to the average of the sales tactics, influence on sales, and stocking scores.

6.4.1.3. *Estimation of Participant Spillover*

There is limited opportunity for spillover in the midstream program because all qualified measure sales by participating distributors are included in the program sales. For this reason, ADM did not assess participant spillover.

6.4.1.4. *Estimation of Non-Participant Spillover*

ADM estimated non-participant spillover through a survey of non-participating customers in PY2021. No spillover was identified, and ADM did not apply non-participant savings to the PY2023 net savings estimate.

6.4.2. Results of Ex Post Net Savings Estimation

Table 6-7 summarizes the free ridership rates developed from the survey of end-users and interviews with distributors.

Table 6-7 Summary of Free Ridership Rates

<i>Measure</i>	<i>Number of Measure Responses</i>	<i>Average Free Ridership</i>	<i>Stratum / Source</i>	<i>Stratum Sample Size</i>
Air Source Heat Pump	7	34%	Average Midstream HVAC Value	32
Central Air Conditioner	15	34%	Average Midstream HVAC Value	32
Ductless Heat Pump	9	34%	Average Midstream HVAC Value	32
Smart Thermostat	1	34%	Average Midstream HVAC Value	32
HVAC Tune Up	0	34%	Literature Review	0

Table 6-8 summarizes the ex post annual net kWh and kW savings of the Home HVAC Midstream Program. The annual net savings totaled 238,664 kWh and 88.71 kW.

Table 6-8 Program-Level Annual Net kWh and kW Savings

<i>Category</i>	<i>kWh</i>	<i>kW</i>
Ex Ante Gross Savings	540,045	89.87
Gross Audited Savings	540,045	89.87
Gross Verified Savings	540,045	89.87
Ex Post Gross Savings	328,833	131.95
Gross Realization Rate	61%	147%
Ex Post Free Ridership	90,169	43.24
Ex Post Non-Participant Spillover	0	-
Ex Post Participant Spillover	0	-
Ex Post Net Savings	238,664	88.71
Net-to-Gross Ratio	73%	67%
Ex Post Net Lifetime Savings	2,816,089	na

6.5. Process Evaluation

6.5.1. Program Operations

The Residential HVAC Midstream Program partners with distributors to provide discounts on the cost of efficient HVAC and water heating equipment. The overall design of the program remained consistent with the 2022 program, described in greater detail in the 2022 EM&V report. However, one change in 2024 was the addition of HVAC tune-ups, a measure that is not traditionally part of a midstream HVAC program.

The program is currently underperforming in reaching its savings goals, as summarized in Table 6-9. The 2024 ex ante energy savings decreased from 2023 and the program fell short of the target savings goal.

Table 6-9 Ex Ante Savings and Progress Towards Goal

	<i>2022</i>	<i>2023</i>	<i>2024</i>
Ex Ante Savings	25,768	592,265	540,045
Savings Goals	1,295,783	2,363,924	3,504,720
% of Goal	2%	25%	15%

6.5.1.1. Roles and Responsibilities

ADM interviewed the energy efficiency and consumer products coordinator who is currently overseeing the Midstream HVAC program. There have been no changes in the management of the program since last year. The coordinator intends to delegate these responsibilities to a new coordinator once staffing levels are restored.

There have been no significant changes to the design or operations of the HVAC Midstream Program for 2024. The focus is on using the program as a sales tool for participants, helping contractors and distributors to better bid on projects, provide volume discounts, and incorporate rebates into bid responses for residential builders and rehabilitation projects. This approach aims to promote the adoption of higher efficiency HVAC equipment in the market. Recent quarterly business reviews have shown initial signs of progress in this direction.

The HVAC Midstream program has underperformed in reaching its savings goals for 2024. The volume of HVAC equipment sales in 2024 has not increased compared to 2023. HVAC tune-ups were added to increase savings, but this measure is contractor driven rather than a traditional midstream measure.

There has been no change in allowing contractors to apply for incentives directly, bypassing the distributor's application process. Since the inclusion of contractors in the program, the communication structure has evolved. Contractors must now have either an end-use or manufacturer direct partnership to participate. Contractors are allowed to purchase from multiple distributors, complicating the management of these transactions and eligibility guidelines.

6.5.1.2. Recruitment and Training

Efforts to recruit distributors have continued and the number of distributors participating has increased. However, this has not yet translated into a significant improvement in program performance.

Training has primarily focused on counter staff rather than on operational and sales staff who are important for program momentum. Training typically includes instruction on using customer and measure validation tools. CLEARResult introduced a \$100 incentive for the first 20 complete uploads submitted by distributors to encourage initial engagement.

6.5.1.3. Strategies to Increase Engagement

CLEARResult implemented strategies to reduce the administrative burden, such as visiting distributor locations and attending building association events. The \$100 incentive mentioned above is intended to highlight the program's simplicity and encourage participation.

To further support distributors, CLEARResult provided marketing materials, including newsletters and other promotional content, to increase engagement and drive sales of energy-efficient HVAC equipment.

6.5.1.4. Data Tracking and Quality Assurance and Control

Multiple steps are taken to ensure accurate sales tracking and equipment identification. CLEARResult conducted checks of data uploads, verifying the end-use customer to prevent duplicative submissions by both distributors and trade allies. Additionally, I&M performs internal checks when loading data into their tracking system to flag any previously recorded sales and to ensure equipment hasn't already been processed through other incentive programs. To address

incorrectly identified units, CLEAResult performs QA/QC on 5% of submissions, requiring invoices and verifying AHRI reference numbers. AHRI certification, mandatory for all equipment, ensures accurate model identification and compliance with efficiency standards.

6.6. Findings and Recommendations

The Midstream HVAC program remained largely unchanged with some modification to increase program savings. There have been no significant changes in the Midstream HVAC program's management, design, or operations for 2024. The program continues to serve as a sales tool for contractors and distributors, though it has underperformed in meeting savings goals. CLEAResult introduced a \$100 incentive to encourage distributor participation and mitigate administrative burden. Efforts to increase the number of distributors participating have not yet led to significant performance improvements.

Some air source heat pumps included in the program had baseline HSPF ratings equal to the federal standard.

- **Recommendation 1: Ensure that heat pumps included in the program have HSPF ratings higher than the federal standard.** The emphasis should be on HSPF rather than SEER, as heating savings potential in Indiana exceeds cooling savings potential.

7. Home Energy Products Online Marketplace

This chapter presents the results of both the impact and process evaluations of the 2024 Home Energy Products Online Marketplace that Indiana Michigan Power (I&M) offered to its residential customers during the period of January 2024 through December 2024.

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.
- Complete a process evaluation of the online marketplace.
- Provide recommendations for program improvement as appropriate.

7.1. Program Description

The Home Energy Products Online Marketplace provides instant discounts and “Fast Track” Rebates to customers purchasing qualified energy efficient products from the program website. The marketplace also provides information on the efficiency of the products listed.

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.

Table 7-1 Summary of Incentives

<i>Product</i>	<i>Incentive</i>	<i>Quantity Limit</i>	<i>Rebate Type</i>	<i>Qualifications</i>
Smart Thermostats	\$25.00	2/account/lifetime	Instant & Fast-Track	Electric Heat ONLY
Air Purifiers - Energy Star	\$25.00	3/account/lifetime	Instant & Fast-Track	
ES Dehumidifier - Energy Star	\$15.00	2/account/lifetime	Instant & Fast-Track	
ES TV 8.0 > , screen 60" & larger	\$20.00	4/account/lifetime	Instant & Fast-Track	
ES TV 8.0 > , screen 30" - 59"	\$15.00	4/account/lifetime	Instant & Fast-Track	
Smart Sockets	\$3.00	No limit	Instant & Fast-Track	
Water Heater - UEF >= 0.92	\$75.00	2/account/lifetime	Fast-Track Only	
Advanced Power Strips	\$5.00	2/account/lifetime	Fast-Track Only	
Energy-efficient Showerhead (1.5 gpm)	\$10.00	Limit of 3 each	Fast-Track Only	Must have an electric water heater

7.2. Data Collection

7.2.1. Participant Survey

ADM completed a survey of program participants to obtain data to estimate net savings and assess the customer experience.

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:

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

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. The survey resulted in 6 survey responses, falling well short of the target. Survey results for in-service rates and free ridership were consistent with PY2023 findings. The 2024 in-service rate was 100%, compared to 98%-100% in PY2023. Free ridership across all measures was 36% in 2024, compared to 23%-31% in PY2023. Based on these results, ADM used the 2024 survey data to estimate the program's gross and net savings despite the small number of responses.

ADM administered the survey to a census of unique contacts for the Home Energy Products Online Marketplace. For the email survey, ADM contacted each participant up to three times to ask them to complete the survey. Table 7-2 summarizes the results of the survey data collection effort.

Table 7-2 Home Energy Products Online Marketplace

<i>Survey</i>	<i>Mode</i>	<i>Time Frame</i>	<i>Number of Contacts</i>	<i>Number of Completions</i>	<i>Completion Rate</i>
Online Marketplace Participant	Email	November 2024	68	6	8.8%

7.2.2. Program Staff Interviews

ADM interviewed the I&M program coordinator to learn about the program website, portal for monitoring website activity, program marketing efforts and design.

7.3. Estimation of Ex Post Gross Savings

7.3.1. Methodology for Estimating Ex Post Gross Energy Savings

7.3.1.1. Review of Documentation

I&M maintains program tracking information that includes a list of all participants, the measures that they purchased and received a discount for, 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 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.

7.3.1.2. Procedures for Estimating Measure-Level Gross Energy Savings

Table 7-3 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 Online Marketplace Program.

Table 7-3 Home Energy Products Online Marketplace Program Calculation Input Information

Variable Type	Variable Name	Variable Value	Variable Value Source
Measure Name: Marketplace Smart Thermostat			
Savings	ΔkWh		$Cooling_kWh * Heating_Reduction + Heating_kWh * Cooling_Reduction$
Savings	ΔkW		$per_unit_gross_ex_post_kwh_savings * cdf$
Input	$Heating_Reduction$	0.085	Illinois TRM V10.0 Vol. 3, p. 180. Unknown baseline thermostat type.
Input	$Cooling_kWh$	Varies	Based on econometric analysis of interval meter data.
Input	$Cooling_Reduction$	0.084	Illinois TRM V10.0 Vol. 3, p. 182.
Input	$Heating_kWh$	Varies	Based on econometric analysis of interval meter data.
Input	cdf	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		11	Illinois TRM V10.0 Vol. 3, p. 178.
Inc Cost		125	Illinois TRM V10.0 Vol. 3, p. 178.
Measure Name: Marketplace Dehumidifier			
Savings	ΔkWh		$Pints_per_Day * 0.473 / 24 * Hours * ((1 / L_kWh_base) - (1 / L_kWh_EE))$
Savings	ΔkW		$per_unit_gross_ex_post_kwh_savings * cdf$

Input	<i>Hours</i>	2200	Illinois TRM V10.0 Vol. 3, p. 17.
Input	<i>L_kWh_base</i>	Varies	Illinois TRM V10.0 Vol. 3, p. 17.
Input	<i>L_kWh_EE</i>	Varies	Characteristics of applicable equipment.
Input	<i>Pints_per_Day</i>	Varies	Characteristics of applicable equipment.
Input	<i>cdf</i>	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		12	Illinois TRM V10.0 Vol. 3, p. 16.
Inc Cost		Varies	Illinois TRM V10.0 Vol. 3, p. 17.
Measure Name: Marketplace Air Purifier			
Savings	<i>ΔkWh</i>		$Hours * (SmokeCADR_base / (SmokeCADR_per_watt_base * 1000)) + ((8760 - Hours) * PartialOnModePower_base / 1000) + Hours * (SmokeCADR_eff / (SmokeCADR_per_watt_eff * 1000)) + ((8760 - Hours) * PartialOnModePower_eff / 1000)$
Savings	<i>ΔkW</i>		$per_unit_gross_ex_post_kwh_savings * cdf$
Input	<i>SmokeCADR_base</i>	Varies	Illinois TRM V10.0 Vol. 3, p. 8.
Input	<i>SmokeCADR_per_watt_base</i>	Varies	Illinois TRM V10.0 Vol. 3, p. 8.
Input	<i>PartialOnModePower_base</i>	Varies	Illinois TRM V10.0 Vol. 3, p. 8.
Input	<i>SmokeCADR_eff</i>	Varies	Characteristics of applicable equipment.
Input	<i>SmokeCADR_per_watt_eff</i>	Varies	Characteristics of applicable equipment.
Input	<i>PartialOnModePower_eff</i>	Varies	Characteristics of applicable equipment.
Input	<i>Hours</i>	5840	Illinois TRM V10.0 Vol. 3, p. 7.
Input	<i>cdf</i>	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		9	Illinois TRM V10.0 Vol. 3, p. 6.
Inc Cost		Varies	Illinois TRM V10.0 Vol. 3, p. 7.
Measure Name: Marketplace Water Heater			
Savings	<i>ΔkWh</i>		$(1 / UEF_base - 1 / UEF_new) * 17.6\ GPD * Household * 365.25 * 8.33\ lbs / gallon * (T_out - T_in) / 3412 + kWh_cooling - kWh_heating + Dehumidification$
Savings	<i>ΔkW</i>		$per_unit_gross_ex_post_kwh_savings * cdf$
Input	<i>UEF_base</i>	Varies	Federal appliance standard.
Input	<i>UEF_new</i>	Varies	Tracking data. Characteristics of applicable equipment.
Input	<i>17.6 GPD</i>	17.6	Illinois TRM V10.0 Vol. 3, p. 217.
Input	<i>Household</i>	Varies	Illinois TRM V10.0 Vol. 3, p. 217.
Input	<i>T_out</i>	125	Illinois TRM V10.0 Vol. 3, p. 217.
Input	<i>T_in</i>	50.7	Illinois TRM V10.0 Vol. 3, p. 217.
Input	<i>kWh_cooling</i>	Varies	$IF(heat_pump_water_heater=1,((((17.6\ GPD * Household * 365.25 * 8.33\ lbs / gallon * (T_out - T_in) * 1) / 3412 - ((1 / UEF_new * 17.6\ GPD * Household * 365.25 * 8.33\ lbs / gallon * (T_out - T_in) * 1) / 3412)) * LF * CoolLoadFactor) / (COP_cool) * LM),0)$

Input	<i>kWh_heating</i>	Varies	IF(heat_pump_water_heater=1,((((17.6 GPD * Household * 365.25 * 8.33 lbs / gallon * (T_out - T_in) * 1) / 3412 - ((1 / UEF_new * 17.6 GPD * Household * 365.25 * 8.33 lbs / gallon * (T_out - T_in) * 1) / 3412)) * LF * HeatLoadFactor) / (COP_heat)),0)
Input	<i>Dehumidification</i>	Varies	If heat_pump_water_heater = 1, Illinois TRM V10.0 Vol. 3, p. 219. Dehumidifier usage unknown; otherwise 0.
Input	<i>cdf</i>	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		15	Illinois TRM V10.0 Vol. 3, p. 215.
Inc Cost		Varies	Illinois TRM V10.0 Vol. 3, p. 216. If electric resistance, equals \$0.
Measure Name: Marketplace Television			
Savings	<i>ΔkWh</i>		<i>kWh</i>
Savings	<i>ΔkW</i>		<i>per_unit_gross_ex_post_kwh_savings * cdf</i>
Input	<i>kWh</i>	Varies	Illinois TRM V11.0 Vol. 3, p. 86-87. Depends on screen size. New measure in TRM V11.0; not found in TRM V10.0.
Input	<i>cdf</i>	0.000637	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		5	Illinois TRM V11.0, Vol. 3, p. 86.
Inc Cost		60	Illinois TRM V11.0 Vol. 3, p. 86.
Measure Name: Marketplace Smart Socket			
Savings	<i>ΔkWh</i>		$((((WBase * OnAdj) - WEff) * (hrswkday - hrswkday_open)) + (((WBase * OnAdj) - WEff) * (hrswkend - hrswkend_open))) / 1000 * weeks_year$
Savings	<i>ΔkW</i>		<i>per_unit_gross_ex_post_kwh_savings * cdf</i>
Input	<i>WBase</i>	Varies	Illinois TRM V10.0 Vol. 2, p. 799.
Input	<i>OnAdj</i>	1	Illinois TRM V10.0 Vol. 2, p. 800.
Input	<i>WEff</i>	0.7	Illinois TRM V10.0 Vol. 2, p. 800.
Input	<i>hrswkday</i>	106	Illinois TRM V10.0 Vol. 2, p. 800.
Input	<i>hrswkday_open</i>	30	Illinois TRM V10.0 Vol. 2, p. 909, provides estimate of 48 for offices; ADM estimate for residences is 30.
Input	<i>hrswkend</i>	62	Illinois TRM V10.0 Vol. 2, p. 800.
Input	<i>hrswkend_open</i>	16	Illinois TRM V10.0 Vol. 2, p. 909, provides estimate of V10 for offices; ADM estimate for residences is 16.
Input	<i>weeks_year</i>	52.2	Illinois TRM V10.0 Vol. 2, p. 800.
Input	<i>cdf</i>	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		7	Illinois TRM 10.0 Vol. 2, p. 798.
Inc Cost		9	Illinois TRM 10.0 Vol. 2, p. 907.
Measure Name: Marketplace Advanced Power Strip			
Savings	<i>ΔkWh</i>		<i>kWh</i>
Savings	<i>ΔkW</i>		<i>per_unit_gross_ex_post_kwh_savings * cdf</i>
Input	<i>kWh</i>	Varies	Illinois TRM V10 Vol. 3, p. 64.
Input	<i>cdf</i>	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		7	Illinois TRM V10 Vol. 3, p. 63.
Inc Cost		10	Illinois TRM V10 Vol. 3, p. 63.

Measure Name: LED Nightlight			
Savings	ΔkWh		$(WattsBase - WattsEE) * Hours / 1000 * (WHFe + IF)$
Savings	ΔkW		$(WattsBase - WattsEE) * Hours / 1000 * WHFd * cdf$
Input	<i>WattsBase</i>	7	Illinois TRM V10 Vol. 3, p. 310
Input	<i>WattsEE</i>	0.33	Program tracking data.
Input	<i>Hours</i>	4380	Illinois TRM V10 Vol. 3, p. 311
Input	<i>WHFe</i>	Varies	Illinois TRM V10 Vol. 3, p. 311
Input	<i>IF</i>	Varies	Illinois TRM V10 Vol. 3, p. 312
Input	<i>WHFd</i>	Varies	Illinois TRM V10 Vol. 3, p. 313
Input	<i>cdf</i>	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		Varies	Illinois TRM 10.0 Vol. 3, p. 310
Inc Cost		0	Cost of measure accounted for by program costs.
Measure Name: A19 LED with Dusk-to-Dawn Sensor			
Savings	ΔkWh		$(WattsBase - WattsEE) * Hours * (WHFe + IF) / 1000$
Savings	ΔkW		$(WattsBase - WattsEE) * Hours * WHFd / 1000 * cdf$
Input	<i>WattsBase</i>	Varies	Illinois TRM V10 Vol. 3, p. 289.
Input	<i>WattsEE</i>	Varies	Program tracking data.
Input	<i>Hours</i>	Varies	Illinois TRM V10 Vol. 3, p. 291.
Input	<i>WHFe</i>	Varies	Illinois TRM V10 Vol. 3, p. 291.
Input	<i>IF</i>	Varies	Illinois TRM V10 Vol. 3, p. 293
Input	<i>WHFd</i>	Varies	Illinois TRM V10 Vol. 3, p. 294
Input	<i>cdf</i>	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		2	Indiana TRM 2023 Workbook, 5.5.6 and 5.5.9, Non-Income Eligible
Inc Cost		0	Cost of measure accounted for by program costs.
Measure Name: Window Insulation Kit			
Savings	ΔkWh		$((kWhper_sf_elec_resistance * \%elec_resistance + kWhper_sf_heat_pump * \%heat_pump) + ((ACFM50 / N_cool * 60 * 24 * CDD * DUA * 0.018) / (1000 * \eta Cool)) * LM * ADJAirSealingCool * \%Cool)) * Window_sf$
Savings	ΔkW		$per_unit_gross_ex_post_kwh_savings * cdf$
Input	<i>kWhper_sf_elec_resistance</i>	3.9	Illinois TRM V10 Vol. 3, p. 327.
Input	<i>kWhper_sf_heat_pump</i>	2	Illinois TRM V10 Vol. 3, p. 327.
Input	<i>%elec_resistance</i>	0.241196	2020 RECS Midwest Census Region data.
Input	<i>%heat_pump</i>	0.0822972	2020 RECS Midwest Census Region data.
Input	<i>ACFM50</i>	0.639	Illinois TRM V10 Vol. 3, p. 329.
Input	<i>N_cool</i>	39.5	Illinois TRM V10 Vol. 3, p. 321.
Input	<i>CDD</i>	820	Illinois TRM V10 Vol. 3, p. 322.
Input	<i>DUA</i>	0.75	Illinois TRM V10 Vol. 3, p. 322.
Input	<i>ηCool</i>	10.5	Illinois TRM V10 Vol. 3, p. 322.

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Input	<i>LM</i>	3.3	Illinois TRM V10 Vol. 3, p. 323.
Input	<i>ADJAirSealingCool</i>	1	Illinois TRM V10 Vol. 3, p. 323.
Input	<i>%Cool</i>	0.52	Indiana TRM 2023 Workbook, 5.6.1.
Input	<i>Window_sf</i>	75	Product characteristics.
Input	<i>cdf</i>	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		1	Illinois TRM 10.0 Vol. 3, p. 320.
Inc Cost		0	Cost of measure accounted for by program costs.
Measure Name: Electrical Outlet & Light Switch Insulation Gasket Kit (8 Outlets, 4 Switches)			
Savings	<i>ΔkWh</i>		$((kWh_{per_gasket_elec_resistance} * \%elec_resistance + kWh_{per_gasket_heat_pump} * \%heat_pump) + ((\Delta CFM50 / N_{cool} * 60 * 24 * CDD * DUA * 0.018) / (1000 * \eta_{Cool})) * LM * ADJAirSealingCool * \%Cool)) * quantity_gaskets_per_pack$
Savings	<i>ΔkW</i>		$per_unit_gross_ex_post_kwh_savings * cdf$
Input	<i>kWhper_gasket_elec_resistance</i>	10.2	Illinois TRM V10 Vol. 3, p. 327.
Input	<i>kWhper_gasket_heat_pump</i>	5.1	Illinois TRM V10 Vol. 3, p. 327.
Input	<i>%elec_resistance</i>	0.241196	2020 RECS Midwest Census Region data.
Input	<i>%heat_pump</i>	0.0822972	2020 RECS Midwest Census Region data.
Input	<i>ΔCFM50</i>	6.491	Illinois TRM V10 Vol. 3, p. 329.
Input	<i>N_cool</i>	39.5	Illinois TRM V10 Vol. 3, p. 321.
Input	<i>CDD</i>	820	Illinois TRM V10 Vol. 3, p. 322.
Input	<i>DUA</i>	0.75	Illinois TRM V10 Vol. 3, p. 322.
Input	<i>ηCool</i>	10.5	Illinois TRM V10 Vol. 3, p. 322.
Input	<i>LM</i>	3.3	Illinois TRM V10 Vol. 3, p. 323.
Input	<i>ADJAirSealingCool</i>	1	Illinois TRM V10 Vol. 3, p. 323.
Input	<i>%Cool</i>	0.52	Indiana TRM 2023 Workbook, 5.6.1.
Input	<i>quantity_gaskets_per_pack</i>	12	Product characteristics.
Input	<i>cdf</i>	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		20	Illinois TRM 10.0 Vol. 3, p. 320.
Inc Cost		0	Cost of measure accounted for by program costs.
Measure Name: Grounded Plug Switch			
Savings	<i>ΔkWh</i>		<i>kWh_savings</i>
Savings	<i>ΔkW</i>		$per_unit_gross_ex_post_kwh_savings * cdf$
Input	<i>kWh_savings</i>	26.850281	Hawaii PY2023 TRM V2.0., p. 297.
Input	<i>cdf</i>	0.0001092	I&M IRP 2023-2025 average coincident peak kW-to-kWh factor.
EUL		5	Hawaii PY2023 TRM V2.0., p. 297.
Inc Cost		0	Cost of measure accounted for by program costs.

7.3.1.3. *Verification and In-Service Rates*

Table 7-4 shows the verification rates for program measures provided through the Home Energy Products Online Marketplace Program.

Table 7-4 Summary of Measure Verification Rates

<i>Measure</i>	<i>Number of Measure Responses</i>	<i>Verification/ In Service Rate</i>	<i>Stratum/Source</i>	<i>Stratum Sample Size</i>
Marketplace Air Purifier	1	100%	Average Online Marketplace Measure Value	6
Marketplace Dehumidifier	1	100%	Average Online Marketplace Measure Value	6
Marketplace Smart Thermostat	2	100%	Average Online Marketplace Measure Value	6
Marketplace Socket	1	100%	Average Online Marketplace Measure Value	6
Marketplace TV	1	100%	Average Online Marketplace Measure Value	6
Marketplace Water Heater	0	100%	Average Online Marketplace Measure Value	6
Marketplace Television	0	100%	Average Online Marketplace Measure Value	6
Marketplace Smart Socket	0	100%	Average Online Marketplace Measure Value	6
Marketplace Advanced Power Strip	0	100%	Average Online Marketplace Measure Value	6
Marketplace Showerhead	0	100%	Average Online Marketplace Measure Value	6
9W A19 LED Duck to Dawn	NA	59%	Illinois Statewide Technical Reference Manual (v10.0) Vol 3, 5.5.8 LED Screw Based Omnidirectional Bulbs, p. 290	NA
Grounded Plug Switch	NA	93%	Illinois Statewide Technical Reference Manual (v12.0) Vol 3 5.2.4 Smart Sockets, p. 100	NA
3W Nightlight	NA	60%	Illinois Statewide Technical Reference Manual (v10.0), Vol 3, 5.5.11 LED Nightlights, p. 311	NA
Outlet/Switch Foam Gasket	NA	60%	Illinois Statewide Technical Reference Manual (v10.0), Vol 3, 5.6.1 Air Sealing, p. 328	NA
Window Insulation	NA	57%	Illinois Statewide Technical Reference Manual (v10.0), Vol 3, 5.6.1 Air Sealing, p. 328	NA

7.3.1.4. *Analysis of Double Counting of Measures*

The Online Marketplace offered air purifiers, which were also included in the Home Energy Products ENERGY STAR® Appliances Program for the first six months of the year before instant rebates for them were discontinued. Orders placed through the marketplace are processed by Best Buy, a participant in the Home Energy Products ENERGY STAR® Appliances Program. Since no procedures were in place to prevent these measures from being counted in both programs, there was a potential risk of double counting energy savings for air purifiers.

To assess this risk, ADM compared the model numbers of air purifiers sold through Best Buy in the Home Energy Products ENERGY STAR® Appliances Program with those discounted through the Online Marketplace Program. ADM identified an overlap in two of the seven air purifier models, representing a potential duplication of two units.

ADM opted not to revise savings estimates following this discovery due to a few key considerations: the uncertainty around whether the identified units were identical, the fact that only a subset of models overlapped between the two listings, and the minimal influence of the Home Energy Products ENERGY STAR® Appliances Program on the overall sales for PY2024, as highlighted by a significant rate of free ridership.

7.3.2. Results of Ex Post Gross Savings Estimation

Table 7-5 summarizes the gross kWh savings of the Home Energy Products Online Marketplace Program by measure. The ex post annual energy savings for the program were 1,136,919 kWh with a realization rate of 152%.

Table 7-5 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>
Marketplace Smart Thermostat	43	12,169	12,169	12,169	14,184	117%
Marketplace Dehumidifier	20	3,036	3,036	3,036	3,033	100%
Marketplace Air Purifier	17	5,253	5,253	5,253	13,147	250%
Marketplace Water Heater	10	19,330	19,330	19,330	0	0%
Marketplace Television	8	730	730	730	569	78%
Marketplace Smart Socket	2	56	56	56	111	198%
Marketplace Advanced Power Strip	3	123	123	123	309	251%
LED Nightlight	15,896	147,499	147,499	88,499	187,018	127%
A19 LED with Dusk-to-Dawn Sensor	15,896	177,772	177,772	104,886	232,030	131%
Window Insulation Kit	3,974	194,941	194,941	111,117	194,931	100%
Electrical Outlet & Light Switch Insulation Gasket Kit (8 Outlets, 4 Switches)	3,974	80,462	80,462	48,277	94,652	118%
Grounded Plug Switch	15,896	106,702	106,702	99,233	396,935	372%
Total	55,739	748,073	748,073	492,708	1,136,919	152%

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

- Marketplace Advanced Power Strip (251%). Ex ante savings assumed 41 kWh per unit compared to 103 kWh per unit in the ex post analysis.
- Marketplace Air Purifiers (250%). Ex ante savings were based on a per unit savings of 309 kWh per unit. Ex post savings were based on the unit’s specifications and averaged 479 kWh per unit.
- Marketplace Water Heater (0%). All of the water heaters had a Uniform Energy Factor (UEF) value equal to that of a standard efficiency water heater (.92).
- Grounded Plug Switch (372%). Ex ante savings estimated a different value for the measure savings than the ex post analysis.

Table 7-6 summarizes the gross peak demand reduction of the Home Energy Products Online Marketplace Program. The gross peak demand reduction for the program was 153.54 kW, with a realization rate of 66%.

Table 7-6 Measure-Level Annual Gross kW Savings

<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>
Marketplace Smart Thermostat	43	0.77	0.77	0.77	1.55	200%
Marketplace Dehumidifier	20	0.69	0.69	0.69	0.33	48%
Marketplace Air Purifier	17	0.61	0.61	0.61	1.44	235%
Marketplace Water Heater	10	0.30	0.30	0.30	-	0%
Marketplace Television	8	0.09	0.09	0.09	0.36	412%
Marketplace Smart Socket	2	-	-	-	0.01	
Marketplace Advanced Power Strip	3	0.02	0.02	0.02	0.03	225%
LED Nightlight	15,896	8.48	8.48	5.09	33.41	394%
A19 LED with Dusk-to-Dawn Sensor	15,896	9.24	9.24	5.45	41.45	449%
Window Insulation Kit	3,974	48.20	48.20	27.48	21.29	44%
Electrical Outlet & Light Switch Insulation Gasket Kit (8 Outlets, 4 Switches)	3,974	41.22	41.22	24.73	10.34	25%
Grounded Plug Switch	15,896	121.37	121.37	112.87	43.34	36%
Total	55,739	230.99	230.99	178.10	153.54	66%

7.3.3. Estimation of Ex Post Net Savings

ADM estimated free ridership and participant spillover through a survey of program participants.

7.3.3.1. Estimation of Free Ridership

7.3.3.1.1. Prior Plans

A score to reflect the presence of prior plans will be 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 you learned about I&M’s Online Marketplace?
- Were you planning to buy the measure before you learned that you could get a rebate or discount through I&M’s Online Marketplace?

Respondents who indicate 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 score of 0. All other respondents were assigned a plans score of 1.

7.3.3.1.2. 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 bought the same measure at about the same time if you could not have received the rebate or discount through the I&M Online Marketplace?

[Rated on a 0 – 10 Scale]

7.3.3.1.3. Timing and Quantity Adjustments

A timing adjustment score was developed based on respondents reporting of when they would have purchased the equipment if they had not purchased the item through the marketplace. Table 7-7 shows how the score will be developed.

Table 7-7 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

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.

12.3.5.1.4. Free Ridership Scoring

ADM calculated an overall project free ridership by combining the scores described above.

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

12.3.5.2. Methodology for Estimating Spillovers

Program participants may implement additional energy saving measures without receiving a program incentive because of their participation 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 like those offered on the marketplace, for which they did not receive a program discount.

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

- SO1: Using the scale below, how important was the experience with the program in your decision to buy the [Measure]?
- SO2: Using the scale below, how likely would you have been to install the [Measure] if you had not participated in the program?

The response to these questions were used to develop a spillover score as follows:

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

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

None of the respondents reported installing measures that qualified as spillover.

12.3.5.3. Methodology for Estimating Non-Participant Spillover

ADM estimated non-participant spillover through a survey of non-participating customers in PY2021. No spillover was identified, and ADM did not apply non-participant savings to the PY2024 net savings estimate.

7.3.4. Results of Ex Post Net Savings Estimation

ADM combined the free ridership results across all measures because of the small sample size. Table 7-8 summarizes the free ridership results.

Table 7-8 Summary of Free Ridership Rates

<i>Measure</i>	<i>Number of Measure Responses</i>	<i>Average Free Ridership</i>	<i>Stratum / Source</i>	<i>Stratum Sample Size</i>
Marketplace Air Purifier	1	36%	Average Online Marketplace Measure Value	6
Marketplace Dehumidifier	1	36%	Average Online Marketplace Measure Value	6
Marketplace Smart Thermostat	2	36%	Average Online Marketplace Measure Value	6
Marketplace Socket	1	36%	Average Online Marketplace Measure Value	6
Marketplace TV	1	36%	Average Online Marketplace Measure Value	6
Marketplace Water Heater	0	36%	Average Online Marketplace Measure Value	6
Marketplace Television	0	36%	Average Online Marketplace Measure Value	6
Marketplace Smart Socket	0	36%	Average Online Marketplace Measure Value	6
Marketplace Advanced Power Strip	0	36%	Average Online Marketplace Measure Value	6
Marketplace Showerhead	0	36%	Average Online Marketplace Measure Value	6
9W A19 LED Duck to Dawn	NA	5%	Literature review value based on non-low income give away efficiency kits	NA
Grounded Plug Switch	NA	5%	Literature review value based on non-low income give away efficiency kits	NA
3W Nightlight	NA	5%	Literature review value based on non-low income give away efficiency kits	NA
Outlet/Switch Foam Gasket	NA	5%	Literature review value based on non-low income give away efficiency kits	NA
Window Insulation	NA	5%	Literature review value based on non-low income give away efficiency kits	NA

Table 7-9 summarizes the ex post annual net kWh and kW savings of the Home Energy Products Online Marketplace Program. The annual net savings totaled 1,067,065 kWh and 144.27 kW.

Table 7-9 Program-Level Annual Net kWh and kW Savings

<i>Category</i>	<i>kWh</i>	<i>kW</i>
Ex Ante Gross Savings	748,073	230.99
Gross Audited Savings	748,073	230.99
Gross Verified Savings	492,708	178.10
Ex Post Gross Savings	1,136,919	153.54
Gross Realization Rate	152%	66%
Ex Post Free Ridership	69,855	9.27
Ex Post Non-Participant Spillover	0	-
Ex Post Participant Spillover	0	-
Ex Post Net Savings	1,067,065	144.27
Net-to-Gross Ratio	94%	94%
Ex Post Net Lifetime Savings	5,913,952	NA

7.4. Process Evaluation

ADM completed a process evaluation of the Home Energy Products Online Marketplace Program. The process evaluation activities consisted of a review of program documentation, interviews and discussions with program staff, and a survey of program participants.

The objectives of the process evaluation were to:

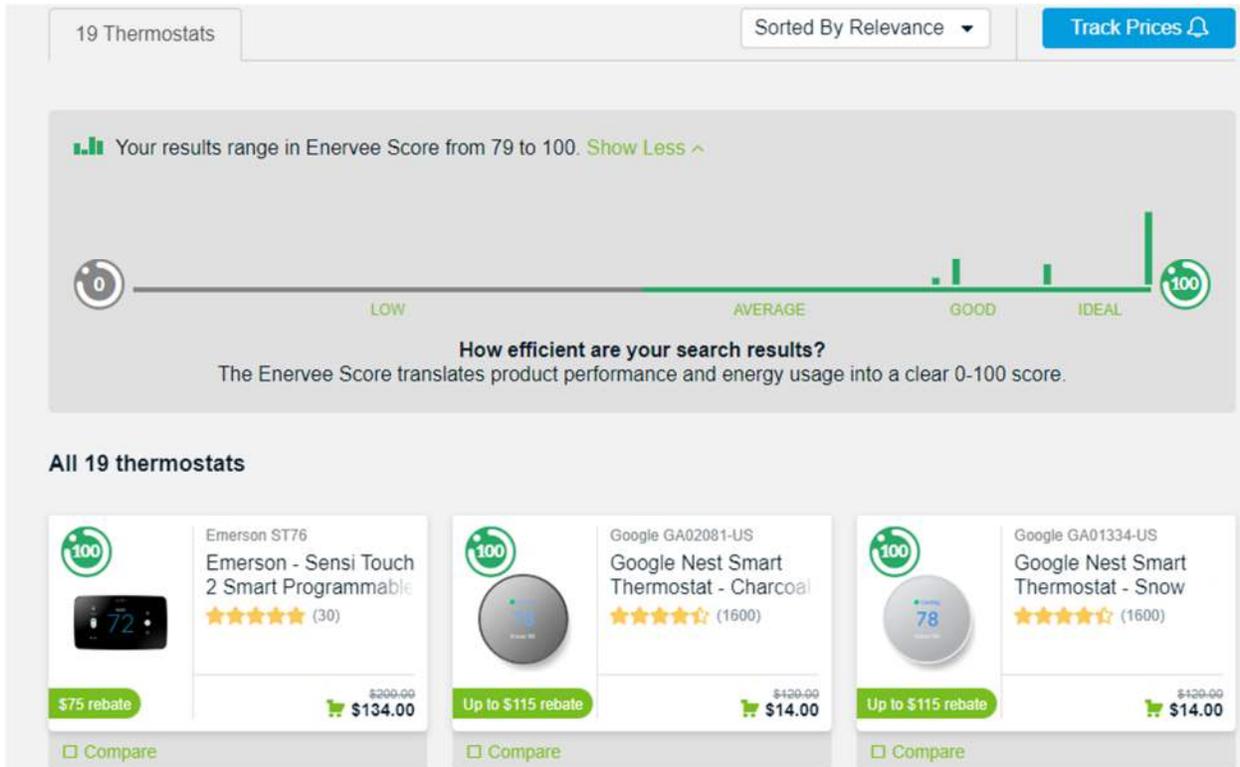
- Understand drivers and motivations for using the online marketplace.
- Understand how the online marketplace influences customer purchase decisions through a survey of program participants.
- Assess what are the motivations for using the online marketplace over other retailers.
- Assess participant satisfaction with the marketplace and their likelihood of recommending it to others.

7.4.1. Program Design and Operations

The Online Marketplace website provides instant discounts and rebates for a selection of efficient products. The program website is designed to influence customers to purchase more energy efficient products. To do this, the website provides an “Enervee Score” for the products viewed. This score is a metric for the products’ energy efficiency, relative to other products of different make and model. The score is a simple metric that uses the products annual kWh and normalizes product characteristics that affect energy use, such as product size and capacity. The score is

presented on a 0-100 scale to allow for easy comparisons. Figure 7-1 shows how the information is presented to a product purchaser. The score is presented on a 0-100 scale to allow for easy comparisons.

Figure 7-1 I&M Online Marketplace



In addition to presenting information on the product’s energy use, the website advertises the available rebates and compares pricing from multiple retailers.

Through the marketplace website, I&M offers instant discounts on select products. The customer receives the instant discount at the time of purchase when they add the product to their cart, complete the information necessary to verify that they are an I&M customer, and complete their purchase.

Rebates are offered for a broader list of products. The customer can use the website to shop for the rebated product and apply for a rebate, or they can purchase the product and apply for a rebate. To receive a rebate, the customer searches for the make and model information to validate the product. The website provides a tool that assists the customer by auto-populating the form with model names as the user types in the information. Once the model is entered, the customer completes a form to verify that they are an I&M customer. Online submissions for rebates are sent directly to I&M’s partner, Enervee, for processing. Rebates submitted online receive an electronic Visa gift card.

I&M has limits set on the number of items that a customer can receive a rebate for. Table 7-10 summarizes the limits for each of the product categories that received rebates in PY2024.

Table 7-10 Measure Rebate Limits

<i>Measure</i>	<i>Limit</i>
Smart / Wi-fi thermostats	2 per account, per lifetime
Air purifiers	3 per account, per lifetime
Dehumidifiers	2 per account, per lifetime
Water heaters	2 per account, per lifetime
ENERGY STAR televisions	4 per account, per lifetime
Water heater	2 per account, per lifetime
Advanced power strips	2 per account, per lifetime
Showerheads	3 units
ENERGY STAR window air conditioners	4 per account, per lifetime

7.4.1.1. Programmatic Changes and Performance

The program made changes to the Online Marketplace incentives in 2024, as summarized in Table 7-11. The incentive changes went into effect on June 12, 20224.

Table 7-11 PY2024 Rebate Changes

<i>Item</i>	<i>Old Rebate</i>	<i>New Rebate</i>
Smart Thermostats	\$75	\$25
Dehumidifiers	\$25	\$15
ENERGY STAR TVs	\$25	\$20
Smart Sockets	\$2	\$3
Water Heaters	\$50	\$75
Air Purifiers	\$30	\$25
Shower Heads	\$7.89	\$10
Advanced Power Strips	\$10 for Tier 1 and \$20 for Tier 2	\$5

The Online Marketplace has faced challenges this year, with overall performance falling short of expectations. Despite increased site traffic and efforts to attract more customers, conversion rates and rebate redemptions remain low. Customers appear to be exploring products without completing purchases or claiming rebates, which suggests a potential issue with the purchasing process or product appeal.

Maintaining and improving the Online Marketplace has encountered some technical challenges, particularly with updating the site. There were delays in implementing changes, with the process

taking longer than initially estimated. Despite these delays, the site remains operational and available.

7.4.1.2. Marketing Efforts and Future Plans

In 2024, marketing efforts have focused on increasing awareness of I&M's energy efficiency initiatives. To support this, I&M partnered with One Lucky Guitar to launch the "Powering the Next" campaign, an initiative designed to enhance public perception through various media channels, including print, digital, outdoor, TV, and radio.

Monitoring traffic and purchasing patterns from email campaigns involves analyzing monthly invoice data. Although marketing emails have been consistent, their effectiveness in driving rebates has varied, with noticeable peaks during key promotional periods like Black Friday. Cross-promotion strategies, such as integrating ads for the Online Marketplace in other program-related emails, have been implemented, though they have yet to significantly impact measure uptake.

7.4.1.3. Data Tracking and Metrics

There have been no changes to program data collection and tracking procedures this year. Data is tracked through a combination of personal spreadsheets and support team processes, which involve consolidating files into the ECP system and ensuring data consistency. The focus remains on verifying that reported numbers match and maintaining accuracy for scorecard evaluations.

Recent metrics reveal notable trends in user engagement and site usage. The most frequently visited product categories include thermostats, power strips, electric water heaters, and refrigerators, with thermostats receiving the highest traffic. Air purifiers and televisions also show significant user interest. This data is tracked through monthly reports, providing insights into product popularity and user behavior.

To enhance the Online Marketplace experience based on observed metrics, adjustments have been made to rebate structures. For instance, the rebate for water heaters was increased from \$50 to \$75 to boost visibility and appeal. Marketing efforts are being refined to better highlight high-traffic products and improve customer engagement.

7.4.2. Participant Survey Findings

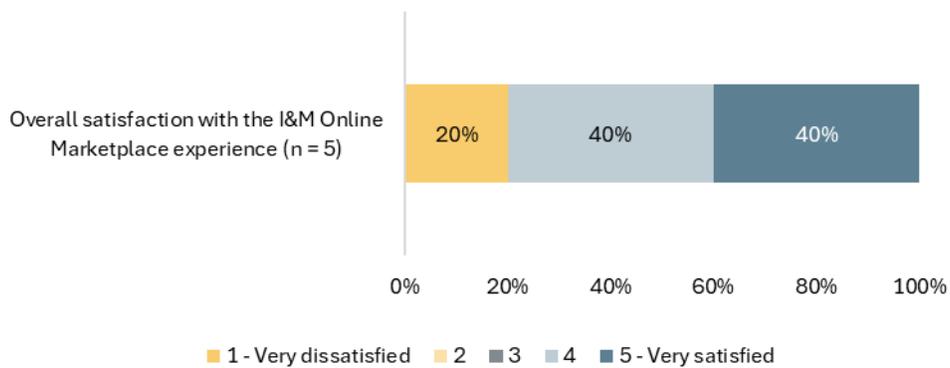
ADM conducted a survey of customers whose households participated in the Online Marketplace program. The survey included questions about their experience with the program, satisfaction with the items purchased, ease of purchasing items through the Online Marketplace, and characteristics of their homes. Because only six responses were provided, we provide a brief summary of the findings.

7.4.2.1. Satisfaction with the Online Marketplace

Most participants found the information on the Online Marketplace purchase receipt to be clear. Specifically, 40% rated the clarity as very clear, 20% as somewhat clear, and 40% as somewhat unclear. Among those who found it unclear, one respondent noted confusion about the rebate amount from I&M, and another questioned the sales tax amount or its calculation.

Overall satisfaction with the I&M Online Marketplace was mixed. Specifically, 40% were very satisfied, 40% were somewhat satisfied, and 20% were very dissatisfied. The primary issue cited for dissatisfaction was receiving the rebate. (see Figure 7-2).

Figure 7-2 Overall Satisfaction with the Online Marketplace



7.5. Findings and Recommendations

The Online Marketplace has faced challenges with low rebate conversions despite increased site traffic. Marketing efforts, including email campaigns and social media promotions, have driven traffic but not significantly increased purchases.

The program rebated water heaters that met the federal minimum efficiency standard. The water heaters rebated through the program had a Uniform Energy Factor (UEF) value equal to that of a standard efficiency water heater (.92).

- **Recommendation 1. Raise the efficiency standard for water heaters or discontinue the incentive.** No electric resistance water heaters are ENERGY STAR certified; all certified electric models are heat pump water heaters.

8. 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 8-1.

Table 8-1 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.				✓		✓		✓

8.1. PY2024 Cost Effectiveness Evaluation

The following tables summarize key financial benefit and cost inputs for the various tests as well as the test results for each residential program during PY2024.

Indiana Residential Portfolio

Table 8-2 Home Online Energy Checkup

Variable	PCT		UCT		RIM		TRC	
	Benefit	Cost	Benefit	Cost	Benefit	Cost	Benefit	Cost
Incentives	\$ -			\$ -		\$ -		
Program Installation Costs				\$ -		\$ -		\$ -
Bill Savings (NPV)	\$ 1,136,324							
Lost Revenue (NPV)						\$ 1,460,682		
Avoided Energy Costs (NPV)			\$ 522,719		\$ 522,719		\$ 522,719	
Avoided Capacity Costs (NPV)			\$ 124,718		\$ 124,718		\$ 124,718	
Avoided T&D Costs (NPV)			\$ 35,777		\$ 35,777		\$ 35,777	
Incremental Costs		\$ -						\$ -
Program Overhead Costs				\$ 448,089		\$ 448,089		\$ 448,089
Total Benefits	\$ 1,136,324		\$ 683,214		\$ 683,214		\$ 683,214	
Total Costs	\$ -		\$ 448,089		\$ 1,908,771		\$ 448,089	
Test Score	N/A		1.52		0.36		1.52	

Table 8-3 AMI Data Portal

Variable	PCT		UCT		RIM		TRC	
	Benefit	Cost	Benefit	Cost	Benefit	Cost	Benefit	Cost
Incentives	\$ -			\$ -		\$ -		
Program Installation Costs				\$ -		\$ -		\$ -
Bill Savings (NPV)	\$ -							
Lost Revenue (NPV)						\$ -		
Avoided Energy Costs (NPV)			\$ -		\$ -		\$ -	
Avoided Capacity Costs (NPV)			\$ -		\$ -		\$ -	
Avoided T&D Costs (NPV)			\$ -		\$ -		\$ -	
Incremental Costs		\$ -						\$ -
Program Overhead Costs				\$ 30,634		\$ 30,634		\$ 30,634
Total Benefits	\$ -		\$ -		\$ -		\$ -	
Total Costs	\$ -		\$ 30,634		\$ 30,634		\$ 30,634	
Test Score	N/A		0.00		0.00		0.00	

Table 8-4 Residential Income Qualified Weatherproofing

Variable	PCT		UCT		RIM		TRC	
	Benefit	Cost	Benefit	Cost	Benefit	Cost	Benefit	Cost
Incentives	\$ 0			\$ 0		\$ 0		
Program Installation Costs				\$ 372,791		\$ 372,791		\$ 372,791
Bill Savings (NPV)	\$ 477,839							
Lost Revenue (NPV)						\$ 586,478		
Avoided Energy Costs (NPV)			\$ 198,572		\$ 198,572		\$ 198,572	
Avoided Capacity Costs (NPV)			\$ 45,096		\$ 45,096		\$ 45,096	
Avoided T&D Costs (NPV)			\$ 14,028		\$ 14,028		\$ 14,028	
Incremental Costs		\$ -						\$ -
Program Overhead Costs				\$ 508,505		\$ 508,505		\$ 508,505
Total Benefits	\$ 477,839		\$ 257,696		\$ 257,696		\$ 257,696	
Total Costs	\$ -		\$ 881,296		\$ 1,467,773		\$ 881,296	
Test Score	N/A		0.29		0.18		0.29	

Table 8-5 Home Energy Products ENERGY STAR® Appliances

Variable	PCT		UCT		RIM		TRC	
	Benefit	Cost	Benefit	Cost	Benefit	Cost	Benefit	Cost
Incentives	\$ 217,875			\$ 217,875		\$ 217,875		
Program Installation Costs				\$ -		\$ -		\$ -
Bill Savings (NPV)	\$ 715,831							
Lost Revenue (NPV)						\$ 1,054,018		
Avoided Energy Costs (NPV)			\$ 382,228		\$ 382,228		\$ 382,228	
Avoided Capacity Costs (NPV)			\$ 89,336		\$ 89,336		\$ 89,336	
Avoided T&D Costs (NPV)			\$ 23,641		\$ 23,641		\$ 23,641	
Incremental Costs		\$ 775,688						\$ 775,688
Program Overhead Costs				\$ 175,516		\$ 175,516		\$ 175,516
Total Benefits	\$ 933,706		\$ 495,206		\$ 495,206		\$ 495,206	
Total Costs	\$ 775,688		\$ 393,391		\$ 1,447,409		\$ 951,205	
Test Score	1.20		1.26		0.34		0.52	

Table 8-6 Home HVAC Midstream

Variable	PCT		UCT		RIM		TRC	
	Benefit	Cost	Benefit	Cost	Benefit	Cost	Benefit	Cost
Incentives	\$ 171,448			\$ 171,448		\$ 171,448		
Program Installation Costs				\$ -		\$ -		\$ -
Bill Savings (NPV)	\$ 137,203							
Lost Revenue (NPV)						\$ 196,223		
Avoided Energy Costs (NPV)			\$ 71,048		\$ 71,048		\$ 71,048	
Avoided Capacity Costs (NPV)			\$ 67,627		\$ 67,627		\$ 67,627	
Avoided T&D Costs (NPV)			\$ 17,909		\$ 17,909		\$ 17,909	
Incremental Costs		\$ 84,580						\$ 84,580
Program Overhead Costs				\$ 265,294		\$ 265,294		\$ 265,294
Total Benefits	\$ 308,651		\$ 156,584		\$ 156,584		\$ 156,584	
Total Costs	\$ 84,580		\$ 436,742		\$ 632,964		\$ 349,873	
Test Score	3.65		0.36		0.25		0.45	

Table 8-7 Home Energy Products Online Marketplace

Variable	PCT		UCT		RIM		TRC	
	Benefit	Cost	Benefit	Cost	Benefit	Cost	Benefit	Cost
Incentives	\$ 6,207			\$ 6,207		\$ 6,207		
Program Installation Costs				\$ -		\$ -		\$ -
Bill Savings (NPV)	\$ 366,919							
Lost Revenue (NPV)						\$ 455,880		
Avoided Energy Costs (NPV)			\$ 154,427		\$ 154,427		\$ 154,427	
Avoided Capacity Costs (NPV)			\$ 43,089		\$ 43,089		\$ 43,089	
Avoided T&D Costs (NPV)			\$ 13,212		\$ 13,212		\$ 13,212	
Incremental Costs		\$ 4,878						\$ 4,878
Program Overhead Costs				\$ 288,290		\$ 288,290		\$ 288,290
Total Benefits	\$ 373,126		\$ 210,728		\$ 210,728		\$ 210,728	
Total Costs	\$ 4,878		\$ 294,496		\$ 750,376		\$ 293,168	
Test Score	76.49		0.72		0.28		0.72	

2024 Indiana Residential Portfolio
EM&V Report
Volume II of II

Prepared for:
Indiana Michigan Power

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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 demand side management programs that I&M implemented in Indiana in 2024.

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 2024 program year. Volume II contains chapters presenting detailed information regarding evaluation methodologies, data collection instruments, and evaluation results. Volume II is organized as follows:

- Chapter 2: Home Online Energy Checkup Participant Survey Instrument
- Chapter 3: AMI Data Portal Survey Instrument
- Chapter 4: Residential Income Qualified Weatherproofing Survey Instruments
- Chapter 5: Home HVAC End-User Survey Instrument
- Chapter 6: Home Energy Products Online Marketplace Participant Survey Instrument
- Chapter 7: Home Online Energy Checkup Participant Survey Results
- Chapter 8: AMI Data Portal Survey Results
- Chapter 9: Residential Income Qualified Weatherproofing Survey Results
- Chapter 10: Home HVAC End-User Survey Results
- Chapter 11: Home Energy Products Online Marketplace Participant Survey Results

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

2 Home Online Energy Checkup Participant Survey Instrument

1. Thank you for taking this survey about your experience with I&M's Online 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

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. Our records indicate that your household participated in I&M's Online Energy Checkup program and received a kit that contained [KIT DESCRIPTION] in the mail. Is that correct?
 1. Yes
 2. No (TERMINATE SURVEY)
 98. Don't know (TERMINATE SURVEY)

[Display Q3 = 2, then Terminate Survey]

3. What is wrong with our information? Please select all that apply.
 1. Did not receive kit
 2. Not aware of participating in the program
 98. Something else (Please explain)

[Display Q4 if Q1 = 1]

4. The Online Energy Checkup includes a survey that asked you questions about your home to help identify ways to save energy. Were you the person that completed the online energy checkup survey?
 1. Yes
 2. No (TERMINATE SURVEY)
 98. Don't know (TERMINATE SURVEY)

5. How did you first learn about I&M's Online Energy Checkup program?

[Randomize Order of 1 – 10]

2. Mailer from I&M
3. I&M Website (www.electricideas.com or indianamichiganpower.com)
4. Friend or Relative (word-of-mouth)
6. I&M Representative
7. I&M Newsletter
8. I&M email
9. Community event

10. Social media (Facebook, Instagram or Twitter)
 11. My I&M account web portal
 12. Other (Please Specify)
 98. Don't know
6. Why did you decide to complete the online energy checkup survey and receive the energy efficiency kit? (Please select all that apply)
1. To learn about ways to save money on energy bill(s)
 2. Environmental reasons
 3. The items were provided free of charge
 4. Other (Please Specify)
 98. Don't know
7. According to our records, you received [KIT_DESC] in your kit. The next few questions are about those items that you received in the kit.

INSTALLATION

Showerhead

[Display Q8 if KIT = ELEC]

8. Is the showerhead currently installed?
1. Yes
 2. No
 98. Don't know

[Display Q9 if Q8 = 2]

9. Do you plan to install the showerhead in the next 6 months?
1. Yes
 2. No
 98. Don't know

[Display Q10 if Q8 = 2]

10. Why have you not installed the showerhead? (Select all that apply) [Multiselect]
1. I did not receive the showerhead
 2. I have not had the time to install it
 3. I am not interested in installing it
 4. I did not need the showerhead
 5. I did not know how to install the showerhead
 6. I need physical assistance or tools to install it

- 7. I don't like low-flow devices
- 8. I gave it away
- 9. I plan on moving or installing it in another location
- 10. Other (Please specify)
- 98. Don't know

Kitchen faucet aerator

[Display Q11 if KIT = ELEC]

11. Is the kitchen faucet aerator currently installed?

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

[Display Q12 if Q11 =2]

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

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

[Display Q13 if Q11 =2]

13. 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 low-flow devices
- 7. I gave it away
- 8. I plan on moving or installing it in another location
- 9. Other (Please specify)
- 98. Don't know

Bathroom faucet aerator

[Display Q14 if KIT = ELEC]

14. How many of the two bathroom faucet aerators are currently installed?

- 0. 0
- 1. 1

- 2. 2
- 98. Don't know

[Display Q15 if Q14 = 0, 1]

15. You said that you have not installed [2 - Q14 RESPONSE] bathroom faucet aerator(s). How many of those do you think you will install in the next 6 months?

- 0. [Display if Q14 = 0 OR 1] 0
- 1. [Display if Q14 = 0 OR 1] 1
- 2. [Display if Q14 = 0] 2
- 98. Don't know

[Display Q16 if Q14 = 0, 1]

16. 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. I don't like low-flow devices
- 8. I gave one or both away
- 9. I plan on moving or installing them in another location
- 10. Other (Please specify)
- 98. Don't know

Nightlight

[Display Q17 if KIT = ELEC]

17. Is the LED night light currently installed?

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

[Display Q18 if Q17= 0, 1]

18. Do you plan to install the LED night light in the next 6 months?

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

[If Q17 = 1, set LED_Install to "Did the", if Q18 = 1, set LED_Install to "Will the"]

[Display Q19 if Q17 = 0,1]

19. Why have you not installed the LED night light? (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 don't like it
5. I didn't need it
6. I gave it away
6. Other (Please specify)
98. Don't know

[Display Q20 if Q17 = 1 or Q18 = 1]

20. [LED_Install] night light replace a different night light or plug into an unused outlet?

1. Replace a night light
2. Plug into an unused outlet
98. Don't know

Advanced Power Strips

[Display Q21 if Kit = GAS]

21. Is the advanced power strip currently installed?

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

[Display Q22 if Q21 = 2]

22. Do you plan to install the power strip in the next 6 months?

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

[Display Q23 if Q21 = 2]

23. Why have you not installed the power strip? (Select all that apply)

[Multiselect]

1. The power turned off while I was using equipment that was plugged into it

2. Not interested in it
3. Damaged/didn't work right
4. I did not know how to use it
5. For another reason (Please describe)

[If Q21= 1 or Q22=1, set APS_Install to "do you have plugged", if Q22= 1, set APS_Install to "will you plug"]

24. What kind of equipment [APS_Install] into the advanced power strip?

1. Audio/visual/entertainment equipment
2. Computer/office equipment
3. Other types of equipment

[Display if Q24 = 3]

25. What other types of equipment are plugged into the advanced power strip?

FREE RIDERSHIP

26. Thinking back to before you completed the Online Energy Checkup, had you purchased any of the following items in the last three years?

[Scale: 1 = Yes, 2 = No, 98 = Don't know]

- a. [Display if KIT = ELEC] Bathroom faucet aerators
- b. [Display if KIT = ELEC] Kitchen faucet aerator
- c. [Display if KIT = ELEC] High efficiency showerheads
- d. [Display if KIT = ELEC] LED night lights
- e. [Display if KIT = GAS] Advance power strips

[Display if KIT = ELEC]

27. Before you heard of the Online Energy Checkup Program, did you have specific plans to buy any of the kit items ([KIT_DESC]) that were sent to you?

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

[Display Q28 if Q27 = 1 and KIT = ELEC]

28. For each of the following items, please indicate if you had plans to buy the item before you heard of the Online Energy Checkup Program.

[Scale: 1 = Yes, 2 = No, 98 = Don't know]

- a. Bathroom faucet aerators

- b. Kitchen faucet aerator
- c. High efficiency showerheads
- d. LED night lights

[Display if KIT = GAS]

29. Before you heard of the Online Energy Checkup Program, did you have specific plans to buy an advanced power strip?

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

[Display Q30 if Q28A = 1]

30. How many of the two bathroom faucet aerators that you received did you plan to buy?

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

31. Using a scale where 0 means "not at all likely" and 10 means "very likely", if you had not completed the Online Energy Checkup or received the energy conservation kit, how likely would you have been to buy any of the following items on your own within 12 months of when you received them?

[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 (Very likely)]

- a. [Display if KIT = ELEC] Bathroom faucet aerators
- b. [Display if KIT = ELEC] Kitchen faucet aerator
- c. [Display if KIT = ELEC] High efficiency showerheads
- d. [Display if KIT = ELEC] LED night lights
- e. [Display if KIT = GAS] Advance power strips

[Display Q32 if any in Q31A-E > 0]

32. Based on your response, there is some likelihood that you would have bought some of the kit items in the next 12 months. Given that, we would like to know why you had not already bought the items on your own. [Multiselect]

Had you not already bought the kit items because: (Please select all that apply)

- 1. You didn't want to spend the money
- 2. You had not gotten around to buying the items

3. You didn't know where to buy the items
4. You didn't know enough about the items
5. For other reasons
98. Don't know

[Display Q33 if Q32 = 5]

33. What were those other reasons for why you had not previously bought the items?

AUDIT TOOL

[Display Section if Q4 = 1]

34. The next few questions are about your experience with the online energy checkup survey.

35. Using a scale where 1 means "very difficult" and 5 means "very easy", how easy or difficult was it to complete the online checkup?

[Scale: 1 = 1 (Very difficult), 2 = 2, 3 = 3, 4 = 4, 5 = 5 (Very easy)]

[Display Q36 if Q35 < 3]

36. What difficulty did you have completing the online checkup? (Select all that apply)

[Multiselect]

1. Signing on
2. Not familiar with computers/technology
3. The survey would not load
4. The screen froze up
5. Received some type of error message that prevented completion of the survey
6. Couldn't answer some questions
7. Other (Please specify)
98. Don't know

37. How much did the online checkup increase your knowledge of how to save energy in your home?

[Scale: 1 = 1 (Not at all), 2 = 2, 3 = 3, 4 = 4, 5 = 5 (A great deal)]

SPILLOVER SECTION

38. We would like to know if you have installed any additional energy efficient equipment because of your experience with the program that you DID NOT receive an incentive or rebate for.

Since participating in the [program_name] program, have you installed any ADDITIONAL energy efficient items in a household in I&M's service territory without receiving an incentive or rebate?

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

[Display if Q38 = 1]

39. We would like to know what you purchased and installed because of your experience with the program that you did not get a rebate or discount for.

Since participating in the program in [YEAR] have you done any of the following?

[Multiselect]

1. Purchased and installed an ENERGY STAR[®] appliance such as refrigerator, dishwasher, clothes washer, or clothes dryer
2. Purchased and installed water heater pipe insulation
3. Purchased and installed water heater jacket, blanket, or insulation
4. Purchased and installed low flow faucet aerators
5. Purchased and installed low flow showerheads
6. Purchased and installed an ENERGY STAR[®] room air conditioner
7. Purchased and installed an energy efficient water heater, tankless water heater, or heat pump water heater
8. Purchased and installed a smart thermostat
9. Purchased and installed a high efficiency heating or cooling equipment
10. Insulated your attic or walls
11. Air sealing (e.g., attic sealing, door seals, foam insulation, or door sweeps)
12. Purchased and installed energy saving advanced power strips
13. Purchased and installed an ENERGY STAR[®] pool pump
14. Purchased and installed an ENERGY STAR[®] air purifier
15. Purchased and installed an ENERGY STAR[®] dehumidifier
16. Something else
17. None of the above [Exclusive, Skip to end of block]

[Display Q40 if Q38 = 1]

40. Why did you not get an I&M incentive rebate or discount for that energy saving equipment?

1. Did not know an incentive, rebate or discount was available
2. Did not want to complete an application
3. The application paperwork was too long or complicated
4. I planned to but forgot
5. Some other reason (please describe)
6. I did get an incentive [Skip to end of the block]
7. Don't know

[Display if Q39 = 1]

41. What kind of appliance did you purchase?

[Multiselect]

1. Refrigerator
2. Freezer
3. Dishwasher
4. Clothes washer
5. Clothes dryer – Electric
6. Clothes dryer – Gas
7. Other (Please describe)
98. Don't know

[Display if Q39 = 1]

42. Does the appliance have an ENERGY STAR label?

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

[Display if Q39 = 4]

43. How many low flow faucet aerators did you install in bathroom sinks?

[Display if Q39 = 4]

44. How many low flow faucet aerators did you install in kitchen sinks?

[Display if Q39 = 5]

45. How many low flow shower heads did you install?

[Display if Q39 = 6]

46. How many ENERGY STAR[®] room air conditioners did you install?

[Display if Q39 = 7]

47. How do you know that the water heater you installed is an energy efficient water heater?

[Display if Q39 = 7]

48. 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 Q39 = 8]

49. 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 = 8]

50. Does the thermostat control your heating system, cooling system, or both?

1. Heating system
2. Cooling system
3. Both

[Display if Q50 = 1 OR 3]

51. Do you have an electric heating system?

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

[Display if Q51 = 1]

52. Is your heating system a heat pump?

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

[Display if Q39 = 9]

53. What type of heating or cooling equipment did you install?

1. Energy-efficient central air conditioner
2. Energy-efficient air source heat pump
3. Energy-efficient ground source heat pump
4. Energy-efficient ductless mini-split heat pump

5. Something else (please describe)

[Display if Q53 = 1]

54. What is the efficiency rating of the HVAC unit you purchased?

1. SEER: [NUMERIC; OPEN-ENDED]
2. EER: [NUMERIC; OPEN-ENDED]
98. Not sure

[Display if Q39 = 10]

55. What is the R-value of the insulation you installed?

[Display if Q39 = 10]

56. Where did you install the new insulation?

[Multiselect]

1. Attic
2. Walls
98. Don't know

[Display if Q56 = 1]

57. Approximately what size (in square feet) is the attic where the insulation is installed?

1. Square feet: [NUMERIC; OPEN-ENDED]
98. Not sure

[Display if Q39 = 11]

58. What type of weatherization products did you purchase and install?

1. Door seals
2. Spray foam insulation
3. Door sweeps
4. Something else (please describe)

[Display if Q58 = 1 – 4, and loop and merge]

59. How many [Q58 RESPONSE] did you purchase and install?

[Display if Q39 = 12]

60. How many energy saving advanced power strips did you purchase and install?

1. 1
2. 2
3. 3 or more

[Display if Q39 = 14]

61. How many ENERGY STAR® air purifiers did you install?

[Display if Q39 = 15]

62. How many ENERGY STAR® dehumidifiers did you install?

[Display if Q39 = 17]

63. What other energy efficient items did you install?

[Loop and merge section for Q39 = 1 – 15, skip if did not install anything]

64. In approximately what month and year did you install the [Q39 response] that you did not receive an incentive for?

65. Using the scale below, how important was the experience with the program in your decision to install the [Q39 response]?

[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]

66. Using the scale below, how likely would you have been to install the [Q39 response] if you had not participated in the 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]

SATISFACTION

67. 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 online energy checkup service, overall
- b. The information provided by the online energy checkup
- c. [Display if KIT = GAS] The advanced power strip
- d. [Display if KIT = ELEC] The kitchen aerator
- e. [Display if KIT = ELEC] The bathroom aerators

- f. [Display if KIT = ELEC] The showerhead
- g. [Display if KIT = ELEC] The night light

[Display Q68 if ANY IN Q67 < 3]

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

69. Given your experience with the Online Checkup program, how likely are you to recommend it to your friends or family?

[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)]

70. Why did you give it that rating?

71. 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)]

DEMOGRAPHICS/HOME CHARACTERISTICS

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

73. Do you own the home that you completed the online energy checkup 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

74. 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

75. 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

76. What is the approximate square footage of your home? Your best estimate is fine.

[TEXT BOX]

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

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

78. What fuel does your main water heater use?

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

79. 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

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

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

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

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

82. 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

3 AMI Data Portal Survey Instrument

Screening

1. I&M provides Energy Management Tools that you can access by logging onto your IndianaMichiganPower.com account. These tools provide information on trends in your electricity usage and energy use compared to similar homes.

Have you ever accessed your account to view your energy management tools online?

1. Yes, I have accessed it.
2. No, I have not accessed it. [Skip to Q14 if WAMI = 1, else Skip to Demographics]
98. I don't remember if I have accessed it. [Skip to Q14 if WAMI = 1, else Skip to Demographics]



Engagement with Service

2. The next few questions are about different parts of the web portal you may have used.

The Bill Forecast feature is designed to help you anticipate and manage your future energy bills by providing information on your current usage or costs to date, projecting your usage or costs for your electricity bill, and comparing these with your typical usage or costs for the same period based on historical data.



Have you used the Bill Forecast feature on the portal?

1. Yes
2. No
98. I'm not sure / I don't remember

[Display if Q0 = 1]

3. How useful did you find the Bill Forecast feature?
1. Very useful
 2. Useful
 3. A little useful
 4. Not useful
 99. I encountered technical issues or found it difficult to use

[Display if Q0 = 2]

4. Why have you not used the Bill Forecast feature? (Select all that apply)
1. I was not aware of it
 2. It seemed too complicated to use
 3. I didn't think it would be useful to me
 4. I tried to use it but encountered technical difficulties
 5. Other (Please specify)

The Data Browser allows you to explore and understand your energy use patterns over time. It enables you to view your energy consumption alongside comparisons to weather conditions, neighbors' usage, and your own past usage. This feature offers the ability to analyze your electricity data for different time periods. Have you used the Data Browser feature on the portal?

5.



1. Yes
2. No
98. I'm not sure / I don't remember

[Display if Q0 = 1]

6. How useful did you find the Data Browser feature?

- 1. Very useful
- 2. Useful
- 3. A little useful
- 4. Not useful
- 99. I encountered technical issues or found it difficult to use

[Display if Q0 = 2]

7. Why have you not used the Data Browser feature? (Select all that apply)

- 1. I was not aware of it
- 2. It seemed too complicated to use
- 3. I didn't think it would be useful to me
- 4. I tried to use it but encountered technical difficulties
- 5. Other (Please specify)

8. Bill Comparison provides a way to compare your current bill with previous ones, offering personalized explanations for any changes and recommendations to help manage your energy costs.



- 1. Yes
- 2. No
- 98. I'm not sure / I don't remember

[Display if Q8 = 1]

9. How useful did you find the Bill Comparison feature?

- 1. Very useful
- 2. Useful

- 3. A little useful
- 4. Not useful
- 99. I encountered technical issues or found it difficult to use

[Display if Q8 = 2]

10. Why have you not used the Ways to Save feature? (Select all that apply)

- 1. I was not aware of it
- 2. It seemed too complicated to use
- 3. I didn't think it would be useful to me
- 4. I tried to use it but encountered technical difficulties
- 5. Other (Please specify)

11. The Ways to Save offers suggestions on how to reduce your energy consumption and lower your bills. Each tip includes an estimated savings amount and is personalized for you.
Have you viewed the Ways to Save feature on the portal?

- 1. Yes
- 2. No
- 98. I'm not sure / I don't remember

[Display if Q11 = 1]

12. How useful did you find the Ways to Save feature?

- 1. Very useful
- 2. Useful
- 3. A little useful
- 4. Not useful
- 99. I encountered technical issues or found it difficult to use

[Display if Q11 = 2]

13. Why have you not used the Ways to Save feature? (Select all that apply)

- 1. I was not aware of it
- 2. It seemed too complicated to use
- 3. I didn't think it would be useful to me
- 4. I tried to use it but encountered technical difficulties
- 5. Other (Please specify)

[Display if WAMI = 1]

14. The program provides a weekly report on your home that features insights into your energy usage every week, comparing your current week's usage with the previous one and highlighting long-term trends.

Do you recall seeing the weekly report?

1. Yes
2. No

15. How often do you review the weekly report?

1. Every week
2. Most weeks
3. Occasionally
4. Rarely
5. Never

Energy Actions Taken

16. Have you done anything to change your use of electricity because of the information on your energy use?

1. Yes
2. No

[Display if Q16= 1]

17. Did you do anything to change your energy use during specific times of the day or just in general?

1. During certain times of the day
2. In general
3. Both during certain times of the day and in general

[Display if Q17 = 1 or 3]

18. What time of day were you trying to reduce your energy use? (Select all that apply)

[Multiselect]

1. Morning
2. Midday
3. Afternoon
4. Evening
5. Nights

[Display if Q16= 1]

19. Could you briefly describe the actions you took to reduce its energy use?

Satisfaction

20. Given your experience with the Energy Management Tools, how likely are you to recommend them to your friends or family?

[SCALE: 0 = 0 (Not at all likely) 1, 2 = 2, 3 = 3, 4 = 4, 5 = 5 6 = 6, 7 = 7, 8 = 8, 9= 9, 10 = 10 (Extremely likely)]

21. Why do you give it that rating?

22. For each of the following, please state how much you agree or disagree.

- a) The energy tools help me understand how much electricity you use
- b) The energy tools help me understand how my electricity use changes
- c) The energy tools help me understand how much electricity I use at different times of day and days of the week
- d) The energy tools help me understand how I can save electricity
- e) The energy tools have helped me reduce my electricity use

23. Do you have any suggestions for improving the energy tools that I&M provides?

Demographics / Home Characteristics

24. The next questions are about this residence. These are confidential and will be used solely for combining different customers' responses. It is okay to not answer any of these questions.

25. Which of the following best describes the property located at [Address]?

- 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. I prefer not to state

26. Do you own, rent, or own and rent to someone else the property that has access to the smart meter insight tools?

- 1. Own
- 2. Rent
- 99. I prefer not to state

27. Is this residence...

- 1. Your primary residence
- 2. A residence that you rent to someone else
- 3. A vacation property that is not occupied year-round
- 4. Something else

28. 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. Don't know/Prefer not to state

29. What fuel does your main water heater use?

1. Electricity
2. Natural Gas
3. Propane
4. Something else
5. Don't heat water in home
99. Don't know/Prefer not to state

30. What is the fuel source for your clothes dryer?

1. Natural gas
2. Electricity
3. Propane
4. Other
5. I don't have a clothes dryer
99. Don't know/Prefer not to state

31. Do you have a Wi-Fi connect smart thermostat?

1. Yes
2. No
99. Don't know/Prefer not to state

32. 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. I prefer not to state

33. 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. I prefer not to state

4 Residential Income Qualified Weatherproofing Survey Instruments

4.1 Virtual Kit Participant 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. Our records indicate that your household received a kit of energy saving items from I&M. Is that correct?
 1. Yes
 2. No (TERMINATE SURVEY)
 98. Don't know (TERMINATE SURVEY)

[Display if Q2 = 1]

3. Did you or anyone in your household take part in a virtual home energy checkup through the program?
 1. Yes
 2. No
 98. Don't know

[Display if Q3 = 1]

4. How did you first learn about I&M's Income Qualified Home Energy Checkup program?

[Randomize 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

[Display if Q3 = 1]

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)

[Display if Q3 = 1]

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?

Kit Installation

[Display Q8 , Q9, and Q10 on the same page]

[Display if KIT = GAS]

8. [Display if STATE = IN] Our records say that you received a kit of energy saving items from I&M. This kit included: LED light bulbs, advanced power strips, and night lights.
[Display if STATE = MI] Our records say that you received a kit of energy saving items from I&M. This kit included: LED light bulbs, a 3-way LED bulb, an advanced power strip, and night lights.

[Display if KIT = ELEC]

9. [Display if STATE = IN] Our records say that you received a kit of energy saving items from I&M. This kit included: LED light bulbs, an advanced power strip, a high efficiency showerhead, a kitchen faucet aerator, a bathroom faucet aerator, and night lights.
[Display if STATE = MI] Our records say that you received a kit of energy saving items from I&M. This kit included: LED light bulbs, advanced power strips, a high efficiency showerhead, a kitchen faucet aerator, a bathroom faucet aerator, 3-way LED bulb, and night lights.

[Display Q8 , Q9, and Q10 on the same page]

10. Did you receive that kit from I&M?
1. Yes
 2. No [Skip to next section]
 98. Not sure [Skip to next section]
11. 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 Q12 if Q11 = 1 - 8]

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

[Multiselect]

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

[Display Q13 if Q12 = 1]

13. How many CFLs did the new LED light bulbs replace?

[Display Q13 if Q12 = 2]

14. How many incandescent/halogen light bulbs did the new LED light bulbs replace?

[Display Q14 if Q12 = 3]

15. How many LED light bulbs did the new LED light bulbs replace?

[Display Q16 if Q11 = 0 - 7]

16. You indicated that you have not installed [8- Q11 RESPONSE] LED bulb(s). How many of those do you think you will install in the next 6 months?

- 0. 0 [Display if Q11 = 0, 1, 2, 3, 4, 5, 6, 7]
- 1. 1 [Display if Q11 = 0, 1, 2, 3, 4, 5, 6, 7]
- 2. 2 [Display if Q11 = 0, 1, 2, 3, 4, 5,6]
- 3. 3 [Display if Q11 = 0, 1, 2, 3, 4,5]
- 4. 4 [Display if Q11 = 0, 1, 2, 3,4]
- 5. 5 [Display if Q11 = 0, 1, 2,3]
- 6. 6 [Display if Q11 = 0,1,2]
- 7. 7 [Display if Q11 = 0,1]
- 8. 8 [Display if Q11 = 0]
- 98. Don't know

[Display Q17 if Q11 = 0, 1, 2, 3, 4, 5, 6, OR 7]

17. 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

18. 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

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

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

[Display Q20 if Q19 = 2]

20. 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 Q21 if Q19 =2]

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

1. Yes
2. No

[if Q19 = 1 , SET APS USE TO

"is plugged into",

if Q21 =1, SET APS USE TO,

"will you plug into"]

[Display if Q19 = 1 OR Q21 =1]

22. What kind of equipment [APS_USE] the advanced power strip?

[Multiselect]

1. Audio/visual/entertainment equipment
2. Computer/office equipment
3. Other types of equipment

[Display if Q22 = 3]

23. What other types of equipment are plugged into the advanced power strip?

[Display Q24 thru Q26 if STATE = MI]

24. Is the 3-way LED bulb currently installed?

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

[Display Q25 if Q24 = 1]

25. Do you plan to install the 3-way LED bulb in the next 6 months?

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

[Display Q26 if Q24 = 1]

26. Why have you not installed the 3-way bulb? (Select all that apply)

[Multiselect]

1. I did not receive the 3-way bulb
2. I have not had the time to install it
3. I am not interested in installing it
4. I am waiting for light bulbs to burn out before replacing them
5. I don't like them
8. Other (Please specify)
98. Don't know

[Display Q27 if KIT = ELEC]

27. Is the showerhead currently installed?

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

[Display Q28 if Q27 = 1]

28. Do you plan to install the showerhead in the next 6 months?

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

[Display Q29 if Q27 = 1]

29. Why have you not installed the showerhead? (Select all that apply)

[Multiselect]

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

[Display Q30 if KIT = ELEC]

30. Is the kitchen faucet aerator currently installed?

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

[Display Q31 if Q30 =2]

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

1. Yes
2. No

[Display Q32 if Q30 =2]

32. 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 Q33 if KIT = ELEC]

33. Is the bathroom faucet aerator currently installed?

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

[Display Q34 if Q33 = 1]

34. Do you plan to install the bathroom faucet aerator in the next 6 months?

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

[Display Q35 if Q33 = 1]

35. Why have you not installed the bathroom 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 don't like it
5. I did not know how to install it
6. I need physical assistance or tools to install it
7. Other (Please specify)
98. Don't know

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

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

[Display Q37 if Q36= 0, 1]

37. You indicated that you have not installed [2 - Q36 RESPONSE] LED night light(s). How many of those do you think you will install in the next 6 months?

0. [Display if Q27 = 0 OR 1] 0
1. [Display if Q27 = 0 OR 1] 1
2. [Display if Q27 = 0] 2
98. Don't know

[Display Q38 if Q36 = 0,1]

38. 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 Q39 if Q36 = 1 or 2]

39. 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 Q36 = 2] Replaced one night light and installed the other in an empty socket
98. Don't know

[Display Q40 if Q36 = 2]

40. 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 Q41 if Q37 = 1 or 2]

41. When you install the night light(s) you haven't already installed, will you...

1. Replace another night light
2. Install in an empty socket
3. [Display if Q37 = 2] Replace one night light and install the other in an empty socket
98. Don't know

Experience with virtual audit

[Display section of Q3 = 1]

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

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

[Display Q43 if Q42 = 1]

43. 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 q44 if q42 = 1]

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

1. Yes
2. No

[Display Q45 if Q44 = 1]

45. What energy saving tips do you recall?

[Display Q46 if Q42 = 1]

46. 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 Q47 if Q46= 1, 2, or 3]

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

Participant satisfaction

[Display section of Q3 = 1]

48. 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. [Display if Q10 = 1] The kit items that you received

[Display Q49 if ANY IN Q48 < 3]

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

[TEXT BOX]

50. 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)]

51. Given your experience with the energy checkup service, how likely are you to recommend it to your friends or family?

[SCALE: 0 = 0 (Not at all likely) 1, 2 = 2, 3 = 3, 4 = 4, 5 = 5 6 = 6, 7 = 7, 8 = 8, 9 = 9, 10 = 10 (Extremely likely)]

52. Why do you give it that rating?

Demographics/Home characteristics

53. 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.

54. 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

55. 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

56. 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

57. 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

58. 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

59. 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

60. 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

61. 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

62. 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

4.2 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. Did a program representative come to your home to complete a home energy checkup?
 1. Yes
 2. No
 98. Not sure

[Display if Q3= 1]

4. 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]

5. 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]

6. 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]

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

[Display if Q3= 1]

8. 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]

9. 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 Q9 statement < 3]

10. Why were you dissatisfied with [PIPED RESPONSES < 3]?
11. 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 Q12 if Q11= 1]

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

[Display Q13 if Q12 = 1]

13. 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 Q14 if Q13 = 1]

14. Which energy saving tips have you implemented?

[Display if Q3= 1 OR 2]

15. 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 MA]MEAS_COUNT > 0]

16. 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
- d) [Display if INSULATION= 1] Insulation

[Display if any in Q16= 1]

17. 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 Q17= 1-5]

18. You said it took [PIPED Q17 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 Verification [Display if di_meas = 1]

19. 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 Q20 if Q19A = 2]

20. How many LED light bulbs did you receive?

[Display Q21 if Q19B = 2]

21. How many energy and water efficient bathroom faucet aerators did you receive?

[Display Q22 if Q19C = 2]

22. How many energy and water efficient kitchen faucet aerators did you receive?

[Display Q23 if Q19D = 2]

23. How many energy and water efficient showerheads did you receive?

[Display Q23 if Q19D = 2]

24. How many advanced power strips did you receive?

[Display Q23 if Q19D = 2]

25. How many nightlights did you receive?

[Set variables: If verified (Q19 = 1), set to tracked quantity, else set to value provided in response.]

LED_INSTALLED

BATH_INSTALLED

KITCHEN_INSTALLED

SHOWER_INSTALLED

APS_INSTALLED

NIGHTLIGHT_INSTALLED]

[Display if any of the following > 0:

LED_INSTALLED

BATH_INSTALLED

KITCHEN_INSTALLED

SHOWER_INSTALLED

APS_INSTALLED

NIGHTLIGHT_INSTALLED]

26. Did a program representative install the energy savings items that you received or leave them with you to install yourself?

[Scale: 1 = Installed, 2 = Left them for me to install]

- a) [LED_INSTALLED >0] LED Lightbulbs
- b) [BATH_INSTALLED >0] Bathroom faucet aerators
- c) [KITCHEN_INSTALLED >0] Kitchen faucet aerators
- d) [SHOWER_INSTALLED >0] Showerheads
- e) [APS_INSTALLED >0] Advanced power strips
- f) [NIGHTLIGHT_INSTALLED >0] Nightlights

Nightlights and APS Verification

[Display if NIGHTLIGHT_INSTALLED > 0]

27. Are you currently using all the [NIGHTLIGHT_INSTALLED] nightlights that you received?

1. Yes
2. No (How many are you using?)

[Display if Q27 = 1 or Q27 = 2 and currently installed count >0]

28. How many of the nightlights that you are currently using replaced an existing nightlight?

[Display if APS_INSTALLED > 0]

29. Are you currently using the advanced power strip? How many of the [APS_INSTALLED] advanced power strips that you received are you currently using?

0. 0 (Not using any power strips)
1. 1
2. [Display if APS_INSTALLED > 1] 2
3. [Display if APS_INSTALLED > 2] 3
4. [Display if APS_INSTALLED > 3] 4
5. [Display if APS_INSTALLED > 4] 5
98. Not sure

[Display if Q29 > 0]

30. For each of the advanced power strips that you are currently using, please tell us what type of equipment is plugged into the power strip.

[Scale: 1 = Audio/visual/entertainment equipment, 2 = Computer/office equipment, 3 = Other types of equipment]

- a) [Display if Q29 > 0] Advanced power strip 1
- b) [Display if Q29 > 1] Advanced power strip 2
- c) [Display if Q29 > 2] Advanced power strip 3
- d) [Display if Q29 > 3] Advanced power strip 4
- e) [Display if Q29 > 4] Advanced power strip 5

[Display if any in Q30 = 3]

31. What other types of equipment are plugged into the advanced power strip?

[Display if APS_INSTALLED > 0]

32. 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 Q32 = 1]

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

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

LED

[Display section if LED_INSTALLED > 0]

34. Are all the [LED_INSTALLED] LED bulbs that you received currently installed in a lamp?

1. Yes
2. No

[Display Q35 if Q34= 1]

35. How many of the [LED_INSTALLED] LED bulbs are currently installed?

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

[Multiselect]

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

[Display Q37 if Q34 = 1]

37. How many CFLs did the new LED light bulbs replace?

[Display Q37 if Q34 = 2]

38. How many incandescent/halogen light bulbs did the new LED light bulbs replace?

[Display Q38 if Q34 = 3]

39. How many LED light bulbs did the new LED light bulbs replace?

Low-Flow Devices

[Display if BATH_INSTALLED > 0]

40. Are all the [BATH_INSTALLED] bathroom faucet aerators that you received currently installed in your home?

1. Yes
2. No

[Display if Q40 =2]

41. How many of the [BATH_INSTALLED] bathroom faucet aerators are currently installed in your home?

[Display if KITCHEN_INSTALLED > 0]

42. Are all the [KITCHEN_INSTALLED] kitchen aerators that you received currently installed in your home?

1. Yes
2. No (How many are currently installed?)

[Display if Q42 =2]

43. How many of the [KITCHEN_INSTALLED] kitchen faucet aerators are currently installed in your home?

[Display if SHOWER_INSTALLED > 0]

44. Are all the [SHOWER_INSTALLED] low-flow showerheads that you received currently installed in your home?

1. Yes
2. No (How many are currently installed?)

[Display if Q44 = 2]

45. How many of the [SHOWER_INSTALLED] are currently installed in your home?

Program Satisfaction

46. 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 Q47 if ANY IN Q46 < 3]

47. Why are you dissatisfied with the following aspects of the program?

48. 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), 2 = 2, 3 = 3, 4 = 4, 5 = 5 (Very satisfied)]

5. 5
6. 6
7. 7
8. 8 or more
98. Prefer not to answer

56. 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

57. 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

58. 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

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

1. Yes
2. No

5 Home HVAC Midstream End-User Survey

Introduction

4. Just to confirm, did you install a new [EQUIPMENT_TYPE] in 2023 at your home located at?
1. Yes
 2. No

[Display if Q4 = 2]

5. What is incorrect about the information we have?
1. You installed new heating equipment but it was not a [EQUIPMENT_TYPE]
 2. You installed [EQUIPMENT_TYPE] but not at that location
 3. You did not install any new heating or cooling equipment in 2023

If Q5 = 3, Terminate Survey]

[Display if Q5 = 1]

6. What type of equipment did you install?

[Display if Q5 = 2]

7. Is the location where the equipment is installed a home or a business?
1. Home
 2. Business
 3. Other (Please explain)

[Display if Q5 = 2]

8. Does the location receive electricity service from Indiana-Michigan Power (I&M)?
1. Yes
 2. No
 98. Not sure

Program Influence

9. Did you know that the [EQUIPMENT_TYPE] included a discount provided by I&M?
1. Yes
 2. No

[Display if Q9 = 1]

10. Were you planning to install an energy efficient [EQUIPMENT_TYPE] before you learned about the discount provided by I&M?
1. Yes
 2. No
 98. Not sure

[Display if Q11 = 1]

11. Just to be clear, did you have plans to specifically install an energy efficient [EQUIPMENT_TYPE] instead of installing a standard efficiency [EQUIPMENT_TYPE]?

1. Yes
2. No
98. Not sure

[Display if Q9 = 1]

12. Would you have been able to afford the high efficiency [EQUIPMENT_TYPE] if the discount was not available?

1. Yes
2. No
98. Not sure

[Display if Q9 = 1]

13. If the discount was not provided by I&M, which of the following best describes what you would have done?

1. You would have bought the exact same [EQUIPMENT_TYPE] or one that was more energy efficient
2. You would have bought a less efficient or lower cost [EQUIPMENT_TYPE]
3. You would not have bought a new [EQUIPMENT_TYPE]

[Display if Q9 = 1]

14. 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 [EQUIPMENT_TYPE] at about the same time if you had not received the discount?

[Use scale as stated in question]

[Display if Q9 = 1]

15. When might you have installed the same [EFF_MEASURE1/2] if the discount was not available?

1. At the same time as when you installed it
2. Within 6 months of when you installed it
3. Between 6 months and 1 year
4. In more than 1 year to 2 years
5. In two years or more
6. Never, would not have installed an energy efficient [EQUIPMENT_TYPE]
98. Don't know

16. Did the contractor you worked with recommend that you install the energy efficient [EQUIPMENT_TYPE]?

1. Yes
2. No

Heat pump baseline

[Display section if EQUIPMENT_TYPE = heat pump, ductless heat pump, or geothermal heat pump]

17. Did the [EQUIPMENT_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 if Q17 = 1]

18. Did the [EQUIPMENT_TYPE] replace a heat pump?

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

Heat pump replacement

[Display section if Q18 = 1]

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

1. Yes
2. No

20. 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)

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

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

[Display section if Q21 = 2]

22. 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

Other heating equipment replacement

[Display section if Q17 = 3 OR Q18 =2]

23. Was the old heating equipment working at the time it was replaced?

1. Yes
2. No

24. What type of heating system did you have before you installed the [EQUIPMENT_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 if Q24 = 1]

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

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

26. Thinking about the old heating equipment 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)

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

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

[Display if Q27 = 2]

28. 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

Cooling equipment replacement

[Display section if (Q17 = 1 AND Q18 = 2) OR (Q17 = 1 AND Q18 = 98) OR Q17 = 2]

29. Was the cooling equipment that you replaced a central air conditioner?

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

[Display if Q29 = 1]

30. Thinking about the [Q29 Response] 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 if Q29 = 1]

31. Was the old central air conditioner working at the time it was replaced?

1. Yes
2. No

[Display if Q29 = 1]

32. Do you know the approximate age of the old central air conditioner that was replaced?

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

[Display if Q32 = 2]

33. Which of the following do you think is the most likely age of the old central air conditioner:

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

Central air conditioner

[Display section if EQUIPMENT_TYPE = air conditioner]

34. Did the central air conditioner that you installed replace a different central air conditioner?

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

[Display if Q34 = 1]

35. Thinking about the central air conditioner that 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 if Q34 = 1]

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

1. Yes
2. No

[Display if Q34 = 1]

37. Do you know the approximate age of the old air conditioner that was replaced?

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

[Display if Q37 = 2]

38. Which of the following do you think is the most likely age of the old air conditioner:

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

Home characteristics

39. 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 describe)
98. Don't know

40. 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

41. What is the approximate square footage of your home? Your best estimate is fine.

6 Home Energy Products Online Marketplace Participant Survey

1. Our records indicate that your household received a rebate or discount on [ALL_MEASURES] through I&M's Online Marketplace in 2024.

Are you familiar with this?

1. Yes
2. No [TERMINATE SURVEY]

2. To begin with, we would like to verify the items that you received an I&M Online Marketplace discount or rebate on. Is this information correct?

[Scale: 1 = Yes, 2 = No, 98 = Don't know]

- a. [If DEHUMDIFIER_QUANT > 0] [DEHUMDIFIER_QUANT] Dehumidifier(s)
- b. [If LED_QUANT > 0] [LED_QUANT] LED light bulb(s)
- c. [If APS_QUANT > 0] [APS_QUANT] Advanced power strip(s)
- d. [If SHOWER_QUANT > 0] [SHOWER_QUANT] High efficiency showerhead(s)
- e. [If BATH_QUANT > 0] [BATH_QUANT] High efficiency bathroom faucet aerator(s)
- f. [If KITCHEN_QUANT > 0] [KITCHEN_QUANT] High efficiency kitchen faucet aerator(s)
- g. [If TSTAT_QUANT > 0] [TSTAT_QUANT] Wi-Fi / smart thermostat(s)
- h. [If AIR_QUANT > 0] [AIR_QUANT] Air purifier(s)
- i. [If LED_BATTERY_QUANT > 0] [LED_BATTERY_QUANT] LED light bulbs with batter back up
- j. [If SOCKET_QUANT > 0] [SOCKET_QUANT] WiFi plus Bluetooth smart socket(s)
- k. [If TV_QUANT > 0] [TV_QUANT] Television(s)
- l. [If CENTRAL_AC_QUANT > 0] [CENTRAL_AC_QUANT] Central air conditioner(s)
- m. [If CENTRAL_HP_QUANT > 0] [CENTRAL_HP_QUANT] Central heat pump(s)
- n. [If WINDOW_AC_QUANT > 0] [WINDOW_AC_QUANT] Window air conditioner(s)
- o. [If WATER_HEATER_QUANT > 0] [WATER_HEATER_QUANT] Water heater(s)

[Display Q3 if any in Q2 = 2]

3. What is incorrect about our information?

[Multiselect, make 3 exclusive]

1. The number of products you got a rebate or discount for
2. The type of products you got a rebate or discount for
3. You did not get an I&M Online Marketplace discount or rebate for the product

[Display Q4 if Q3=1]

4. How many of the products did you get a rebate or discount for?

[Table of text boxes]

1. [If Q2a = 2] Dehumidifier(s)
2. [If Q2b = 2] LED light bulb(s)
3. [If Q2c = 2] Advanced power strip(s)
4. [If Q2d = 2] High efficiency showerhead(s)

5. [If Q2e = 2] High efficiency bathroom faucet aerator(s)
6. [If Q2f = 2] High efficiency kitchen faucet aerator(s)
7. [If Q2g = 2] Wi-Fi / smart thermostat(s)
8. [If Q2h = 2] Air purifier(s)
9. [If Q2i = 2] LED light bulbs with batter back up
10. [If Q2j = 2] WiFi plus Bluetooth smart socket(s)
11. [If Q2k = 2] Television(s)
12. [If Q2l = 2] Central air conditioner(s)
13. [If Q2m = 2] Central heat pump(s)
14. [If Q2n = 2] Window air conditioner(s)
15. [If Q2o = 2] Water heater(s)

[Display Q5 if Q3=2]

5. What products did you buy from the I&M Online Marketplace?

[TERMINATE SURVEY if NONE IN Q2 = 1]

Awareness and Motivation

6. How did you first learn about I&M's Online Marketplace?

[Randomize 1-4]

1. From an email
2. From a friend, family member, or colleague
3. Through an internet search
4. When logging on the I&M website
5. In some other way (Please describe)

[Display if Q6 = 1]

7. What kind of email did you learn about the marketplace from?
 1. An email promoting the Online Marketplace product you purchased
 2. An email promoting a different Online Marketplace product than the one you purchased
 3. An I&M newsletter
 4. An email with information on my home energy use and information on the Online Marketplace
 5. Some other kind of email (Please describe)

8. Which of the following are reasons why you chose to shop on the Online Marketplace?

[Select all that apply. Randomize 1-4]

1. To save money on the product because an I&M discount was available
2. The website provided information on products that save energy
3. It was convenient
4. The product selection was good
5. For some other reason (Please describe)

9. How easy was it to find the product(s) you were looking for on the Online Marketplace?

1. Very easy
2. Easy
3. Difficult
4. Very difficult

[Display if Q9= 3 or 4]

10. What was difficult or what would have made it easier to find the product(s)?

11. How easy was it to identify products that are eligible for an I&M rebate or discount?

1. Very easy
2. Easy
3. Difficult
4. Very difficult

[Display if Q11= 3 or 4]

12. What was difficult or what would have made it easier to find the rebated or discounted products?

LED Verification

[Display Section if Q2B= 1]

13. 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 Q13= 2]

14. How many of the [LED_QUANT] LED light bulbs that you purchased are currently installed?

[Display if Q13= 2 or 3]

15. How many more of the [UNINSTALLED COUNT] LED light bulbs that you have not installed do you think you will install in the next six months?

[Display if Q13= 2 or 3]

16. 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 Section if Q2B= 1]

17. 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 Q17= 2]

18. How many of the [LED_BATTERY_QUANT] LED light bulbs with a battery backup that you purchased are currently installed?

[Display if Q17= 2 or 3]

19. 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 Q17= 1 or 2]

20. 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 Q20= 1 or 2]

21. Could you briefly describe how you are using the light bulbs with battery backup?

[Display if Q17= 1 or 2]

22. 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 Section if Q2B = 1]

23. 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

24. 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?

0. 0 (Not using any power strips purchased)
1. 1
2. 2

[Display Q25 if APS_QUANT - Q24 >0]

25. 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 Q26 if APS_QUANT - Q24 >0]

26. How many of the [APS_QUANT - Q24] Advanced Power Strip(s) you have not started using do you think you will start using in the next six months?

[Calculate APS_TOTAL as Q26 + Q24]

[Display QError! Reference source not found. if APS_TOTAL > 0]

27. For each of the advanced power strips that you are currently using or will use in the next six months, please tell us what type of equipment is or will be plugged into the power strip.

[Scale: 1. Audio/visual/entertainment equipment, 2. Computer/office equipment, 3. Other types of equipment]

1. [Display if APS_TOTAL > 0] Advanced power strip 1

2. [Display if APS_TOTAL > 1] Advanced power strip 2

[Display Q28 if any in Q17 = 3]

28. What other kind of equipment are you using with the power strip(s)?

Shower Verification

[Display Section 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]

29. How many of the [SHOWER_QUANT] high efficiency showerhead(s) that you purchased are currently installed?

[Display if Q17= 2 or 3]

30. 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]

31. 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 Section if Q2D = 1]

32. 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 Q32= 2]

33. How many of the [BATH_QUANT] high efficiency bathroom faucet aerator(s) that you purchased are currently installed?

[Display if Q32= 2 or 3]

34. How many more of the high efficiency bathroom faucet aerator(s) do you think you will install in the next six months?

[Display if Q32= 2 or 3]

35. 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 Section if Q2E = 1]

36. 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 Q36= 2]

37. How many of the [KITCHEN_QUANT] high efficiency kitchen faucet aerator(s) that you purchased are currently installed?

[Display if Q36= 2 or 3]

38. How many more of the high efficiency kitchen faucet aerator(s) do you think you will install in the next six months?

[Display if Q36= 2 or 3]

39. 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 Section if Q2E = 1]

40. 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 Q40= 2]

41. How many of the [SOCKET_QUANT] WiFi plus Bluetooth smart sockets(s) that you purchased are currently installed?

[Display if Q40= 2 or 3]

42. How many more of the WiFi plus Bluetooth smart socket(s) do you think you will install in the next six months?

[Display if Q40= 1 or 2]

43. 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

44. What other device do you have plugged into the WiFi plus Bluetooth smart socket?

45. Do you use the WiFi plus Bluetooth smart socket to schedule when the [Q43 RESPONSE] is turned on and off?

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

46. Do you use the WiFi plus Bluetooth smart socket connectivity to manually turn the device on and off?

1. Yes
2. No

47. About how much less time is the [Q43 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

Thermostat Verification

[Display Section if Q2F = 1]

48. 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 Q48 = 2]

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

50. 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 Q50 =1]

51. 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

52. 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 Q52 = 2 OR 3]

53. 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 Q52 = 2 OR 3]

54. 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

55. The next few questions are about the [EFF_MEASURE1] that you got a rebate or discount for from the I&M Online Marketplace. You may have received a rebate or discount on other products but these questions are about the [EFF_MEASURE1].
56. Did you purchase the [EFF_MEASURE1] on the I&M Online Marketplace or did you buy it somewhere else and apply for a rebate using the Online Marketplace?

1. Made the purchase using the I&M Online Marketplace
2. Bought it somewhere else

57. Did you decide to buy the [EFF_MEASURE1]...

1. Before you learned about I&M's Online Marketplace
2. After you learned about I&M's Online Marketplace
98. Don't know

[Display if Q56 = 1 (Purchased product through I&M Online Marketplace)]

58. Did you shop for [EFF_MEASURE1] at any other retailers before buying it on I&M's Online Marketplace?

1. Yes
2. No

[Display if Q58 = 1]

59. What is the most important reason for why you decided to buy 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. The information about the product efficiency provided on the website
6. For some other reason (Please explain)

60. The I&M's Online Marketplace website shows you an Enervee Score that tells you how energy efficient a product is compared to other products.

[Insert Image]

Do you recall seeing the Enervee Score for the [EFF_MEASURE1] you bought?

1. Yes
2. No

[Ask if Q60 = 1]

61. How important was the Enervee Score in your decision to buy the [EFF_MEASURE1]?

[Scale: 0 (Not at all important) – 10 (Very important)]

62. Were you planning to buy an [EFF_MEASURE1] before you learned that you could get a rebate or discount through I&M's Online Marketplace?

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

63. Would you have been able to buy the [EFF_MEASURE1] if the rebate or discount was not available through I&M's Online Marketplace?

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

[Display Q64 if Q63 = 1]

64. Just to confirm, if the rebate or discount was not available through the program, would you still have paid the additional cost to buy an [EFF_MEASURE1]?

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

[Display Q65 if EFF_MEASURE1 = "smart thermostat"]

65. What kind of thermostat would you most likely have bought if the rebate or discount from I&M was not available?

1. The same smart or learning thermostat
2. A different smart or learning thermostat
3. A programable or manual thermostat
4. Would not have purchased a new thermostat
98. Don't know

[Display Q66 if EFF_MEASURE1 = "ENERGY STAR air purifier" OR "ENERGY STAR dehumidifier" OR "high efficiency central air conditioner", "high efficiency central heat pump", "high efficiency room air conditioner", "ENERGY STAR television"]

66. What efficiency level of product would you most likely have bought if the rebate or discount from I&M was not available?

1. The same or higher efficiency
2. A less efficient product
3. The lowest efficiency or lowest cost option
4. Would not have purchased the product
98. Don't know

67. How likely is it that you would have bought the same [EFF_MEASURE1] at about the same time if you could not have received the rebate or discount 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]

68. Did you buy the [EFF_MEASURE1] sooner than you would have if the information and rebate from the program had not been available?

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

[Display Q69 if Q68 = 1]

69. When might you have bought 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

70. At the time you bought them, would you have bought the same number of [EFF_MEASURE1] if a rebate or discount 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 Q71 if Q70 = 3]

71. About how many percent fewer [EFF_MEASURE1] do you think you would have bought?

1. 1–10% fewer
2. 11 – 20% fewer
3. 21 – 30% fewer
4. 31 – 40% fewer
5. 41 – 50% fewer
6. 51 – 60% fewer
7. 61 – 70% fewer
8. 71 – 80% fewer
9. 81 – 90% fewer
10. 91 – 100% fewer

Participant Spillover

72. We would like to know if you have installed any additional energy efficient equipment because of your experience with the program that you DID NOT receive an incentive or rebate for.

Since participating in the [program_name] program, have you installed any ADDITIONAL energy efficient items in a household in I&M's service territory without receiving an incentive or rebate?

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

[Display if Q72 = 1]

73. We would like to know what you purchased and installed because of your experience with the program that you did not get a rebate or discount for.

Since participating in the program in [YEAR] have you done any of the following?

[Multiselect]

1. Purchased and installed an ENERGY STAR® appliance such as refrigerator, dishwasher, clothes washer, or clothes dryer
2. Purchased and installed water heater pipe insulation
3. Purchased and installed water heater jacket, blanket, or insulation
4. Purchased and installed low flow faucet aerators
5. Purchased and installed low flow showerheads
6. Purchased and installed an ENERGY STAR® room air conditioner
7. Purchased and installed an energy efficient water heater, tankless water heater, or heat pump water heater
8. Purchased and installed a smart thermostat
9. Purchased and installed a high efficiency heating or cooling equipment
10. Insulated your attic or walls
11. Air sealing (e.g., attic sealing, door seals, foam insulation, or door sweeps)
12. Purchased and installed energy saving advanced power strips
13. Purchased and installed an ENERGY STAR® pool pump
14. Purchased and installed an ENERGY STAR® air purifier
15. Purchased and installed an ENERGY STAR® dehumidifier
16. Something else
17. None of the above [Exclusive, Skip to end of block]

[Display Q74 if Q72 = 1]

74. Why did you not get an I&M incentive rebate or discount for that energy saving equipment?

1. Did not know an incentive, rebate or discount was available
2. Did not want to complete an application
3. The application paperwork was too long or complicated
4. I planned to but forgot
5. Some other reason (please describe)
6. I did get an incentive [Skip to end of the block]
7. Don't know

[Display if Q73 = 1]

75. What kind of appliance did you purchase?

[Multiselect]

1. Refrigerator
2. Freezer
3. Dishwasher
4. Clothes washer
5. Clothes dryer – Electric
6. Clothes dryer – Gas
7. Other (Please describe)
98. Don't know

[Display if Q73 = 1]

76. Does the appliance have an ENERGY STAR label?

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

[Display if Q73 = 4]

77. How many low flow faucet aerators did you install in bathroom sinks?

[Display if Q73 = 4]

78. How many low flow faucet aerators did you install in kitchen sinks?

[Display if Q73 = 5]

79. How many low flow shower heads did you install?

[Display if Q73 = 6]

80. How many ENERGY STAR® room air conditioners did you install?

[Display if Q73 = 7]

81. How do you know that the water heater you installed is an energy efficient water heater?

[Display if Q73 = 7]

82. 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 Q73 = 8]

83. 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 Q73 = 8]

84. Does the thermostat control your heating system, cooling system, or both?

1. Heating system
2. Cooling system
3. Both

[Display if Q84 = 1 OR 3]

85. Do you have an electric heating system?

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

[Display if Q85 = 1]

86. Is your heating system a heat pump?

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

[Display if Q73 = 9]

87. What type of heating or cooling equipment did you install?

1. Energy-efficient central air conditioner
2. Energy-efficient air source heat pump
3. Energy-efficient ground source heat pump
4. Energy-efficient ductless mini-split heat pump

5. Something else (please describe)

[Display if Q87 = 1]

88. What is the efficiency rating of the HVAC unit you purchased?

1. SEER: [NUMERIC; OPEN-ENDED]
2. EER: [NUMERIC; OPEN-ENDED]
98. Not sure

[Display if Q73 = 10]

89. What is the R-value of the insulation you installed?

[Display if Q73 = 10]

90. Where did you install the new insulation?

[Multiselect]

1. Attic
2. Walls
98. Don't know

[Display if Q90 = 1]

91. Approximately what size (in square feet) is the attic where the insulation is installed?

1. Square feet: [NUMERIC; OPEN-ENDED]
98. Not sure

[Display if Q73 = 11]

92. What type of weatherization products did you purchase and install?

1. Door seals
2. Spray foam insulation
3. Door sweeps
4. Something else (please describe)

[Display if Q92 = 1 – 4, and loop and merge]

93. How many [Q92 RESPONSE] did you purchase and install?

[Display if Q73 = 12]

94. How many energy saving advanced power strips did you purchase and install?

1. 1
2. 2
3. 3 or more

[Display if Q73 = 14]

95. How many ENERGY STAR® air purifiers did you install?

[Display if Q73 = 15]

96. How many ENERGY STAR® dehumidifiers did you install?

[Display if Q73 = 17]

97. What other energy efficient items did you install?

[Loop and merge section for Q73 = 1 – 15, skip if did not install anything]

98. In approximately what month and year did you install the [Q73 response] that you did not receive an incentive for?

99. Using the scale below, how important was the experience with the I&M Online Marketplace in your decision to install the [Q73 response]?

[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]

100. Using the scale below, how likely would you have been to install the [Q73 response] if you had not used the I&M Online Marketplace?

[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

101. Overall, how satisfied are you with the following products that you received a rebate or discount for?

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

- a. [If Q2a = 1] Dehumidifier(s)
- b. [If Q2b = 1] LED light bulb(s)
- c. [If Q2c = 1] Advanced power strip(s)
- d. [If Q2d = 1] High efficiency showerhead(s)
- e. [If Q2e = 1] High efficiency bathroom faucet aerator(s)

- f. [If Q2f = 1] High efficiency kitchen faucet aerator(s)
- g. [If Q2g = 1] Wi-Fi / smart thermostat(s)
- h. [If Q2h = 1] Air purifier(s)
- i. [If Q2i = 1] LED light bulbs with battery backup
- j. [If Q2j = 1] WiFi plus Bluetooth smart socket(s)
- k. [If Q2k = 1] Television(s)
- l. [If Q2l = 1] Central air conditioner(s)
- m. [If Q2m = 1] Central heat pump(s)

[Display if Q56 = 1 (Purchased product through I&M Online Marketplace)]

102. How clear was the information on the receipt for your Online Marketplace program purchase?

- 1. Very clear
- 2. Somewhat clear
- 3. Somewhat unclear
- 4. Not at all unclear

[Display if Q102 = 3 or 4]

103. What information was unclear? Please select all that apply.

- 1. My final purchase price
- 2. The amount of the rebate from I&M that I received
- 3. The amount of sales tax/or how the tax was calculated
- 4. Something else (Please describe)

[Display if Fast-Track application (applied for rebate)]

104. How easy was it to submit for the rebate, including the account verification process?

- 1. Very easy
- 2. Easy
- 3. Difficult
- 4. Very difficult

[Display if Q104 = 3 or 4]

105. What could make the rebate submission process easier?

106. Overall, how satisfied are you with your I&M Online Marketplace experience?

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

[Display if Q106 < 3]

107. What would have made your purchase experience better?
108. 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)]
109. Why do you give it that rating?

Demographics/Home Characteristics

110. 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.
111. 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
112. 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
113. 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

114. 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

115. 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 Home Online Energy Checkup Participant Survey Results

QID1 - Our records indicate that your household participated in I&M’s Online Energy Checkup program and received a kit that contained [Field-KIT%20DESCRIPTION] in the mail. Is that correct?

#	Answer	%	Count
1	Yes	100.00%	166
	Total	100%	166

QID2 - The Online Energy Checkup includes a survey that asked you questions about your home to help identify ways to save energy. Were you the person that completed the online energy checkup survey?

#	Answer	%	Count
1	Yes	100.00%	166
	Total	100%	166

QID3 - How did you first learn about I&M’s Online Energy Checkup program?

#	Answer	%	Count
1	Mailer from I&M	12.05%	20
2	I&M Website (www.electricideas.com or indianamichiganpower.com)	11.45%	19
3	Friend or Relative (word-of-mouth)	1.81%	3
4	I&M Representative	0.00%	0
5	I&M Newsletter	5.42%	9
6	I&M email	53.61%	89
7	Community event	0.00%	0
8	Social media (Facebook, Instagram or Twitter)	1.20%	2
9	My I&M account web portal	10.24%	17
10	Other (Please Specify)	0.60%	1
98	Don’t know	3.61%	6
	Total	100%	166

QID4 - Why did you decide to complete the online energy checkup survey and receive the energy efficiency kit? (Please select all that apply.)

#	Answer	%	Count
1	To learn about ways to save money on energy bill(s)	46.72%	121
2	Environmental reasons	13.90%	36
3	The items were provided free of charge	38.61%	100
4	Other (Please Specify)	0.77%	2
98	Don’t know	0.00%	0
	Total	100%	259

QID10 - Is the showerhead currently installed?

#	Answer	%	Count
1	Yes	43.08%	28
2	No	56.92%	37
98	Don't know	0.00%	0
	Total	100%	65

QID11 - Do you plan to install the showerhead in the next 6 months?

#	Answer	%	Count
1	Yes	27.03%	10
2	No	54.05%	20
98	Don't know	18.92%	7
	Total	100%	37

QID12 - Why have you not installed the showerhead? (Select all that apply)

#	Answer	%	Count
1	I did not receive the showerhead	2.33%	1
2	I have not had the time to install it	11.63%	5
3	I am not interested in installing it	0.00%	0
4	I did not need the showerhead	16.28%	7
5	I did not know how to install the showerhead	2.33%	1
6	I need physical assistance or tools to install it	2.33%	1
7	I do not like low-flow devices	6.98%	3
8	I gave it away	4.65%	2
9	I plan on moving or installing it in another location	6.98%	3
10	I don't like it	18.60%	8
11	Other (Please specify)	20.93%	9
98	Don't know	6.98%	3
	Total	100%	43

QID13 - Is the kitchen faucet aerator currently installed?

#	Answer	%	Count
1	Yes	49.23%	32
2	No	50.77%	33
98	Don't know	0.00%	0
	Total	100%	65

QID14 - Do you plan to install the kitchen faucet aerator in the next 6 months?

#	Answer	%	Count
1	Yes	18.18%	6
2	No	63.64%	21
98	Don't know	18.18%	6
	Total	100%	33

QID15 - Why have you not installed the kitchen faucet aerator? (Select all that apply)

#	Answer	%	Count
1	I did not receive it	2.78%	1
2	I have not had the time to install it	5.56%	2
3	I am not interested in installing it	8.33%	3
4	I did not know how to install it	2.78%	1
5	I need physical assistance or tools to install it	0.00%	0
6	I don't like low flow devices	8.33%	3
7	I gave it away	8.33%	3
8	I plan on moving or installing it in another location	5.56%	2
9	Other (Please specify)	50.00%	18
98	Don't know	8.33%	3
	Total	100%	36

QID16 - How many of the two bathroom faucet aerators are currently installed?

#	Answer	%	Count
0	0	36.92%	24
1	1	26.15%	17
2	2	33.85%	22
98	Don't know	3.08%	2
	Total	100%	65

QID17 - You said that you have not installed \$e{2 - [QID16-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	46.34%	19
1	1	17.07%	7
2	2	7.32%	3
98	Don't know	29.27%	12
	Total	100%	41

QID18 - Why have you not installed both of the bathroom faucet aerators? (Select all that apply)

#	Answer	%	Count
1	I did not receive them	6.38%	3
2	I have not had the time to install them	8.51%	4
3	I am not interested in installing them	4.26%	2
4	I don't like them	10.64%	5
5	I did not know how to install them	2.13%	1
6	I need physical assistance or tools to install them	2.13%	1
7	I don't like low flow devices	4.26%	2
8	I gave one or both away	6.38%	3
9	I plan on moving or installing them in another location	6.38%	3
10	Other (Please specify)	44.68%	21
98	Don't know	4.26%	2
	Total	100%	47

QID19 - Is the LED night light currently installed?

#	Answer	%	Count
1	Yes	93.85%	61
2	No	6.15%	4
98	Don't know	0.00%	0
	Total	100%	65

QID20 - Do you plan to install the LED night light in the next 6 months?

#	Answer	%	Count
1	Yes	0.00%	0
2	No	100.00%	4
98	Don't know	0.00%	0
	Total	100%	4

QID21 - Why have you not installed the LED night light? (Select all that apply)

#	Answer	%	Count
0	I did not receive it	25.00%	1
1	I have not had the time to install it	0.00%	0
2	I am not interested in installing it	0.00%	0
5	I didn't need it	25.00%	1
6	Other (Please specify)	25.00%	1
7	Don't know	0.00%	0
98	I don't like it	25.00%	1
99	I gave it away	0.00%	0
	Total	100%	4

QID24 - Thinking back to before you completed the Online Energy Checkup, had you purchased any of the following items in the last three years?

#	Question	Yes		No		Don't know		Total
1	Bathroom faucet aerators	21.54%	14	72.31%	47	6.15%	4	65
2	Kitchen faucet aerator	24.62%	16	72.31%	47	3.08%	2	65
3	High efficiency showerheads	35.38%	23	61.54%	40	3.08%	2	65
4	LED night lights	47.69%	31	47.69%	31	4.62%	3	65
5	Advanced power strips	15.84%	16	83.17%	84	0.99%	1	101

QID25 - Before you heard of the Online Energy Checkup Program, did you have specific plans to buy any of the kit items([Field-KIT_DESC]) that were sent to you?

#	Answer	%	Count
1	Yes	32.31%	21
2	No	61.54%	40
98	Don't know	6.15%	4
	Total	100%	65

QID28 - How many of the two bathroom faucet aerators that you received did you plan to buy?

#	Answer	%	Count
0	0	0.00%	0
1	1	30.00%	3
2	2	70.00%	7
98	Don't know	0.00%	0
	Total	100%	10

QID31 - Using a scale where 0 means “not at all likely” and 10 means “very likely”, if you had not completed the Online Energy Checkup or received the energy conservation kit, how likely would you have been to buy any of the following items on your own within 12 months of when you received them?

#	Question	0(Not at all likely)	1	2	3	4	5	6	7	8	9	10(Very likely)	Total			
1	Bathroom faucet aerators	38.46%	25%	7.69%	53%	9.26%	4.62%	3.30%	13.82%	1.59%	1.54%	3.08%	0.00%	16.92%	165	
2	Kitchen faucet aerator	40.00%	26%	4.62%	33%	9.26%	7.69%	4.62%	15.38%	1.00%	1.54%	3.08%	0.00%	13.85%	65	
3	High efficiency showerheads	36.92%	24%	3.08%	22%	10.77%	6.15%	3.40%	10.77%	3.08%	1.54%	6.15%	6.15%	12.31%	65	
4	LED night lights	12.31%	8%	1.54%	11%	6.14%	4.62%	1.30%	16.92%	1.11%	3.08%	7.69%	6.15%	4.62%	35.38%	263
5	Advanced power strips	28.71%	29%	7.92%	88%	10.89%	5.11%	1.94%	13.86%	3.14%	10.48%	10.89%	1.11%	1.98%	2.97%	301

QID32 - Based on your response, there is some likelihood that you would have bought some of the kit items in the next 12 months. Given that, we would like to know why you had not already bought the items on your own. Had you not already bought the kit items because: (Please select all that apply)

#	Answer	%	Count
1	You didn't want to spend the money	21.38%	34
2	You had not gotten around to buying the items	27.04%	43
3	You didn't know where to buy the items	4.40%	7
4	You didn't know enough about the items	23.27%	37
5	For other reasons	18.87%	30
6	Don't know	5.03%	8
	Total	100%	159

QID35 - The next few questions are about your experience with the online energy checkup survey. Using a scale where 1 means "very difficult" and 5 means "very easy", how easy or difficult was it to complete the online checkup?

#	Answer	%	Count
1	1(Very difficult)	0.00%	0
2	2	0.60%	1
3	3	9.64%	16
4	4	16.27%	27
5	5(Very easy)	73.49%	122
	Total	100%	166

QID36 - What difficulty did you have completing the online checkup? (Select all that apply)

#	Answer	%	Count
1	Signing on	0.00%	0
2	Not familiar with computers/technology	0.00%	0
3	The survey would not load	0.00%	0
4	The screen froze up	0.00%	0
5	Received some type of error message that prevented completion of the survey	0.00%	0
6	Couldn't answer some questions	0.00%	0
7	Other (Please specify)	100.00%	1
98	Don't know	0.00%	0
	Total	100%	1

QID47 - We would like to know if you have installed any additional energy efficient equipment because of your experience with the program that you DID NOT receive an incentive or rebate for. Since participating in the [Field-program_name] program, have you installed any ADDITIONAL energy efficient items in a household in I&M's service territory without receiving an incentive or rebate?

#	Answer	%	Count
1	Yes	32.73%	54
2	No	60.61%	100
3	Don't know	6.67%	11
	Total	100%	165

QID48 - We would like to know what you purchased and installed because of your experience with the program that you did not get a rebate or discount for. Since participating in the program in 2024 have you done any of the following?

#	Answer	%	Count
1	Purchased and installed an ENERGY STAR® appliance such as refrigerator, dishwasher, clothes washer, or clothes dryer	12.14%	17
2	Purchased and installed water heater pipe insulation	5.71%	8
3	Purchased and installed water heater jacket, blanket, or insulation	2.14%	3
4	Purchased and installed low flow faucet aerators	5.00%	7
5	Purchased and installed low flow showerheads	7.86%	11
6	Purchased and installed an ENERGY STAR® room air conditioner	3.57%	5
7	Purchased and installed an energy efficient water heater, tankless water heater, or heat pump water heater	5.00%	7
8	Purchased and installed a smart thermostat	11.43%	16
9	Purchased and installed a high efficiency heating or cooling equipment	5.71%	8
10	Insulated your attic or walls	6.43%	9
11	Air sealing (e.g., attic sealing, door seals, foam insulation, or door sweeps)	10.00%	14
12	Purchased and installed energy saving advanced power strips	4.29%	6
13	Purchased and installed an ENERGY STAR® pool pump	0.71%	1
14	Purchased and installed an ENERGY STAR® air purifier	3.57%	5
15	Purchased and installed an ENERGY STAR® dehumidifier	2.86%	4
16	Something else	11.43%	16
17	None of the above	2.14%	3
	Total	100%	140

QID49 - Why did you not get an I&M incentive, rebate, or discount for that energy saving equipment?

#	Answer	%	Count
1	Did not know an incentive, rebate or discount was available	72.55%	37
2	Did not want to complete an application	1.96%	1
3	The application paperwork was too long or complicated	0.00%	0
4	I planned to but forgot	3.92%	2
6	I did get an incentive	7.84%	4
7	For some other reason (Please describe)	9.80%	5
8	Don't know	3.92%	2
	Total	100%	51

QID66 - 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 online energy checkup service, overall	0.61%	1 1.21%	2 20.61%	3 30.91%	4 46.67%	7 165
2	The information provided by the online energy checkup	0.61%	1 3.66%	6 19.51%	3 31.71%	5 44.51%	7 164
3	The advanced powerstrip	6.00%	6 2.00%	2 23.00%	2 24.00%	2 45.00%	4 100
4	The kitchen aerator	13.11%	8 14.75%	9 26.23%	1 13.11%	8 32.79%	2 61
5	The bathroom aerators	13.56%	8 6.78%	4 28.81%	1 13.56%	8 37.29%	2 59
6	The showerhead	11.48%	7 11.48%	7 31.15%	1 18.03%	1 27.87%	1 61
7	The night light	6.25%	4 4.69%	3 6.25%	4 14.06%	9 68.75%	4 64

QID90 - Given your experience with the Online Checkup program, how likely are you to recommend it to your friends or family?

#	Group	%	Count
1	Detractor	23.78%	39
2	Passive	23.17%	38
3	Promoter	53.05%	87
	Total	100%	164

#	Given your experience with the Online Checkup program, how likely are you to recommend it to your friends or family?	Net Promoter Score®
1	Given your experience with the Online Checkup program, how likely are you to recommend it to your friends or family?	29.27

QID68 - Using the scale below, how dissatisfied or satisfied are you with I&M as your electricity service provider?

#	Answer	%	Count
1	1(Very dissatisfied)	0.61%	1
2	2	5.45%	9
3	3	13.33%	22
4	4	31.52%	52
5	5(Very satisfied)	49.09%	81
	Total	100%	165

QID70 - Do you own the home that you completed the online energy checkup for, rent it, or own it and rent it to someone else?

#	Answer	%	Count
1	Own	87.35%	145
2	Rent	10.84%	18
3	Own and rent to someone else	0.00%	0
99	Prefer not to answer	1.81%	3
	Total	100%	166

QID71 - Which of the following best describes this property? Is it a...

#	Answer	%	Count
1	Manufactured home	2.41%	4
2	Single-family house detached from any other house	83.73%	139
3	Single family house attached to one or more other houses, for example, duplex, row house, or townhome	4.22%	7
5	Apartment in a building with 2 to 3 units	0.60%	1
6	Apartment in a building with 4 or more units	6.02%	10
7	Other (Please Specify)	2.41%	4
99	Prefer not to answer	0.60%	1
	Total	100%	166

QID74 - When was your home built?

#	Answer	%	Count
1	Before 1950	19.51%	32
2	1950 to 1959	11.59%	19
3	1960 to 1969	14.63%	24
4	1970 to 1979	14.02%	23
5	1980 to 1989	9.76%	16
6	1990 to 1999	9.15%	15
7	2000 to 2009	9.76%	16
8	2010 or later	9.15%	15
99	Prefer not to answer	2.44%	4
	Total	100%	164

QID72 - What is the main fuel used to heat this property?

#	Answer	%	Count
1	Electricity	22.89%	38
2	Natural gas	71.08%	118
3	Propane	4.22%	7
4	Something else (Please specify)	1.81%	3
5	Don't heat home	0.00%	0
99	Prefer not to answer	0.00%	0
	Total	100%	166

QID73 - What fuel does the main water heater use?

#	Answer	%	Count
1	Natural gas	54.55%	90
2	Electricity	41.82%	69
3	Propane	3.03%	5
4	Something else (Please specify)	0.61%	1
5	Do not have hot water	0.00%	0
99	Prefer not to answer	0.00%	0
	Total	100%	165

QID75 - Including yourself, how many people live in your home year-round?

#	Answer	%	Count
1	1 person	30.12%	50
2	2 people	48.19%	80
3	3 people	7.83%	13
4	4 people	3.61%	6
5	5 people	4.22%	7
6	6 people	1.81%	3
7	7 people	0.00%	0
8	8 people or more	0.00%	0
99	Prefer not to answer	4.22%	7
	Total	100%	166

QID80 - How many bathroom faucets do you have in your home?

#	Answer	%	Count
1	1	18.79%	31
2	2	43.64%	72
3	3	24.85%	41
4	4	7.88%	13
5	5	2.42%	4
6	6	1.21%	2
7	7	0.00%	0
8	8 or more	0.61%	1
99	Prefer not to answer	0.61%	1
	Total	100%	165

QID81 - How many showers do you have in your home?

#	Answer	%	Count
1	1	40.61%	67
2	2	49.09%	81
3	3	9.09%	15
4	4	0.61%	1
5	5	0.00%	0
6	6	0.00%	0
7	7	0.00%	0
8	8 or more	0.00%	0
99	Prefer not to answer	0.61%	1
	Total	100%	165

QID78 - Which of the following best describes your annual household income?

#	Answer	%	Count
1	Less than \$10,000	1.85%	3
2	\$10,000 to less than \$20,000	5.56%	9
3	\$20,000 to less than \$30,000	8.02%	13
4	\$30,000 to less than \$40,000	6.79%	11
5	\$40,000 to less than \$50,000	8.64%	14
6	\$50,000 to less than \$75,000	19.14%	31
7	\$75,000 to less than \$100,000	8.02%	13
8	\$100,000 to less than \$150,000	8.02%	13
10	\$200,000 or more	1.23%	2
99	Prefer not to answer	32.72%	53
	Total	100%	162

8 AMI Data Portal Participant Survey Results

Q2 - I&M provides Energy Management Tools that you can access by logging onto your IndianaMichiganPower.com account. These tools provide information on trends in your electricity usage and energy use compared to similar homes. Have you ever accessed your account to view your energy management tools online?

#	Answer	%	Count
1	Yes, I have accessed it.	39.8%	39
2	No, I have not accessed it.	49.0%	48
3	I don't remember if I have accessed it.	11.2%	11
	Total	100%	98

Q3 - The next few questions are about different parts of the web portal you may have used. The Bill Forecast feature is designed to help you anticipate and manage your future energy bills by providing information on your current usage or costs to date, projecting your usage or costs for your electricity bill, and comparing these with your typical usage or costs for the same period based on historical data. Have you used the Bill Forecast feature on the portal?

#	Answer	%	Count
1	Yes	33.3%	13
2	No	59.0%	23
3	I'm not sure / I don't remember	7.7%	3
	Total	100%	39

Q4 - How useful did you find the Bill Forecast feature?

#	Answer	%	Count
1	Very useful	30.8%	4
2	Useful	15.4%	2
3	A little useful	38.5%	5
4	Not useful	15.4%	2
5	I encountered technical issues or found it difficult to use	0.0%	0
	Total	100%	13

Q5 - Why have you not used the Bill Forecast feature? (Select all that apply)

#	Answer	%	Count
1	I was not aware of it	60.9%	14
2	It seemed too complicated to use	4.3%	1
3	I didn't think it would be useful to me	17.4%	4
4	I tried to use it but encountered technical difficulties	8.7%	2
5	Other (Please specify)	13.0%	3
	Total	100%	23

Q6 - The Data Browser allows you to explore and understand your energy use patterns over time. It enables you to view your energy consumption alongside comparisons to weather conditions, neighbors’ usage, and your own past usage. This feature offers the ability to analyze your electricity data for different time periods. Have you used the Data Browser feature on the portal?

#	Answer	%	Count
1	Yes	48.7%	19
2	No	46.2%	18
3	I'm not sure / I don't remember	5.1%	2
	Total	100%	39

Q7 - How useful did you find the Data Browser feature?

#	Answer	%	Count
1	Very useful	42.1%	8
2	Useful	42.1%	8
3	A little useful	10.5%	2
4	Not useful	5.3%	1
5	I encountered technical issues or found it difficult to use	0.0%	0
	Total	100%	19

Q8 - Why have you not used the Data Browser feature? (Select all that apply)

#	Answer	%	Count
1	I was not aware of it	55.6%	10
2	It seemed too complicated to use	5.6%	1
3	I didn't think it would be useful to me	16.7%	3
4	I tried to use it but encountered technical difficulties	16.7%	3
5	Other (Please specify)	16.7%	3
	Total	100%	18

Q9 - Bill Comparison provides a way to compare your current bill with previous ones, offering personalized explanations for any changes and recommendations to help manage your energy costs. Have you used the Bill Comparison feature on the portal?

#	Answer	%	Count
1	Yes	41.0%	16
2	No	51.3%	20
3	I'm not sure / I don't remember	7.7%	3
	Total	100%	39

Q10 - How useful did you find the Bill Comparison feature?

#	Answer	%	Count
1	Very useful	18.8%	3
2	Useful	56.3%	9
3	A little useful	18.8%	3
4	Not useful	6.3%	1
5	I encountered technical issues or found it difficult to use	0.0%	0
	Total	100%	16

Q11 - Why have you not used the Ways to Save feature? (Select all that apply)

#	Answer	%	Count
1	I was not aware of it	55.0%	11
2	It seemed too complicated to use	5.0%	1
3	I didn't think it would be useful to me	30.0%	6
4	I tried to use it but encountered technical difficulties	15.0%	3
5	Other (Please specify)	0.0%	0
	Total	100%	20

Q12 - The Ways to Save offers suggestions on how to reduce your energy consumption and lower your bills. Each tip includes an estimated savings amount and is personalized for you. Have you viewed the Ways to Save feature on the portal?

#	Answer	%	Count
1	Yes	44.7%	17
2	No	39.5%	15
3	I'm not sure / I don't remember	15.8%	6
	Total	100%	38

Q13 - How useful did you find the Ways to Save feature?

#	Answer	%	Count
1	Very useful	6.3%	1
2	Useful	31.3%	5
3	A little useful	56.3%	9
4	Not useful	6.3%	1
5	I encountered technical issues or found it difficult to use	0.0%	0
	Total	100%	16

Q14 - Why have you not used the Ways to Save feature? (Select all that apply)

#	Answer	%	Count
1	I was not aware of it	40.0%	6
2	It seemed too complicated to use	6.7%	1
3	I didn't think it would be useful to me	33.3%	5
4	I tried to use it but encountered technical difficulties	6.7%	1
5	Other (Please specify)	13.3%	2
	Total	100%	15

Q15 - The program provides a weekly report on your home that features insights into your energy usage every week, comparing your current week's usage with the previous one and highlighting long-term trends. Do you recall seeing the weekly report?

#	Answer	%	Count
1	Yes	69.1%	56
2	No	30.9%	25
	Total	100%	81

Q16 - How often do you review the weekly report?

#	Answer	%	Count
1	Every week	41.1%	23
2	Most weeks	30.4%	17
3	Occasionally	17.9%	10
4	Rarely	7.1%	4
5	Never	3.6%	2
	Total	100%	56

Q17 - Have you done anything to change your use of electricity because of the information on your energy use?

#	Answer	%	Count
1	Yes	51.4%	36
2	No	48.6%	34
	Total	100%	70

Q18 - Did you do anything to change your energy use during specific times of the day or just in general?

#	Answer	%	Count
1	During certain times of the day	16.7%	6
2	In general	61.1%	22
3	Both during certain times of the day and in general	22.2%	8
	Total	100%	36

Q19 - What time of day were you trying to reduce your energy use? (Select all that apply)

#	Answer	%	Count
1	Morning	21.4%	3
2	Midday	28.6%	4
3	Afternoon	57.1%	8
4	Evening	35.7%	5
5	Nights	42.9%	6
	Total	100%	14

Q21 - Given your experience with the Energy Management Tools, how likely are you to recommend them to your friends or family?

#	Group	%	Count
1	Detractor	61.4%	43
2	Passive	18.6%	13
3	Promoter	20.0%	14
	Total	100%	70

Q23 - For each of the following, please state how much you agree or disagree.

#	Question	Strongly agree		Somewhat agree		Neither agree nor disagree		Somewhat disagree		Strongly disagree		Total
1	The energy tools help me understand how much electricity you use	34.4%	21	27.9%	17	27.9%	17	6.6%	4	3.3%	2	61
2	The energy tools help me understand how my electricity use changes	33.9%	21	27.4%	17	29.0%	18	6.5%	4	3.2%	2	62
3	The energy tools help me understand how much electricity I use at different times of day and days of the week	29.0%	18	30.6%	19	32.3%	20	6.5%	4	1.6%	1	62
4	The energy tools help me understand how I can save electricity	21.0%	13	30.6%	19	33.9%	21	8.1%	5	6.5%	4	62
5	The energy tools have	16.4%	10	27.9%	17	31.1%	19	14.8%	9	9.8%	6	61

helped me reduce my electricity use										
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Q26 - Which of the following best describes the property located at [Address]?

#	Answer	%	Count
1	Manufactured home	3.6%	3
2	Single-family house detached from any other house	83.3%	70
3	Single family house attached to one or more other houses, for example, duplex, row house, or townhome	1.2%	1
4	Apartment in a building with 2 to 3 units	3.6%	3
5	Apartment in a building with 4 or more units	4.8%	4
6	Other (Specify)	3.6%	3
7	I prefer not to state	0.0%	0
	Total	100%	84

Q27 - Do you own, rent, or own and rent to someone else the property that has access to the smart meter insight tools?

#	Answer	%	Count
1	Own	85.5%	71
2	Rent	12.0%	10
3	I prefer not to state	2.4%	2
	Total	100%	83

Q28 - Is this residence...

#	Answer	%	Count
1	Your primary residence	97.6%	82
2	A residence that you rent to someone else	0.0%	0
3	A vacation property that is not occupied year-round	0.0%	0
4	Something else	2.4%	2
	Total	100%	84

Q29 - What is the main fuel used for heating your home?

#	Answer	%	Count
1	Electricity	21.4%	18
2	Natural Gas	71.4%	60
3	Propane	6.0%	5
4	Something else	1.2%	1
5	Don't heat home	0.0%	0
6	Don't know/Prefer not to state	0.0%	0
	Total	100%	84

Q30 - What fuel does your main water heater use?

#	Answer	%	Count
1	Electricity	40.5%	32
2	Natural Gas	50.6%	40
3	Propane	2.5%	2
4	Something else	0.0%	0
5	Don't heat water in home	0.0%	0
6	Don't know/Prefer not to state	6.3%	5
	Total	100%	79

Q31 - What is the fuel source for your clothes dryer?

#	Answer	%	Count
1	Natural gas	16.3%	13
2	Electricity	77.5%	62
3	Propane	0.0%	0
4	Other	0.0%	0
5	I don't have a clothes dryer	5.0%	4
6	Don't know/Prefer not to state	1.3%	1
	Total	100%	80

Q32 - Do you have a Wi-Fi connect smart thermostat?

#	Answer	%	Count
1	Yes	19.3%	16
2	No	72.3%	60
3	Don't know/Prefer not to state	8.4%	7
	Total	100%	83

Q33 - Including yourself, how many people currently live in your home year-round?

#	Answer	%	Count
1	1	31.3%	26
2	2	34.9%	29
3	3	8.4%	7
4	4	13.3%	11
5	5	3.6%	3
6	6	1.2%	1
7	7	0.0%	0
8	8 or more	1.2%	1
9	I prefer not to state	6.0%	5
	Total	100%	83

Q34 - Which of the following best describes your annual household income?

#	Answer	%	Count
1	Less than \$10,000	3.6%	3
2	\$10,000 to less than \$20,000	8.4%	7
3	\$20,000 to less than \$30,000	9.6%	8
4	\$30,000 to less than \$40,000	6.0%	5
5	\$40,000 to less than \$50,000	7.2%	6
6	\$50,000 to less than \$75,000	9.6%	8
7	\$75,000 to less than \$100,000	15.7%	13
8	\$100,000 to less than \$150,000	8.4%	7
9	\$150,000 to less than \$200,000	2.4%	2
10	\$200,000 or more	1.2%	1
11	I prefer not to state	27.7%	23
	Total	100%	83

9 Residential Income Qualified Weatherproofing Survey Results

9.1 Virtual Kit Participant Survey Results

QID1 - Our records indicate that your household received a kit of energy saving items from I&M. Is that correct?

#	Answer	%	Count
1	Yes	85.7%	12
2	No	14.3%	2
98	Don't know	0.0%	0
	Total	100%	14

QID5 - How did you first learn about I&M's Income Qualified Home Energy Checkup program?

#	Answer	%	Count
1	Email from I&M	22.2%	2
2	Mailer from I&M or message on your utility bill	22.2%	2
3	I&M Website (www.electricideas.com or indianamichiganpower.com)	22.2%	2
4	Friend or relative (word-of-mouth)	11.1%	1
5	Program representative	0.0%	0
6	Community or public event with program representatives	11.1%	1
7	Social media (Facebook, Instagram or Twitter)	0.0%	0
8	Other (Please Specify)	11.1%	1
98	Don't know	0.0%	0
	Total	100%	9

QID2 - How did you sign up for the program?

#	Answer	%	Count
1	Using the online form on the I&M website	33.3%	3
2	By telephone	66.7%	6
3	Some other way (please describe)	0.0%	0
	Total	100%	9

QID3 - How easy or difficult was it to sign up for the program?

#	Answer	%	Count
1	Very easy	77.8%	7
2	Somewhat easy	22.2%	2
3	Somewhat difficult	0.0%	0
4	Very difficult	0.0%	0
	Total	100%	9

QID4 - 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	8.3%	1
1	1	0.0%	0
2	2	8.3%	1
3	3	8.3%	1
4	4	33.3%	4
5	5	16.7%	2
6	6	0.0%	0
7	7	0.0%	0
8	8	25.0%	3
98	Don't know	0.0%	0
	Total	100%	12

QID6 - What types of bulbs did you replace with the new LED light bulbs? (Please select all that apply)

#	Answer	%	Count
1	CFLs	18.2%	2
2	Incandescent/halogen	9.1%	1
3	LEDs	45.5%	5
98	Don't know	36.4%	4
	Total	100%	11

QID7 - You indicated that you have not installed \$e{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	0.0%	0
1	1	0.0%	0
2	2	11.1%	1
3	3	33.3%	3
4	4	55.6%	5
5	5	0.0%	0
6	6	0.0%	0
7	7	0.0%	0
8	8	0.0%	0
98	Don't know	0.0%	0
	Total	100%	9

QID8 - Why have you not installed all of the LED bulbs yet? (Select all that apply)

#	Answer	%	Count
1	I did not receive 8 bulbs	22.2%	2
2	I have not had the time to install them	11.1%	1
3	I am not interested in installing them	0.0%	0
4	I am waiting for light bulbs to burn out before replacing them	66.7%	6
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)	0.0%	0
98	Don't know	0.0%	0
	Total	100%	9

QID9 - 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%	1
2	Some but less than 25%	27.3%	3
3	Between 25% and 75%	18.2%	2
4	More than 75%	45.5%	5
98	Don't know	0.0%	0
	Total	100%	11

QID10 - Have you started using the advanced power strip that you received in the kit?

#	Answer	%	Count
1	Yes	83.3%	10
2	No	16.7%	2
98	Don't know	0.0%	0
	Total	100%	12

QID11 - 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	50.0%	1
3	I'm not interested in using it	0.0%	0
4	I didn't have a need for it	50.0%	1
5	Other (Please specify)	0.0%	0
98	Don't know	0.0%	0
	Total	100%	2

QID12 - Do you plan to start using the advanced power strip in the next six months?

#	Answer	%	Count
1	Yes	100.0%	2
2	No	0.0%	0
	Total	100%	2

QID13 - What kind of equipment [Field-APS%20USE] the advanced power strip?

#	Answer	%	Count
1	Audio/visual/entertainment equipment	75.0%	9
2	Computer/office equipment	33.3%	4
3	Other types of equipment	16.7%	2
	Total	100%	12

**QID14 - What equipment [Field-APS%20USE] the outlets labeled ‘Switched’?
(Select all that apply)**

#	Answer	%	Count
1	Audio/visual/entertainment equipment	0.0%	0
2	Computer/office equipment	0.0%	0
3	Other types of equipment	0.0%	0
4	No equipment is plugged into the ‘Switched’ outlets	0.0%	0
98	Don’t know	0.0%	0
	Total		0

QID15 - Is the showerhead currently installed?

#	Answer	%	Count
1	Yes	50.0%	1
2	No	50.0%	1
98	Don’t know	0.0%	0
	Total	100%	2

QID16 - Do you plan to install the showerhead in the next 6 months?

#	Answer	%	Count
1	Yes	100.0%	1
2	No	0.0%	0
98	Don't know	0.0%	0
	Total	100%	1

QID17 - Why have you not installed the showerhead? (Select all that apply)

#	Answer	%	Count
1	I did not receive the showerhead	0.0%	0
2	I have not had the time to install it	0.0%	0
3	I am not interested in installing it	0.0%	0
4	I do not have enough showers to use it	0.0%	0
5	I did not know how to install the showerhead	0.0%	0
6	I need physical assistance or tools to install it	0.0%	0
7	I don't like it	0.0%	0
8	Other (Please specify)	0.0%	0
98	Don't know	100.0%	1
	Total	100%	1

QID18 - Is the kitchen faucet aerator currently installed?

#	Answer	%	Count
1	Yes	100.0%	2
2	No	0.0%	0
98	Don't know	0.0%	0
	Total	100%	2

QID19 - Do you plan to install the kitchen faucet aerator in the next 6 months?

#	Answer	%	Count
1	Yes	0.0%	0
2	No	0.0%	0
	Total		0

QID20 - Why have you not installed the kitchen faucet aerator? (Select all that apply)

#	Answer	%	Count
1	I did not receive it	0.0%	0
2	I have not had the time to install it	0.0%	0
3	I am not interested in installing it	0.0%	0
4	I did not know how to install it	0.0%	0
5	I need physical assistance or tools to install it	0.0%	0
6	I don't like it	0.0%	0
7	Other (Please specify)	0.0%	0
98	Don't know	0.0%	0
	Total		0

QID21 - Is the bathroom faucet aerator currently installed?

#	Answer	%	Count
1	Yes	0.0%	0
2	No	100.0%	2
98	Don't know	0.0%	0
	Total	100%	2

QID22 - Do you plan to install the bathroom faucet aerator in the next 6 months?

#	Answer	%	Count
1	Yes	100.0%	2
2	No	0.0%	0
98	Don't know	0.0%	0
	Total	100%	2

QID23 - Why have you not installed the bathroom faucet aerator? (Select all that apply)

#	Answer	%	Count
1	I did not receive it	0.0%	0
2	I have not had the time to install it	0.0%	0
3	I am not interested in installing it	0.0%	0
4	I don't like it	0.0%	0
5	I did not know how to install it	0.0%	0
6	I need physical assistance or tools to install it	50.0%	1
7	Other (Please specify)	0.0%	0
98	Don't know	50.0%	1
	Total	100%	2

QID24 - How many of the two LED night lights are currently installed?

#	Answer	%	Count
0	0	16.7%	2
1	1	25.0%	3
2	2	50.0%	6
98	Don't know	8.3%	1
	Total	100%	12

QID25 - You indicated that you have not installed $\$2 - [QID24-ChoiceGroup-SelectedChoices]$ LED night light(s). How many of those do you think you will install in the next 6 months?

#	Answer	%	Count
0	0	0.0%	0
1	1	80.0%	4
2	2	20.0%	1
	Total	100%	5

QID26 - Why have you not installed both of the LED night lights? (Select all that apply)

#	Answer	%	Count
1	I did not receive them	0.0%	0
2	I have not had the time to install them	20.0%	1
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	20.0%	1
6	Other (Please specify)	40.0%	2
98	Don't know	20.0%	1
	Total	100%	5

QID27 - 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	55.6%	5
2	Installed the night light in an empty socket	44.4%	4
3	Replaced one night light and installed the other in an empty socket	0.0%	0
98	Don't know	0.0%	0
	Total	100%	9

QID29 - When you install the night light(s) you haven't already installed, will you...

#	Answer	%	Count
1	Replace another nightlight	40.0%	2
2	Install in an empty socket	60.0%	3
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%	5

QID30 - The next few questions are about the telephone discussion of your home energy use with the program representative. Were you the person in your household who participated in this discussion?

#	Answer	%	Count
1	Yes	88.9%	8
2	No	11.1%	1
98	Don't know	0.0%	0
	Total	100%	9

QID31 - About how long did the discussion take?

#	Answer	%	Count
1	15 minutes or less	12.5%	1
2	15 to 30 minutes	75.0%	6
3	30 to 45 minutes	0.0%	0
4	45 to 60 minutes	0.0%	0
5	More than 60 minutes	0.0%	0
98	Don't know	12.5%	1
	Total	100%	8

QID32 - Did the person you spoke with provide any energy saving tips?

#	Answer	%	Count
1	Yes	100.0%	8
2	No	0.0%	0
	Total	100%	8

QID34 - Overall, how useful was the discussion for helping you understand ways you can save energy?

#	Answer	%	Count
1	1 (Not at all useful)	0.0%	0
2	2	0.0%	0
3	3	25.0%	2
4	4	25.0%	2
5	5 (Very useful)	50.0%	4
	Total	100%	8

QID36 - 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	0.0%	0	0.0%	0	0.0%	0	33.3%	3	66.7%	6	9
2	The information provided through the energy use discussion	0.0%	0	0.0%	0	0.0%	0	33.3%	3	66.7%	6	9
3	The kit items that you received	0.0%	0	0.0%	0	0.0%	0	33.3%	3	66.7%	6	9

QID38 - 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	0.0%	0
3	3	11.1%	1
4	4	33.3%	3
5	5 (Very satisfied)	55.6%	5
	Total	100%	9

QID40 - Do you rent this residence, or own it and rent it to someone else?

#	Answer	%	Count
1	Own	91.7%	11
2	Rent	8.3%	1
3	Own and rent to someone else	0.0%	0
99	Prefer not to answer	0.0%	0
	Total	100%	12

QID41 - Which of the following best describes your home? Is it a...

#	Answer	%	Count
1	Manufactured home	8.3%	1
2	Single-family house detached from any other house	83.3%	10
3	Single family house attached to one or more other houses, for example, duplex,	0.0%	0
4	row house, or townhome	0.0%	0
5	Apartment in a building with 2 to 3 units	0.0%	0
6	Apartment in a building with 4 or more units	8.3%	1
7	Other (Please Specify)	0.0%	0
99	Prefer not to answer	0.0%	0
	Total	100%	12

QID42 - When was your home built?

#	Answer	%	Count
1	Before 1950	8.3%	1
2	1950 to 1959	25.0%	3
3	1960 to 1969	8.3%	1
4	1970 to 1979	8.3%	1
5	1980 to 1989	25.0%	3
6	1990 to 1999	16.7%	2
7	2000 to 2009	8.3%	1
8	2010 or later	0.0%	0
99	Prefer not to answer	0.0%	0
	Total	100%	12

QID43 - What is the main fuel used for heating your home?

#	Answer	%	Count
1	Electricity	8.3%	1
2	Natural Gas	91.7%	11
3	Propane	0.0%	0
4	Something else	0.0%	0
5	Don't heat home	0.0%	0
99	Prefer not to answer	0.0%	0
	Total	100%	12

QID44 - What fuel does your main water heater use?

#	Answer	%	Count
1	Electricity	27.3%	3
2	Natural Gas	72.7%	8
3	Propane	0.0%	0
4	Something else	0.0%	0
5	Don't heat home	0.0%	0
99	Prefer not to answer	0.0%	0
	Total	100%	11

QID45 - Including yourself, how many people currently live in your home year-round?

#	Answer	%	Count
1	1	33.3%	4
2	2	58.3%	7
3	3	0.0%	0
4	4	8.3%	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	0.0%	0
	Total	100%	12

QID46 - How many bathroom faucets do you have in your home?

#	Answer	%	Count
1	0	0.0%	0
2	1	45.5%	5
3	2	36.4%	4
4	3	9.1%	1
5	4	9.1%	1
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	0.0%	0
	Total	100%	11

QID47 - How many showers do you have in your home?

#	Answer	%	Count
1	0	0.0%	0
2	1	81.8%	9
3	2	18.2%	2
4	3	0.0%	0
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	0.0%	0
	Total	100%	11

QID48 - Which of the following best describes your annual household income?

#	Answer	%	Count
1	Less than \$10,000	10.0%	1
2	\$10,000 to less than \$20,000	0.0%	0
3	\$20,000 to less than \$30,000	10.0%	1
4	\$30,000 to less than \$40,000	20.0%	2
5	\$40,000 to less than \$50,000	20.0%	2
6	\$50,000 to less than \$75,000	0.0%	0
7	\$75,000 to less than \$100,000	0.0%	0
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	40.0%	4
	Total	100%	10

9.2 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%	2
2	No (Thank respondent and terminate the interview)	0.0%	0
	Total	100%	2

Q5 - 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%	2
2	No	0.0%	0
98	Don't know	0.0%	0
	Total	100%	2

Q6 - How did you first learn about I&M’s Home Energy Checkup Program?

#	Answer	%	Count
1	Email from I&M	0.0%	0
2	I&M postal mailing	50.0%	1
3	I&M Website (www.electricideas.com or indianamichiganpower.com)	0.0%	0
4	Friend or Relative (word-of-mouth)	0.0%	0
5	I&M Representative	0.0%	0
6	Community event	0.0%	0
7	Social media (Facebook, Instagram or Twitter)	50.0%	1
8	Other (Specify)	0.0%	0
98	Don’t know	0.0%	0
	Total	100%	2

Q8 - Did you schedule the home energy checkup you received through the program?

#	Answer	%	Count
1	Yes	100.0%	2
2	No, another person in my household scheduled it	0.0%	0
3	I am not aware that a home energy assessment was performed	0.0%	0
	Total	100%	2

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	50.0%	1
2	Recommended by contractor	0.0%	0
3	Recommended by friend or family	0.0%	0
4	Wanted to better understand the condition of my home	50.0%	1
5	Concerned about a specific issue(s) in my home	50.0%	1
6	Save energy to save money	100.0%	2
7	Save energy to protect the environment	0.0%	0
8	Wanted to make my home more comfortable	50.0%	1
	Total	100%	2

Q10 - Did the energy expert that did the home checkup ask you about any concerns you had about your home?

#	Answer	%	Count
1	Yes	100.0%	2
2	No	0.0%	0
98	Not sure	0.0%	0
	Total	100%	2

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	100.0%	2
2	No	0.0%	0
98	Not sure	0.0%	0
	Total	100%	2

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	1 (Very dissatisfied)		2		3		4		5 (Very satisfied)		Total
1	The amount of time between scheduling and when the checkup took place	0.0%	0	50.0%	1	0.0%	0	0.0%	0	50.0%	1	2
2	The time it took to complete the checkup	0.0%	0	0.0%	0	0.0%	0	50.0%	1	50.0%	1	2
3	The professionalism of the energy expert	0.0%	0	0.0%	0	0.0%	0	50.0%	1	50.0%	1	2
4	The quality of the work performed during the checkup	50.0%	1	0.0%	0	0.0%	0	0.0%	0	50.0%	1	2
5	The energy checkup overall	0.0%	0	0.0%	0	0.0%	0	50.0%	1	50.0%	1	2

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	50.0%	1
2	No	0.0%	0
98	Don't know	50.0%	1
	Total	100%	2

Q16 - Have you implemented any of the energy saving tips that you learned about from the home energy checkup?

#	Answer	%	Count
1	Yes	100.0%	1
2	No	0.0%	0
98	Don't know	0.0%	0
	Total	100%	1

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	0.0%	0
2	Not very useful	0.0%	0
3	Somewhat useful	0.0%	0
4	Very useful	100.0%	2
	Total	100%	2

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	undefined
2	Refrigerator	100.0%	2	0.0%	0	0.0%	0	2
3	Air sealing to reduce air leakage and drafts	0.0%	0	0.0%	0	0.0%	0	undefined
4	Insulation	0.0%	0	0.0%	0	0.0%	0	undefined
5	Heat pump water heater	0.0%	0	0.0%	0	0.0%	0	undefined
6	Heat pump	0.0%	0	0.0%	0	0.0%	0	undefined

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	50.0%	1
3	5- 6 weeks	0.0%	0
4	7- 8 weeks	0.0%	0
5	More than 8 weeks	50.0%	1
98	Don't know	0.0%	0
	Total	100%	2

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	50.0%	1
3	5- 6 weeks	0.0%	0
4	7- 8 weeks	0.0%	0
5	More than 8 weeks	50.0%	1
98	Don't know	0.0%	0
	Total	100%	2

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	0.0% 0	0.0% 0	0.0% 0	0
2	[Field-BATH%20AERATOR%20QUANT] energy and water efficient bathroom faucet aerators(s)	0.0% 0	0.0% 0	0.0% 0	0
3	[Field-KITCHEN%20AERATOR%20QUANT] energy and water efficient kitchen faucet aerator(s)	0.0% 0	0.0% 0	0.0% 0	0
4	[Field-SHOWER%20QUANT] energy and water efficient showerheads	0.0% 0	0.0% 0	0.0% 0	0
5	Pipe wrap	0.0% 0	0.0% 0	0.0% 0	0
6	[Field-APS%20QUANT] advanced power strip(s)	0.0% 0	0.0% 0	0.0% 0	0
7	[Field-NIGHTLIGHT%20QUANT] night light(s)	0.0% 0	0.0% 0	0.0% 0	0

Q49 - 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	0.0%	0	0.0%	0	0.0%	0	0.0%	0	100.0%	2	2
2	The effort required to sign up to participate in the program	0.0%	0	0.0%	0	0.0%	0	50.0%	1	50.0%	1	2
3	The quality of the installation work	0.0%	0	0.0%	0	0.0%	0	50.0%	1	50.0%	1	2
4	The program overall	0.0%	0	0.0%	0	0.0%	0	50.0%	1	50.0%	1	2

Q51 - 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	0.0%	0
2	2	0.0%	0
3	3	0.0%	0
4	4	0.0%	0
5	Very satisfied 5	100.0%	2
	Total	100%	2

Q52 - How likely are you to recommend the Home Energy Checkup Program to a friend or colleague?

#	Group	%	Count
1	Detractor	0.0%	0
2	Passive	0.0%	0
3	Promoter	100.0%	2
	Total	100%	2

Q55 - 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	100.0%	2
2	Rent	0.0%	0
3	Own and rent to someone else	0.0%	0
99	Prefer not to answer	0.0%	0
	Total	100%	2

Q56 - Which of the following best describes your home? Is it a...

#	Answer	%	Count
1	Manufactured home	0.0%	0
2	Single-family house detached from any other house	100.0%	2
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	0.0%	0
5	Apartment in a building with 4 or more units	0.0%	0
6	Other (Please describe)	0.0%	0
99	Prefer not to answer	0.0%	0
	Total	100%	2

Q57 - How many bathroom faucets do you have in your home?

#	Answer	%	Count
0	0	0.0%	0
1	1	100.0%	2
2	2	0.0%	0
3	3	0.0%	0
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%	2

Q58 - How many showers do you have in your home?

#	Answer	%	Count
0	0	0.0%	0
1	1	100.0%	2
2	2	0.0%	0
3	3	0.0%	0
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%	2

Q59 - When was your home built?

#	Answer	%	Count
1	Before 1950	50.0%	1
2	1950 to 1959	50.0%	1
3	1960 to 1969	0.0%	0
4	1970 to 1979	0.0%	0
5	1980 to 1989	0.0%	0
6	1990 to 1999	0.0%	0
7	2000 to 2009	0.0%	0
8	2010 or later	0.0%	0
99	Prefer not to answer	0.0%	0
	Total	100%	2

Q60 - Including yourself, how many people currently live in your home year-round?

#	Answer	%	Count
1	1	100.0%	2
2	2	0.0%	0
3	3	0.0%	0
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
9	Prefer not to answer	0.0%	0
	Total	100%	2

Q61 - 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	0.0%	0
3	\$20,000 to less than \$30,000	0.0%	0
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	0.0%	0
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	100.0%	2
	Total	100%	2

Q62 - Did your home receive any assistance in paying your electricity bill in the past year?

#	Answer	%	Count
1	Yes	50.0%	1
2	No	50.0%	1
99	Don't know/Prefer not to answer	0.0%	0
	Total	100%	2

10 Home HVAC Midstream Customer Survey Results

QID4 - Just to confirm, did you install a new [Field-EQUIPMENT_TYPE] in 2024?

#	Answer	%	Count
1	Yes	100.0%	8
2	No	0.0%	0
	Total	100%	8

QID7 - Is the location where the equipment is installed a home or a business?

#	Answer	%	Count
1	Home	0.0%	0
2	Business	0.0%	0
3	Other (Please explain)	0.0%	0
	Total		0

QID8 - Does the location receive electricity service from Indiana-Michigan Power (I&M)?

#	Answer	%	Count
1	Yes	0.0%	0
2	No	0.0%	0
98	Not sure	0.0%	0
	Total		0

QID35 - Did you know that the [Field-EQUIPMENT_TYPE] included a discount provided by I&M?

#	Answer	%	Count
1	Yes	62.5%	5
2	No	37.5%	3
	Total	100%	8

QID37 - Were you planning to install an energy efficient [Field-EQUIPMENT_TYPE] before you learned about the discount provided by I&M?

#	Answer	%	Count
1	Yes	100.0%	5
2	No	0.0%	0
98	Not sure	0.0%	0
	Total	100%	5

QID38 - Just to be clear, did you have plans to specifically install an energy efficient [Field-EQUIPMENT_TYPE] instead of installing a standard efficiency [Field-STANDARD_EQUIPMENT_TYPE]?

#	Answer	%	Count
1	Yes	80.0%	4
2	No	20.0%	1
98	Not sure	0.0%	0
	Total	100%	5

QID39 - Would you have been able to afford the high efficiency [Field-EQUIPMENT_TYPE] if the discount was not available?

#	Answer	%	Count
1	Yes	60.0%	3
2	No	20.0%	1
98	Not sure	20.0%	1
	Total	100%	5

QID9 - If the discount was not provided by I&M, which of the following best describes what you would have done?

#	Answer	%	Count
1	You would have bought the exact same \${e://Field/STANDARD_EQUIPMENT_TYPE} or one that was more energy efficient	40.0%	2
2	You would have bought a less efficient or lower cost \${e://Field/STANDARD_EQUIPMENT_TYPE}	60.0%	3
3	You would not have bought a new \${e://Field/STANDARD_EQUIPMENT_TYPE}	0.0%	0
	Total	100%	5

QID40 - 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-EQUIPMENT_TYPE] at about the same time if you had not received the discount?

#	Answer	%	Count
0	0 (Not at all likely)	0.0%	0
1	1	0.0%	0
2	2	0.0%	0
3	3	0.0%	0
4	4	0.0%	0
5	5	0.0%	0
6	6	40.0%	2
7	7	0.0%	0
8	8	20.0%	1
9	9	0.0%	0
10	10 (Very likely)	40.0%	2
	Total	100%	5

QID41 - When might you have installed the same [Field-EQUIPMENT_TYPE] if the discount was not available?

#	Answer	%	Count
1	At the same time as when you installed it	80.0%	4
2	Within 6 months of when you installed it	0.0%	0
3	Between 6 months and 1 year	20.0%	1
4	In more than 1 year to 2 years	0.0%	0
5	In two years or more	0.0%	0
6	Never, would not have installed an energy efficient \${e://Field/EQUIPMENT_TYPE}	0.0%	0
98	Don't know	0.0%	0
	Total	100%	5

QID36 - Did the contractor you worked with recommend that you install the energy efficient [Field-EQUIPMENT_TYPE]?

#	Answer	%	Count
1	Yes	87.5%	7
2	No	12.5%	1
	Total	100%	8

QID10 - Did the [Field-EQUIPMENT_TYPE] replace some old heating and cooling equipment?

#	Answer	%	Count
1	Yes, it replaced both cooling and heating equipment	57.1%	4
2	Yes, it replaced cooling equipment	0.0%	0
3	Yes, it replaced heating equipment	0.0%	0
4	No, it was a new installation that did not replace any equipment	42.9%	3
	Total	100%	7

QID11 - Did the [Field-EQUIPMENT_TYPE] replace a heat pump?

#	Answer	%	Count
1	Yes	50.0%	2
2	No	25.0%	1
98	Don't know	25.0%	1
	Total	100%	4

QID12 - Was the old heat pump working at the time it was replaced?

#	Answer	%	Count
1	Yes	100.0%	2
2	No	0.0%	0
	Total	100%	2

QID13 - 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.	0.0%	0
2	It was original equipment in a newly constructed home when the previous owner bought it.	0.0%	0
3	It was there when you bought the house from a previous owner.	0.0%	0
4	You or your family installed the old unit.	100.0%	2
5	Other (Please specify)	0.0%	0
	Total	100%	2

QID14 - Do you know the approximate age of the old heat pump that was replaced?

#	Answer	%	Count
1	Yes (How old was it?)	100.0%	2
2	No	0.0%	0
	Total	100%	2

QID15 - 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	0.0%	0
2	15 – 20 years old	0.0%	0
3	10 – 15 years old	0.0%	0
4	Less than 10 years old	0.0%	0
	Total		0

QID16 - Was the old heating equipment working at the time it was replaced?

#	Answer	%	Count
1	Yes	100.0%	1
2	No	0.0%	0
	Total	100%	1

QID17 - What type of heating system did you have before you installed the [Field-EQUIPMENT_TYPE]?

#	Answer	%	Count
1	Electric resistance heating	0.0%	0
2	An air source heat pump	0.0%	0
3	Some other kind of heating system	0.0%	0
4	No heating equipment	0.0%	0
98	Don't know	100.0%	1
	Total	100%	1

QID18 - Was your electric resistance heating system an electric furnace or baseboard heating?

#	Answer	%	Count
1	Electric furnace	0.0%	0
2	Electric baseboard heating	0.0%	0
98	Don't know	0.0%	0
	Total		0

QID19 - Thinking about the old heating equipment 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.	0.0%	0
2	It was original equipment in a newly constructed home when the previous owner bought it.	0.0%	0
3	It was there when you bought the house from a previous owner.	100.0%	1
4	You or your family installed the old unit.	0.0%	0
5	Other (Please specify)	0.0%	0
	Total	100%	1

QID20 - Do you know the approximate age of the old heating equipment that was replaced?

#	Answer	%	Count
1	Yes (How old was it?)	0.0%	0
2	No	100.0%	1
	Total	100%	1

QID21 - 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	100.0%	1
2	15 – 20 years old	0.0%	0
3	10 – 15 years old	0.0%	0
4	Less than 10 years old	0.0%	0
	Total	100%	1

QID22 - Was the cooling equipment that you replaced a central air conditioner?

#	Answer	%	Count
1	Yes	50.0%	1
2	No	50.0%	1
98	Don't know	0.0%	0
	Total	100%	2

QID23 - Thinking about the central 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.	0.0%	0
2	It was original equipment in a newly constructed home when the previous owner bought it.	0.0%	0
3	It was there when you bought the house from a previous owner.	100.0%	1
4	You or your family installed the old unit.	0.0%	0
5	Other (Please specify)	0.0%	0
	Total	100%	1

QID24 - Was the old central air conditioner working at the time it was replaced?

#	Answer	%	Count
1	Yes	0.0%	0
2	No	100.0%	1
	Total	100%	1

QID25 - Do you know the approximate age of the old central air conditioner that was replaced?

#	Answer	%	Count
1	Yes (How old was it?)	0.0%	0
2	No	100.0%	1
	Total	100%	1

QID26 - Which of the following do you think is the most likely age of the old central air conditioner:

#	Answer	%	Count
1	More than 20 years old	0.0%	0
2	15 – 20 years old	100.0%	1
3	10 – 15 years old	0.0%	0
4	Less than 10 years old	0.0%	0
	Total	100%	1

QID27 - Did the central air conditioner that you installed replace a different central air conditioner?

#	Answer	%	Count
1	Yes	0.0%	0
2	No	0.0%	0
98	Don't know	0.0%	0
	Total		0

QID28 - Thinking about the central air conditioner that 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.	0.0%	0
2	It was original equipment in a newly constructed home when the previous owner bought it.	0.0%	0
3	It was there when you bought the house from a previous owner.	0.0%	0
4	You or your family installed the old unit.	0.0%	0
5	Other (Please specify)	0.0%	0
	Total		0

QID29 - Was the old air conditioner working at the time it was replaced?

#	Answer	%	Count
1	Yes	0.0%	0
2	No	0.0%	0
	Total		0

QID30 - Do you know the approximate age of the old air conditioner that was replaced?

#	Answer	%	Count
1	Yes (How old was it?)	0.0%	0
2	No	0.0%	0
	Total		0

QID31 - Which of the following do you think is the most likely age of the old air conditioner:

#	Answer	%	Count
1	More than 20 years old	0.0%	0
2	15 – 20 years old	0.0%	0
3	10 – 15 years old	0.0%	0
4	Less than 10 years old	0.0%	0
	Total		0

QID32 - Which of the following best describes your home? Is it a...

#	Answer	%	Count
1	Manufactured home	12.5%	1
2	Single-family house detached from any other house	62.5%	5
3	Single-family house attached to one or more other houses, for example, duplex, row house, or townhome	12.5%	1
4	Apartment in a building with 2 to 3 units	0.0%	0
5	Apartment in a building with 4 or more units	0.0%	0
6	Other (Please describe)	12.5%	1
98	Don't know	0.0%	0
	Total	100%	8

QID33 - When was your home built?

#	Answer	%	Count
1	Before 1950	0.0%	0
2	1950 to 1959	12.5%	1
3	1960 to 1969	0.0%	0
4	1970 to 1979	0.0%	0
5	1980 to 1989	37.5%	3
6	1990 to 1999	0.0%	0
7	2000 to 2009	50.0%	4
8	2010 or later	0.0%	0
98	Don't know	0.0%	0
	Total	100%	8

QID34 - What is the approximate square footage of your home? Your best estimate is fine.

What is the approximate square footage of your home? Your best estimate is fine.

1400

4900

1601

1500

1000

1,100

2,004 sq. Ft.

2300

11 Home Energy Products Online Marketplace Participant Survey Results

QID1 - Our records indicate that your household received a rebate or discount on [Field-ALL_MEASURES] through I&M's Online Marketplace in 2024. Are you familiar with this purchase?

#	Answer	%	Count
1	Yes	100.0%	6
2	No	0.0%	0
	Total	100%	6

QID2 - To begin with, we would like to verify the items that you received an I&M Online Marketplace discount or rebate on. 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	undefined
2	[Field-DEHUMIDIFIER_QUANT] Dehumidifiers	100.0%	1	0.0%	0	1
3	[Field-APS_QUANT] Advanced power strip(s)	0.0%	0	0.0%	0	undefined
4	[Field-SHOWER_QUANT] High efficiency showerhead(s)	0.0%	0	0.0%	0	undefined
5	[Field-BATH_QUANT] High efficiency bathroom faucet aerator(s)	0.0%	0	0.0%	0	undefined
6	[Field-KITCHEN_QUANT] High efficiency kitchen faucet aerator(s)	0.0%	0	0.0%	0	undefined
7	[Field-TSTAT_QUANT] Wi-Fi / smart thermostat(s)	100.0%	2	0.0%	0	2
8	[Field-AIR_QUANT] air purifier(s)	100.0%	1	0.0%	0	1
9	[Field-LED_BATTERY_QUANT] LED light bulbs with a battery backup	0.0%	0	0.0%	0	undefined
10	[Field-SOCKET_QUANT] WiFi plus Bluetooth smart socket(s)	100.0%	1	0.0%	0	1
11	[Field-TV_QUANT] Television(s)	100.0%	1	0.0%	0	1
12	[Field-CENTRAL_AC_QUANT] Central air conditioner(s)	0.0%	0	0.0%	0	undefined
13	[Field-CENTRAL_HP_QUANT] Central heat pump(s)	0.0%	0	0.0%	0	undefined
14	[Field-WINDOW_AC_QUANT] Window air conditioner(s)	0.0%	0	0.0%	0	undefined
15	[Field-WATER_HEATER_QUANT] Water heater(s)	0.0%	0	0.0%	0	undefined

QID88 - What is incorrect about our information?

#	Answer	%	Count
1	The number of products you got a rebate or discount for	0.0%	0
2	The type of products you got a rebate or discount for	0.0%	0
3	You did not get an I&M Online Marketplace discount or rebate for the product	0.0%	0
	Total		0

Q8 - How did you first learn about I&M’s Online Marketplace?

#	Answer	%	Count
1	From an email	50.0%	3
4	From a friend, family member, or colleague	16.7%	1
5	Through an internet search	0.0%	0
6	When logging on the I&M website	33.3%	2
7	In some other way (Please describe)	0.0%	0
	Total	100%	6

Q9 - What kind of I&M email did you learn about the marketplace from?

#	Answer	%	Count
6	Some other kind of email (Please describe)	0.0%	0
5	An email with information on my home energy use and information on the Online Marketplace	33.3%	1
7	An email promoting the Online Marketplace product you purchased	0.0%	0
1	An email promoting the Online Marketplace product you purchased	0.0%	0
4	An I&M newsletter	66.7%	2
	Total	100%	3

QID112 - Which of the following are reasons why you chose to shop on the Online Marketplace? (Please select all that apply)

#	Answer	%	Count
1	To save money on the product because an I&M discount was available	100.0%	6
2	The website provided information on products that save energy	33.3%	2
3	It was convenient	33.3%	2
4	The product selection was good	50.0%	3
5	The information about the product efficiency provided on the website	33.3%	2
6	For some other reason (Please describe)	0.0%	0
	Total	100%	6

QID113 - How easy was it to find the product(s) you were looking for on the Online Marketplace?

#	Answer	%	Count
1	Very easy	33.3%	2
2	Easy	66.7%	4
3	Difficult	0.0%	0
4	Very difficult	0.0%	0
	Total	100%	6

QID115 - How easy was it to identify products that are eligible for an I&M rebate or discount?

#	Answer	%	Count
1	Very easy	16.7%	1
4	Easy	66.7%	4
5	Difficult	16.7%	1
6	Very difficult	0.0%	0
	Total	100%	6

QID3 - 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

QID6 - 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

QID67 - Are/is the [Field-LED_BATTERY_QUANT] LED light bulbs with a battery backup 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

QID70 - 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?

#	Answer	%	Count
1	Using it the same as any other light bulb	0.0%	0
2	Using them for a special application	0.0%	0
	Total		0

QID83 - Did you order the energy-saving Advanced Power Strip(s) for use in a home or a business location?

#	Answer	%	Count
1	For use in a home	0.0%	0
2	For use in a business	0.0%	0
3	Both, for use in a home and a business	0.0%	0
	Total		0

QID7 - 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)	0.0%	0
1	1	0.0%	0
2	2	0.0%	0
	Total		0

QID10 - 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	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	0.0%	0
5	Other (Please specify)	0.0%	0
98	Don't know	0.0%	0
	Total		0

QID11 - For each of the advanced power strips that you are currently using, please tell us what type of equi

#	Question	Audio/visual/entertainment equipment	Computer/office equipment	Other types of equipment	Total
1	Advanced power strip 1	0.0% 0	0.0% 0	0.0% 0	0
2	Advanced power strip 2	0.0% 0	0.0% 0	0.0% 0	0

QID13 - Are/is the [Field-SHOWER_QUANT] high efficiency showerhead(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	0.0%	0
	Total		0

QID16 - 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

QID17 - 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	0.0%	0
2	Some are	0.0%	0
3	No, none are	0.0%	0
	Total		0

QID20 - 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

QID21 - 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	0.0%	0
	Total		0

QID24 - 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	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

QID73 - Are/is the [Field-SOCKET_QUANT] WiFi plus Bluetooth smart socket(s) that you purchased from the Online Marketplace currently in use? By in use we mean they have something plugged into them.

#	Answer	%	Count
1	Yes	100.0%	1
2	Some are	0.0%	0
3	No, none are	0.0%	0
	Total	100%	1

QID76 - 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?

#	Answer	%	Count
1	Air purifier	0.0%	0
2	Coffee pot / electric tea kettle	0.0%	0
3	Computer / computer monitor	0.0%	0
4	DVD player	0.0%	0
5	DVR	0.0%	0
6	Game console	0.0%	0
7	Lamp	100.0%	1
8	Microwave	0.0%	0
9	Mobile device (such as a phone or tablet)	0.0%	0
10	Room air conditioner	0.0%	0
11	Space heater	0.0%	0
12	Stereo/smart speaker or other music player	0.0%	0
13	Television set	0.0%	0
14	Toaster / toaster oven	0.0%	0
15	Something else	0.0%	0
	Total	100%	1

QID78 - Do you use the WiFi plus Bluetooth smart socket connectivity to manually turn the device on and off?

#	Answer	%	Count
1	Yes	100.0%	1
2	No	0.0%	0
	Total	100%	1

QID80 - About how much less time is the [QID76-ChoiceGroup-SelectedChoices] turned on now that you are controlling it with the WiFi plus Bluetooth smart socket?

#	Answer	%	Count
1	None - it is on for the same amount of time	0.0%	0
2	About 20% less	0.0%	0
3	About 40% less	0.0%	0
4	About 60% less	100.0%	1
5	At least 80% less	0.0%	0
98	Not sure	0.0%	0
	Total	100%	1

QID25 - Are/is the Wi-Fi thermostat(s) that you ordered through the I&M Online Marketplace currently installed and working?

#	Answer	%	Count
1	Yes	50.0%	1
2	No	50.0%	1
98	Don't know	0.0%	0
	Total	100%	2

QID27 - 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	0.0%	0
2	A standard thermostat that lets you set on/off temperatures	0.0%	0
3	A different Wi-Fi smart thermostat	100.0%	1
98	Don't know	0.0%	0
	Total	100%	1

QID28 - 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	0.0%	0
	Total		0

QID29 - 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

QID31 - 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

QID32 - 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

QID117 - Did you purchase the [Field-EFF_MEASURE1] on the I&M Online Marketplace or did you buy it somewhere else and apply for a rebate using the Online Marketplace?

#	Answer	%	Count
1	Made the purchase using the I&M Online Marketplace	83.3%	5
4	Bought it somewhere else	16.7%	1
	Total	100%	6

QID34 - Did you decide to buy the [Field-EFF_MEASURE1]....

#	Answer	%	Count
1	Before you learned about I&M’s Online Marketplace	33.3%	2
2	After you learned about I&M’s Online Marketplace	50.0%	3
98	Don’t know	16.7%	1
	Total	100%	6

QID35 - Did you shop for [Field-EFF_MEASURE1] at any other retailers before buying it on I&M’s Online Marketplace?

#	Answer	%	Count
1	Yes	80.0%	4
2	No	20.0%	1
	Total	100%	5

QID36 - What is the most important reason for why you decided to buy the [Field-EFF_MEASURE1] on I&M’s Online Marketplace?

#	Answer	%	Count
1	It was convenient	25.0%	1
2	Shipping was free	0.0%	0
3	The instant rebate / price of the product	50.0%	2
4	You felt confident in the quality	25.0%	1
5	For some other reason (Please explain)	0.0%	0
	Total	100%	4

QID92 - The I&M's Online Marketplace website shows you an Enervee Score that tells you how energy efficient a product is compared to other products. Do you recall seeing the Enervee Score for the [Field-EFF_MEASURE1] you bought?

#	Answer	%	Count
1	Yes	66.7%	4
2	No	33.3%	2
	Total	100%	6

QID93 - How important was the Enervee Score in your decision to buy the [Field-EFF_MEASURE1]?

#	Answer	%	Count
1	0 (Not at all important)	0.0%	0
2	1	0.0%	0
3	2	0.0%	0
4	3	0.0%	0
5	4	0.0%	0
6	5	0.0%	0
7	6	0.0%	0
8	7	25.0%	1
9	8	25.0%	1
10	9	0.0%	0
11	10 (Very important)	50.0%	2
	Total	100%	4

QID37 - Were you planning to buy an [Field-EFF_MEASURE1] before you learned that you could get a rebate or discount through I&M’s Online Marketplace?

#	Answer	%	Count
1	Yes	66.7%	4
2	No	33.3%	2
98	Don't know	0.0%	0
	Total	100%	6

QID38 - Would you have been able to buy the [Field-EFF_MEASURE1] if the rebate or discount was not available through I&M’s Online Marketplace?

#	Answer	%	Count
1	Yes	83.3%	5
2	No	0.0%	0
98	Don't know	16.7%	1
	Total	100%	6

QID39 - Just to confirm, if the rebate or discount was not available through the program, would you still have paid the additional cost to buy an [Field-EFF_MEASURE1]?

#	Answer	%	Count
1	Yes	60.0%	3
2	No	20.0%	1
98	Don't know	20.0%	1
	Total	100%	5

QID65 - What kind of thermostat would you most likely have bought if the rebate or discount from I&M was not available?

#	Answer	%	Count
1	The same smart or learning thermostat	0.0%	0
4	A different smart or learning thermostat	0.0%	0
5	A programable or manual thermostat	0.0%	0
6	Would not have purchased a new thermostat	0.0%	0
7	Don't know	0.0%	0
	Total		0

QID91 - What efficiency level of product would you most likely have bought if the rebate or discount from I&M was not available?

#	Answer	%	Count
1	The same or higher efficiency	0.0%	0
4	A less efficient product	0.0%	0
5	The lowest efficiency or lowest cost option	0.0%	0
6	Would not have purchased the product	0.0%	0
7	Don't know	0.0%	0
	Total		0

QID40 - How likely is it that you would have bought the same [Field-EFF_MEASURE1] at about the same time if you could not have received the rebate or discount through the I&M Online Marketplace?

#	Answer	%	Count
0	0 Not at all likely	16.7%	1
1	1	0.0%	0
2	2	0.0%	0
3	3	0.0%	0
4	4	0.0%	0
5	5	33.3%	2
6	6	0.0%	0
7	7	33.3%	2
8	8	16.7%	1
9	9	0.0%	0
10	10 Very likely	0.0%	0
	Total	100%	6

QID41 - Did you buy 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	50.0%	3
2	No	33.3%	2
98	Don't know	16.7%	1
	Total	100%	6

QID42 - When might you have bought the same [Field-EFF_MEASURE1] if you had not participated in the program?

#	Answer	%	Count
1	Within 6 months of when you purchased it	33.3%	1
2	Between 6 months and 1 year	33.3%	1
3	In more than 1 year to 2 years	33.3%	1
4	In two years or more	0.0%	0
98	Don't know	0.0%	0
	Total	100%	3

QID43 - At the time you bought them, would you have bought the same number of [Field-EFF_MEASURE1] if a rebate or discount was not available through I&M's Online Marketplace?

#	Answer	%	Count
1	Yes	33.3%	2
2	No would not have purchased any	16.7%	1
3	No, would have purchased fewer $\{e://Field/EFF_MEASURE1\}$	33.3%	2
4	Don't know	16.7%	1
	Total	100%	6

QID64 - About how many percent fewer [Field-EFF_MEASURE1] do you think you would have bought?

#	Answer	%	Count
1	1 - 10 % fewer	0.0%	0
2	11 - 20% fewer	50.0%	1
3	21 - 30% fewer	0.0%	0
4	31 - 40% fewer	0.0%	0
5	41 - 50% fewer	0.0%	0
6	51 -60% fewer	50.0%	1
7	61 - 70% fewer	0.0%	0
8	71 - 80% fewer	0.0%	0
9	81 - 90% fewer	0.0%	0
10	91 - 100% fewer	0.0%	0
	Total	100%	2

QID94 - We would like to know if you have installed any additional energy efficient equipment because of your experience with the program that you DID NOT receive an incentive or rebate for. Since participating in the [Field-program_name] program, have you installed any ADDITIONAL energy efficient items in a household in I&M's service territory without receiving an incentive or rebate?

#	Answer	%	Count
1	Yes	50.0%	3
2	No	50.0%	3
98	Don't know	0.0%	0
	Total	100%	6

QID96 - We would like to know what you purchased and installed because of your experience with the program that you did not get a rebate or discount for. Since participating in the program in [Field-YEAR] have you done any of the following?

#	Answer	%	Count
1	Purchased and installed an ENERGY STAR® appliance such as refrigerator, dish clothes washer, or clothes dryer	66.7%	2
2	Purchased and installed water heater pipe insulation	0.0%	0
3	Purchased and installed water heater jacket, blanket, or insulation	0.0%	0
4	Purchased and installed low flow faucet aerators	0.0%	0
5	Purchased and installed low flow showerheads	0.0%	0
6	Purchased and installed an ENERGY STAR® room air conditioner	0.0%	0
7	Purchased and installed an energy efficient water heater, tankless water heater pump water heater	0.0%	0
8	Purchased and installed a smart thermostat	33.3%	1
9	Purchased and installed a high efficiency heating or cooling equipment	33.3%	1
10	Insulated your attic or walls	33.3%	1
11	Air sealing (e.g., attic sealing, door seals, foam insulation, or door sweeps)	33.3%	1
12	Purchased and installed energy saving advanced power strips	0.0%	0
13	Purchased and installed an ENERGY STAR® pool pump	0.0%	0
14	Purchased and installed an ENERGY STAR® air purifier	33.3%	1
15	Purchased and installed an ENERGY STAR® dehumidifier	0.0%	0
16	Something else	33.3%	1
98	None of the above	0.0%	0
	Total	100%	3

QID97 - What type of thermostat did the smart thermostat replace?

#	Answer	%	Count
1	A programmable thermostat that allows you to schedule the temperature settings for different times of the day	0.0%	0
2	A standard thermostat that lets you set on/off temperatures	0.0%	0
4	A different Wi-Fi smart thermostat	0.0%	0
98	Don't know	100.0%	1
	Total	100%	1

QID98 - Does the smart thermostat control a central cooling system, a central heating system, or both?

#	Answer	%	Count
1	Central cooling system	0.0%	0
4	Central heating system	0.0%	0
5	Both	100.0%	1
	Total	100%	1

QID99 - Do you have an electric heating system?

#	Answer	%	Count
1	Yes	0.0%	0
2	No	100.0%	1
98	Don't know	0.0%	0
	Total	100%	1

QID44 - Overall, how satisfied are you with the following products that you received a rebate or discount for?

#	Question	1 Very dissatisfied		2		3		4		5 Very satisfied		Total
1	LED light bulb(s)	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	undefined
2	Dehumidifier(s)	0.0%	0	0.0%	0	0.0%	0	0.0%	0	100.0%	1	1
3	Advanced power strip(s)	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	undefined
4	High efficiency showerhead(s)	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	undefined
5	High efficiency bathroom faucet aerator(s)	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	undefined
6	High efficiency kitchen faucet aerator(s)	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	undefined
7	Wi-Fi / smart thermostat(s)	0.0%	0	0.0%	0	50.0%	1	0.0%	0	50.0%	1	2
8	Air purifier(s)	0.0%	0	0.0%	0	100.0%	1	0.0%	0	0.0%	0	1
9	LED light bulbs with battery backup	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	undefined
10	WiFi plus Bluetooth smart socket	0.0%	0	0.0%	0	0.0%	0	0.0%	0	100.0%	1	1
11	Television(s)	0.0%	0	0.0%	0	100.0%	1	0.0%	0	0.0%	0	1
12	Central air conditioner(s)	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	undefined
13	Central heat pump(s)	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	undefined

QID118 - How clear was the information on the receipt for your Online Marketplace program purchase?

#	Answer	%	Count
1	Very clear	40.0%	2
4	Somewhat clear	20.0%	1
5	Somewhat unclear	40.0%	2
6	Not at all unclear	0.0%	0
	Total	100%	5

QID119 - What information was unclear? Please select all that apply.

#	Answer	%	Count
1	My final purchase price	0.0%	0
4	The amount of the rebate from I&M that I received	50.0%	1
5	The amount of sales tax/or how the tax was calculated	50.0%	1
6	Something else (Please describe)	0.0%	0
	Total	100%	2

QID45 - Overall, how satisfied are you with your I&M Online Marketplace experience?

#	Answer	%	Count
1	1 Very dissatisfied	20.0%	1
2	2	0.0%	0
3	3	0.0%	0
4	4	40.0%	2
5	5 Very satisfied	40.0%	2
	Total	100%	5

QID48 - 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	66.7%	4
2	Rent	16.7%	1
3	Own and rent to someone else	0.0%	0
98	Don't know	0.0%	0
99	Prefer not to state	16.7%	1
	Total	100%	6

QID49 - Which of the following best describes your home? Is it a...

#	Answer	%	Count
1	Manufactured home	0.0%	0
2	Single-family house detached from any other house	83.3%	5
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	0.0%	0
5	Apartment in a building with 4 or more units	0.0%	0
6	Other (Please specify)	0.0%	0
98	Don't know	0.0%	0
99	Prefer not to state	16.7%	1
	Total	100%	6

QID50 - What fuel does your main water heater use?

#	Answer	%	Count
1	Electricity	33.3%	2
2	Natural Gas	50.0%	3
3	Propane	0.0%	0
4	Something else (Please specify)	0.0%	0
5	Don't heat home	0.0%	0
98	Don't know	0.0%	0
99	Prefer not to state	16.7%	1
	Total	100%	6

QID51 - Including yourself, how many people currently live in your home year-round?

#	Answer	%	Count
1	1	16.7%	1
2	2	16.7%	1
3	3	16.7%	1
4	4	33.3%	2
5	5	0.0%	0
6	6	0.0%	0
7	7	0.0%	0
8	8 or more	0.0%	0
98	Don't know	0.0%	0
99	Prefer not to state	16.7%	1
	Total	100%	6

QID52 - 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	0.0%	0
3	\$20,000 to less than \$30,000	0.0%	0
4	\$30,000 to less than \$40,000	16.7%	1
5	\$40,000 to less than \$50,000	0.0%	0
6	\$50,000 to less than \$75,000	16.7%	1
7	\$75,000 to less than \$100,000	33.3%	2
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
98	Don't know	0.0%	0
99	Prefer not to state	33.3%	2
	Total	100%	6