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Impact and Process Evaluation of 2015 (PY8) Ameren Illinois Company Commercial & Industrial Standard Efficiency Program

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CADMUS

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1. Executive Summary

This report presents the results of Opinion Dynamics's evaluation of the Ameren Illinois Company (AIC) Commercial and Industrial (C&I) Standard Program for electric and gas energy efficiency (referred to as the Standard Program). It covers the program's performance in Program Year 8 (PY8), which ran from June 1, 2015 through May 31, 2016. According to the PY8 Implementation Plan, AIC expected savings from this program to account for 37% of the overall portfolio electric savings and 30% of overall portfolio therm savings (including both residential and commercial programs).

The Standard Program offers AIC business customers fixed incentives for the installation of specific energy efficiency measures. The Core Program covers lighting, variable frequency drives (VFDs), HVAC equipment, refrigeration/grocery equipment, commercial kitchen equipment, steam traps, and other measures. Leidos is the main program implementer.

Additionally, the Standard Program includes the Ameren Illinois Business Customer Online Store (Online Store) offering that is available to all electric business customers. The Online Store, maintained by Energy Federation, Inc. (EFI), offers a variety of energy-saving lighting products, including CFLs, LEDs, and occupancy sensors, as well as smart power strips. The program also continued its Green Nozzle initiative in PY8, which is a relatively small offering that provides free efficient water nozzles to gas customers and to customers in the food service sector who use electric or natural gas water heating. Finally, in PY8, the program expanded its midstream lighting pilot program (introduced in PY7) into a full Instant Incentives offering, providing incentives to customers purchasing lighting at lighting distributor retail locations to help increase the market share of efficient lighting products.

Our evaluation of the Standard Program included impact and process assessments. We reviewed program materials and program-tracking data, interviewed program administrators and implementation staff, interviewed a variety of Standard Program partners (Energy Advisors, Program Allies, and Instant Incentives distributors), and conducted other research. Our quantitative research included surveys of customers who purchased lighting through the Instant Incentives program and the Online Store. We also collected and analyzed data to support updated net-to-gross ratios (NTGRs) for prospective application to the Online Store and the first NTGR of the Instant Incentives offering, also for prospective application.

Below we present the key findings of the PY8 evaluation.

Program Impacts

Our participant verification activities showed that AIC is accurately tracking the measures installed. As shown in Table 1, the electric and gas gross realization rates for all program components are close to 100%. As outlined in the evaluation plan, the team applied Illinois Stakeholder Advisory Group (SAG)-approved NTGRs to the program's gross savings to develop estimates of net savings. Table 1 also provides the PY8 Standard Program gross and net impacts. The PY8 Standard Program achieved 75,850 MWh and 11.782 MW in net electric savings and 3,058,659 therms in net gas savings. This level of savings enabled the program to meet its internal PY8 electric goals and greatly exceed its internal gas goals.

Table 1. Standard Program Impact Summary

Savings Category	Ex Ante Gross	Realization Rate	Ex Post Gross	NTGR	Ex Post Net
Energy Savings (MWh)					
Core Program	88,560	100.1%	88,638	0.78	69,400
Instant Incentives	6,207	81.5%	5,060	0.77	3,888
Online Store	2,934	105.0%	3,081	0.83	2,557
Green Nozzle	5	100.0%	5	0.92	4
Total MWh Savings	**97,706**	**99.1%**	**96,784**	**N/A**	**75,850**
Demand Savings (MW)					
Core Program	13.281	100.0%	13.286	0.78	10.376
Instant Incentives	1.208	81.6%	0.985	0.77	0.757
Online Store	0.712	109.8%	0.781	0.83	0.648
Green Nozzle	0	N/A	0	N/A	0
Total MW Savings	**15.200**	**99.0%**	**15.052**	**N/A**	**11.782**
Gas Savings (Therms)					
Core Program	3,406,745	100.0%	3,406,423	0.90	3,058,060
Instant Incentives	0	N/A	0	N/A	0
Online Store	0	N/A	0	N/A	0
Green Nozzle	673	100.0%	673	0.89	599
Total Therm Savings	**3,407,418**	**100.0%**	**3,407,096**	**N/A**	**3,058,659**

Note: Due to rounding, not all totals sum to 100.

Key Findings and Recommendations

AIC successfully implemented the Standard Program in PY8 and met both its electric and gas savings goals. Although program participation decreased by 16% relative to PY7, the program's gross energy savings increased by 13%; growth in energy savings continues trends of the past few years. The program's measure mix remained similar to past years; namely, lighting projects represented around three-quarters of all projects completed through the program, and the Core Program represented the vast majority of all Standard Program savings. AIC made only a few minor adjustments to the Standard Program during PY8. The most notable change was expanding the midstream Instant Incentives program from a pilot to a full offering.

Program stakeholders with whom we spoke as part of this evaluation reported few barriers to participation or problems with program processes. AIC received positive feedback from key program support stakeholders including the Standard Program's Program Allies, Energy Advisors, and midstream lighting distributors that distributed the Instant Incentives offering. Participating lighting distributors interviewed as part of this evaluation were supportive of the full-scale offering overall, but did offer several minor adjustments that AIC could make to streamline delivery as the offering matures. Customers who purchased lighting through the midstream Instant Incentives offering were also satisfied with their experiences overall. In terms of the Online Store, AIC received positive feedback from business customers who purchased lighting online, as it has in past years. Overall, the high customer and stakeholder satisfaction levels, combined with savings realization rates near 100%, indicate that the AIC Standard Program is running smoothly.

Based on our research, we provide the following recommendations for the program:

- **Finding #1.** Our impact evaluation found electric and gas gross realization rates of 100% or nearly 100% for the program, indicating that the program is tracking its savings and projects carefully. However, we continue to find minor discrepancies in the database (detailed in the impact section) including wattage assumptions that do not reflect the latest TRM updates and incorrect formulas used for some measures.
  - **Recommendation #1.** While these issues remained very minor, we recommend incorporating all Illinois Statewide Technical Reference Manual Version 4.0 (IL-TRM V4.0) updates and applying the correct measure assumptions consistently across all measures to ensure AIC continues achieving high realization rates moving forward.
- **Finding #2.** Participants learn about the program in a variety of ways, including through contractors; AIC key account executives (KAEs); the program website; or through direct marketing, such as emails or bill inserts. Energy Advisors noted how opportunities may be lost if marketing efforts do not reach the right audience or marketing materials do not make it into the hands of decision makers.
  - **Recommendation #2.** The program should continue to diversify its marketing and outreach efforts to ensure that it is reaching all types of businesses and the decision makers within those businesses.
- **Finding #3.** Program Allies are generally satisfied with their participation in the program, including the process of participating, the measures, the incentives, and program staff interactions. According to Program Allies, the program has not had a significant impact on their business practices, although a few interviewed allies noted that they have seen a positive increase in their sales since becoming a Program Ally.
- **Finding #4.** The first full year of the Instant Incentives offering went relatively smoothly, with overall high levels of satisfaction from participating lighting distributors and customers. In-depth interviews with about 33% of the PY8 distributors (n=27) and a web survey of 131 end-users and contractors who purchased lighting through the program identified several opportunities for AIC to streamline the offering moving forward. Key improvements, in the eyes of distributors, relate to the approved product list, as this aspect posed the biggest hurdle to seamless participation during PY8. Individual suggestions related to the processes of approving new products throughout the program year, improving the way AIC communicates changes to the approved product list to distributors, and switching to a sortable product list format for enhanced ease of use.
  - **Recommendation #3.** To improve lighting distributors' ease of participating in the Instant Incentives offering, AIC should consider how it can enhance the approved product list and streamline the process for updating it throughout the program year. First, we recommend providing distributors with a spreadsheet-based approved product list that enables sorting by product SKU, product type, and other attributes. Further, to the extent possible, we recommend AIC consider how it can streamline the processes of approving new products throughout the program year, and what type of product list update schedule could balance distributors' needs for predictability and adaptability.
- **Finding #5.** As it has in the past, the Online Store is working smoothly and is reaching its intended audience of small business customers. PY8 participants primarily identified themselves as relatively "small" or "medium" sized businesses for their industry. Participants considered the Online Store a convenient way to access discounted lighting products, were generally happy with their shopping

experiences, and often expressed interest in using the Online Store again in the future. While AIC uses the Online Store to expose customers to information about other savings opportunities (e.g. Instant Incentives distributors), PY8 participants expressed a low likelihood of participating in other AIC programs. Among the small number who had participated in another offering, few indicated that their Online Store participation played a role in their decision to do so. While this may point to an opportunity for the program to provide more active cross-program channeling, it is also possible, as suggested by survey responses, that the Online Store captures a different market segment than the Core Program.

- **Recommendation #4.** If AIC wishes to provide more active cross-program channeling, it could provide more-targeted marketing, such as suggesting other programs based on the customers' interaction with the website, e.g., promoting the Instant Incentives offering to customers who attempt to purchase quantities of lighting products in excess of the Online Store's purchasing limits.

- **Finding #6.** While not a major source of participant dissatisfaction, Energy Advisors suggested that the application process may be further streamlined.

  - **Recommendation #5.** Suggestions to improve the application process included allowing customers to enter information online once so that it does not need to be entered repeatedly for multiple applications, thereby increasing the speed of the review process.

2. Evaluation Methods

The Program Year 8 (PY8) assessment of the Ameren Illinois Company (AIC) Commercial and Industrial (C&I) Standard Program for electric and gas energy efficiency (referred to as the Standard Program) included both process and impact analyses. For most projects, we applied Illinois Stakeholder Advisory Group (SAG)-approved net-to-gross ratios (NTGRs) by end use. For projects conducted as part of a Staffing Grant, we determined NTGRs based on retrospective research through interviews and surveys with participants.

2.1 Research Objectives

The primary objective of the PY8 Standard Program evaluation was to provide estimates of gross and net electric and gas savings associated with the program. In particular, the PY8 impact evaluation sought to answer the following questions:

1. What were the estimated gross energy and demand impacts from this program?
2. What were the estimated net energy and demand impacts from this program?
3. What was the level of participant free-ridership (FR) and spillover (SO) for the Ameren Illinois Business Customer Online Store (Online Store) offering (for prospective application)?
4. What was the level of participant FR and SO for the Instant Incentives offering (for prospective application)?

In addition, the evaluation team conducted a targeted process assessment, with an emphasis on the Instant Incentives and Online Store offerings, focusing on the following research questions:

5. Program Participation
    a. What were the characteristics of participating customers? How many projects were completed? By how many different customers? What types of projects?
    b. Did customer participation meet expectations? If not, how different was it and why?
6. Program Design and Implementation
    a. Did the program as implemented change compared to PY7? If so, how and why and was this an advantageous change?
    b. How did Energy Advisors interact with customers and key account executives (KAEs)? Were Energy Advisors successful in bringing projects into the C&I portfolio and into initiatives such as Staffing Grants?
    c. What, if any, implementation challenges occurred in PY8, and how were they overcome?
    d. What changes could the program make to improve the customer experience and generate greater energy savings?
7. Program Allies
    a. How satisfied were Program Allies with their participation in the program?
    b. What was the impact of program participation on their business and practices?

c. What changes would Program Allies suggest to improve the program?

8. Offering-Specific Research
   a. Instant Incentives
      i. How satisfied were customers participating in the Instant Incentives offering with different aspects of the program?
      ii. What changes would customers suggest to improve the offering?
      iii. How satisfied were distributors participating in the Instant Incentives offering with different aspects of the program?
      iv. What changes would distributors suggest to improve the offering?
   b. Online Store
      i. Why did Online Store participants choose to use the Online Store? Are they likely to use the Online Store again in the future? Are they likely to participate in other AIC programs?
      ii. How satisfied were Online Store participants with their shopping experience?

2.2 Evaluation Tasks

Table 2 summarizes the PY8 evaluation activities conducted for the Standard Program.

Table 2. PY8 Standard Program Evaluation Methods

Activity	PY8 Process	PY8 Impact	Forward Looking	Details
Program and Implementation Staff Interviews	✓			Explore changes made since PY7 and gather information about program marketing and implementation, with a focus on non-Core offerings, including the Online Store and Instant Incentives offerings.
Review of Utility Data and Program Materials	✓	✓		Comprehensive review of program data to assess any changes in program processes or impacts and to support evaluation planning, sampling, and reporting.
Energy Advisor Interviews	✓			Gather information about Energy Advisors' perceptions of customer interest in the program, interactions with customers, program processes for coordination between the Energy Advisors and KAEs, success bringing projects into the program, and suggestions for program improvement.
Program Ally Interviews	✓			Investigate program participation processes, trade ally and participant satisfaction, barriers to participation, and impacts of program participation on trade ally business and practices.
Online Store Participant Survey	✓	✓	✓	Investigate program processes and participant satisfaction, verify installation of equipment, and gather data for estimation of NTGR for prospective application in PY10.
Instant Incentives Distributor Interviews	✓	✓	✓	Investigate program processes and distributor satisfaction and gather data for estimation of NTGR for prospective application in PY10.
Instant Incentives Participant Survey	✓	✓	✓	Investigate program processes and participant satisfaction, verify installation of equipment, and gather data for estimation of NTGRs.
Gross Impact Analysis		✓		Estimates gross impacts through review of the program-tracking database and verification of Illinois Statewide Technical Reference Manual Version 4.0 (IL-TRM V4.0) deemed values.
Net Impact Analysis		✓	✓	Estimate net impacts using SAG-approved NTGR values for PY8.

2.2.1 Program and Implementation Staff Interviews

We conducted three in-depth interviews: two with the key program operations staff at Leidos (the main program implementer) and one with program marketing staff at Leidos. The interviews focused on program performance in PY8, Business Program-wide changes,[1] and changes to the C&I Standard Program since PY7, as well as anticipated future developments and changes.

2.2.2 Review of Utility Data and Program Materials

We conducted a comprehensive review of all program materials and tracking data, including the program's implementation plan, applications, and extracts from the program-tracking database. We received extracts from the program-tracking database in April 2016 for evaluation planning and survey sampling, and we

[1] The AIC Business Program encompasses three AIC programs: the C&I Standard Program, the C&I Custom Program, and the C&I Retro-Commissioning Program.

received updated data in May 2016, July 2016, and finally in August 2016, when the program implementer finalized the PY8 database.

2.2.3 Energy Advisor Interviews

We conducted in-depth interviews with the seven Energy Advisors active in PY8. The interviews focused on Energy Advisors' roles and responsibilities, program processes, program outreach and customer interactions, customer understanding of the marketplace, and the opportunities for program improvement. This activity was conducted in tandem with the C&I Custom Program evaluation.

2.2.4 Program Ally Interviews

In November/December 2015, we interviewed 16 Program Allies to investigate such topics as program participation processes, trade ally satisfaction and their perception of participant (customer) satisfaction, barriers to participation, and impacts of program participation on trade ally business and practices. Of particular interest was the exploration of the effectiveness of bonuses and trade allies' perceptions of recent changes in the AIC portfolio (e.g., new implementers in the Illinois Power Agency [IPA] C&I portfolio) and any resulting confusion in the marketplace. This activity was conducted in tandem with the Custom Program evaluation. A stand-alone findings memo was delivered to AIC in February 2016; for convenience, we have embedded a copy of that memo as an appendix to this report (Appendix A).

2.2.5 Online Store Participant Survey

The evaluation team conducted a quantitative internet survey with PY8 participants who purchased lighting products through the Online Store. We used the survey to gather data to support estimation of a NTGR for the Online Store offering for prospective application starting in PY10 and to support the estimation of in-service rates (ISRs) for the offering (i.e., verified measure receipt and installation). These ISRs will be recommended for inclusion in future versions of the IL-TRM[2] but were not used in the PY8 impact evaluation. The survey also included questions to support a focused assessment of program processes and participant satisfaction.

The evaluation team formed a sample frame of PY8 Online Store participants by aggregating customers' PY8 orders by measure type and excluding participants with invalid email addresses. We attempted a census of program participants in the resulting sample frame (n=1,052). By conducting a census of program participants, we removed the possibility of sampling error in our NTGR estimates. Table 3 describes the distribution of participants and measures across the PY8 Online Store population, sample frame, and completed surveys. Ultimately, we completed surveys with 10% of PY8 Online Store participants who collectively accounted for 16% of ex ante savings.

[2] The IL-TRM V4.0 applies an ISR of 100% for programs that require the customer to complete a sign off form indicating the bulbs are not placed into storage. Since the Online Store program requires this form, we apply the IL-TRM V4.0 recommended ISR of 100% and will recommend our PY8 researched ISRs for inclusion into future versions of the IL-TRM.

Table 3. Completed Online Store Participant Interviews

Measure	Population		Sample Frame		Completed Surveys (% of Population)			
	Participant	Ex Ante kWh	Participant	Ex Ante kWh	Participant	%	Ex Ante kWh Savings	%
Free CFLs	1,138	934,941	859	705,328	92	8%	74,204	8%
Standard CFLs	137	670,566	129	639,615	22	16%	138,832	21%
Specialty CFLs	149	218,762	148	217,248	21	14%	43,497	20%
Standard LEDs	108	144,455	107	143,855	21	19%	32,114	22%
Specialty LEDs	142	371,741	141	371,376	28	20%	72,454	19%
Exterior Lights	14	108,612	14	108,612	4	29%	30,770	28%
Occupancy Sensors	82	248,579	82	248,579	15	18%	45,259	18%
LED Exit Signs	78	114,162	77	112,743	14	18%	17,000	15%
Downlights	38	122,045	38	122,045	11	29%	29,582	24%
Power Strips	1	103	0	0	0	0%	0	0%
Total[a]	**1,333**	**2,933,966**	**1,052**	**2,669,401**	**131**	**10%**	**483,712**	**16%**

[a] Participation by measure does not sum to total participation because participants who purchased multiple types of measures are counted under each measure type.

Survey Dispositions and Response Rate

We fielded the survey of Online Store participants from August 29 to September 21, 2016. Table 4 provides the final survey dispositions.

Table 4. Online Store Participant Survey Dispositions

Disposition	Input[a]	Total
Completes	I	131
Bounce Backs	X2	1
Known Ineligibles (Replied with reason)	X1	4
Known Ineligibles (Screened out)	X1	8
Refused (Replied but refused)	U1	0
Mid-interview Terminates - Break-offs (Before screeners)	U1	28
Mid-interview Terminates - Partials	N	46
No Response	U1	834
Total Participants in Sample	**N/A**	**1,052**

[a] Inputs are for American Association for Public Opinion Research (AAPOR) response and cooperation rates detailed in Appendix A.

Table 5 provides the response and cooperation rates. Appendix A provides information on the methodology used to calculate response rates (RRs) and cooperation rates (CRs) for web surveys.

Table 5. Online Store Participant Survey Response and Cooperation Rates

AAPOR Rate	Percentage
RR3	13%
CR3	64%

2.2.6 Instant Incentives Distributor Interviews

We conducted in-depth interviews with 10 distributors participating in the Instant Incentives offering to provide AIC with insight into distributors' experience with the offering and any barriers limiting participation. We also used the interviews as a supplementary source of data to inform a number of gross and net impact parameters, including FR and SO, and to provide insight on current T12 market dynamics. We selected a purposive sample of 15 distributors that were active in PY8, representing a mix of distributors that began participating in the offering in its pilot phase and distributors that entered the offering more recently. From this sample, we completed nine in-depth interviews covering 10 participating distributor locations. Table 6 shows the interview dispositions and RR.

Table 6. Instant Incentives Distributor Interview Dispositions

Participation	Value
Total Population	27
Sample Frame	15
Completed	10
Refused	1
Never Available	4
RR	67%

2.2.7 Instant Incentives Participant Survey

The evaluation team conducted a quantitative internet survey with customers who purchased lighting through the Instant Incentives offering during PY8. We used the survey to gather data to support estimation of a NTGR for prospective application in PY10 and to support the estimation of an ISR for the offering.[3] As discussed below, we applied the estimated ISRs as part of the PY8 impact evaluation following TRM guidance that Year 1 (purchase year) lighting installations can be characterized "using assumptions provided above or evaluated assumptions if available." We also expect to recommend these ISRs for inclusion in future versions of the IL-TRM. The survey also included questions to support a targeted assessment of program processes and participant satisfaction.

The evaluation team attempted a census of all participants in the Instant Incentives offering with a valid email address (n=161). For the purposes of sampling and survey fielding, the evaluation team aggregated all purchases that each participant made during PY8. Two of the 161 customers purchased lighting at more than one distributor during PY8; for these customers, we considered only the purchases made at the distributor that the participant had most recently purchased lighting from.

The survey focused on LED technologies, which account for nearly all (97%) of the ex ante gross savings achieved by the offering in PY8. While the survey asked respondents to verify receipt and installation of all purchased LED products, the NTGR battery focused on one bulb type per respondent to reduce the length of

[3] We apply our PY8 researched ISRs to ex post savings as suggested by the IL-TRM V4.0 for Year 1 installs, under the "Deferred Installs" section of 4.5.1 and 4.5.4.

the survey and minimize respondent fatigue. For participants who purchased multiple types of LEDs, we asked about the type of LED that was purchased the least-frequently among program participants.[4] Therefore, if a participant purchased standard CFLs, standard LEDs, and linear LEDs, the NTGR battery asked him or her to think only about the linear LED purchase. As can be seen in Table 7, although linear LEDs accounted for the largest share of program LED sales, they were a relatively uncommon product choice among participants. Thus, linear LEDs were given the highest priority, followed by standard LEDs and then specialty LEDs. We conducted surveys with 10% of PY8 Instant Incentives participants who collectively accounted for 7% of ex ante savings.

[4] In contrast to randomly selecting measures, which would have resulted in capturing a small number of participants installing rarer measures, we prioritized bulb types that fewer participants purchased in an attempt to capture a large enough number of respondents to accurately assess free-ridership among those who purchased rarer measures.

Table 7. Completed Instant Incentives Participant Interviews

Measure	Population			Sample Frame			Completed Surveys					
	Participants	Measures	Ex Ante kWh	Participants	Measures	Ex Ante kWh	Participants	% of Population	Measures	% of Population	Ex Ante kWh	% of Population
Linear LED	56	34,183	2,163,371	32	32,278	2,086,181	6	11%	1,189	3%	81,704	4%
Specialty LED	172	11,187	2,504,192	103	9,371	2,124,330	9	5%	292	3%	72,563	3%
Standard LED	108	9,367	1,347,831	77	7,745	1,217,950	12	11%	1,857	20%	274,206	20%
Standard CFL	9	811	85,527	5	67	17,402	–	–	–	–	–	–
Occupancy Sensors	2	120	105,640	1	100	88,033	–	–	–	–	–	–
Total[a]	**273**	**55,668**	**6,206,561**	**161**	**49,561**	**5,533,896**	**27**	**10%**	**3,338**	**6%**	**428,473**	**7%**

[a] Participation by measure does not sum to total participation because participants who purchased multiple types of measures are counted under each measure type.

Survey Dispositions and Response Rate

We fielded the survey of Instant Incentives participants from October 25 to November 9, 2016. Table 8 provides the final survey dispositions.

Table 8. Instant Incentives Participant Survey Dispositions

Disposition	Input[a]	N
Completes	I	28
Bounce Backs	X2	1
Known Ineligibles (Replied with reason)	X1	0
Known Ineligibles (Screened out)	X1	0
Refused (Replied but refused)	U1	1
Mid-interview Terminates - Break-offs (Before screeners)	U1	8
Mid-interview Terminates - Partials	N	8
No Response	U1	115
Total Participants in Sample	**N/A**	**161**

[a] Inputs are for AAPOR response and cooperation rates detailed in Appendix A.

Table 9 below provides the response and cooperation rates. Appendix B provides information on the methodology used to calculate RRs and CRs for telephone surveys.

Table 9. Instant Incentives Participant Survey Response and Cooperation Rates

AAPOR Rate	Percentage
RR3	18%
CR3	62%

2.2.8 Gross Impact Analysis

To develop our list of PY8 projects, we started with the full application database and filtered on PY8, the applicable program name (e.g., standard lighting), and application status (paid). This gave us our verified list of projects for which we calculated savings. To estimate PY8 ex post gross savings, we used the IL-TRM V4.0 and engineering review. The following table summarizes the gross impact analysis approach used for each component of the Standard Program.

Table 10. Standard Program Gross Impact Methods by Component

Program Component	Application of IL-TRM V4.0 Savings Values	Engineering Review	ISR from Participant Survey
Core Program	✓	✓	
Online Store	✓		
Instant Incentives	✓		✓
Green Nozzle	✓		

The following sections provide additional details about each of the methods employed.

Core Program

To determine gross impacts associated with the Core Program, we reviewed the program-tracking database and verified the correct application of the IL-TRM V4.0. To conduct the engineering review we:

1. Verified measures in the AMPlify application database with the individual measure-specific databases in AMPlify.
2. Used algorithms and values from the IL-TRM V4.0 to estimate ex post savings as applicable.
3. Reviewed spreadsheets from the program implementer that calculate ex ante savings and compared the calculated values in the spreadsheets with the IL-TRM V4.0 algorithms.

Online Store

We used two methods to verify savings for the Online Store offering. First, we reviewed the algorithms provided by the implementer and compared them to the IL-TRM V4.0 methodology. Second, we performed an ex post analysis using the same algorithms with data from the program-tracking database, supplemented with installation verification information from the Online Store participant survey for a comparison. Installation verification information was not incorporated in the development of the gross realization rate used to produce ex post gross impacts for Online Store, as participants complete a sign-off form allowing for the use of a deemed 100% ISR, but is provided here in support of future IL-TRM update processes. A description of the ISR algorithm is provided in Appendix E.

Instant Incentives

We used two methods to verify savings for the Instant Incentives offering. First, we reviewed the algorithms provided by the implementer and compared them to the IL-TRM V4.0 methodology. Second, we performed an ex post analysis using the same algorithms with data from the program-tracking database, supplemented with installation verification information from the Instant Incentive participant survey. Installation verification information was incorporated in the development of the gross realization rate used to produce ex post gross impacts for Instant Incentives. As described in the methods section above, the IL-TRM V4.0 allows for the use of evaluated assumptions when available. A description of the ISR algorithm is provided in Appendix E.

Green Nozzle

We verified participation in the Green Nozzle initiative by examining the program-tracking database to ensure customer eligibility. We then calculated gross impacts based on the IL-TRM V4.0.

2.2.9 Net Impact Analysis

The evaluation team applied NTGRs approved by the SAG to PY8 program savings. Table 11 summarizes the NTGRs used in the net impact analysis.

Table 11. SAG-Approved PY8 NTGRs

Measure Type	Electric NTGR	Gas NTGR
Lighting	0.78	—
Motor	0.81	—
HVAC	0.44	0.80
Specialty	0.83	0.90
Steam Trap	—	0.90
Online Store	0.83	—
Green Nozzles	0.92	0.89
Instant Incentives - CFLs	0.68	—
Instant Incentives - LEDs	0.77	—

2.3 Sources and Mitigation of Error

Table 12 provides a summary of possible sources of error associated with data collection conducted for the Custom Program. We discuss each item in detail below.

Table 12. Possible Sources of Error

Research Task	Survey Error		Non-Survey Error
	Sampling Error	Non-Sampling Error	
Instant Incentives Distributor Interviews	N/A, purposive sampling	Measurement error Non-response and self-selection bias Data processing error	N/A
Online Store Participant Survey	N/A, census attempt	Measurement error Non-response and self-selection bias Sample frame error	N/A
Instant Incentives Participant Survey	N/A, census attempt	Measurement error Non-response and self-selection bias Sample frame error	N/A
Gross Impact Calculations	N/A	N/A	Analysis error
Net Impact Calculations	N/A	N/A	Analysis error

The evaluation team took a number of steps to mitigate potential sources of error throughout the planning and implementation of the PY8 evaluation.

Survey Error

- **Sampling Error**
  - **Online Store Participant Survey.** The evaluation team conducted a census attempt of Online Store participants and therefore there is no sampling error associated with the survey results. We surveyed 131 customers out of a population of 1,333.
  - **Instant Incentives Participant Survey.** The evaluation team conducted a census attempt of Instant Incentives participants and therefore there is no sampling error associated with the survey results. We surveyed 28 customers out of a population of 273.

- Non-Sampling Error
  - **Measurement Error**. The validity and reliability of survey data were addressed through multiple strategies. First, we relied on the evaluation team's experience to create questions that align with of the idea or construct that they were intended to measure (i.e., face value validity). We reviewed the questions to ensure that we did not ask double-barreled questions (i.e., questions that ask about two subjects, but allow only one response) or loaded questions (i.e., questions that are slanted one way or another). We also checked the overall logical flow of the questions to avoid confusing respondents, which would decrease reliability.

    All survey instruments were reviewed by key members of the evaluation team and by AIC and Illinois Commerce Commission (ICC) staff. To determine whether question wording was clear and unambiguous, we pretested each survey instrument and reviewed the pretest survey data. We also used the pretests to assess whether the length of the survey was reasonable, and we shortened the survey as needed.
  - **Non-Response and Self-Selection Bias – Instant Incentives Distributor Interviews**. The evaluation team conducted a targeted series of in-depth interviews with Instant Incentives distributors. We focused the interviews on a range of active distributors representing a mix of distributors that began participating in the offering in its pilot phase and distributors that entered the offering in PY8. This purposive sampling approach was designed to reach distributors with enough PY8 experience to provide feedback on key program components. We spoke with nine individuals representing 10 distributor business locations out of a population of 27 active distributors. We attempted to mitigate possible non-response and self-selection bias by contacting each prospective respondent in the sample multiple times at different times of day, as appropriate, until we received a firm refusal or filled our quota.
  - **Non-Response and Self-Selection Bias – Online Store and Instant Incentives Surveys**. Because the RRs for the Online Store and Instant Incentives surveys were 13% and 18%, respectively, there is the potential for non-response bias. We attempted to mitigate possible bias by sending multiple reminder emails to each prospective respondent in our sample at different times of day and week. To assess whether evidence of non-response bias existed, we compared survey respondents to the population based on business type, number of projects, and project savings. We found no evidence to suggest that non-respondents differed significantly from respondents.
  - **Data Processing Error.** The team addressed processing errors by using trained, experienced Opinion Dynamics analysts to conduct all interviews and by checking the quality and consistency of completed survey data.
  - **Sample Frame Error.** We addressed external validity (the ability to generalize any findings to the population of interest) through the development of the sample frames that included all eligible members of the population.

Non-Survey Error

- Analysis Error
  - **Gross Impact Calculations.** We applied IL-TRM V4.0 calculations to the participant data in the tracking database to calculate gross impacts. To minimize data analysis error, a separate team member reviewed all calculations to verify their accuracy.
  - **Net Impact Calculations.** We applied deemed NTGRs to estimated gross impacts to derive the program's net impacts. To minimize analytical errors, all calculations were reviewed by a separate team member to verify their accuracy.

3. Detailed Evaluation Findings

3.1 Process Findings

The evaluation team's process-related research focused on program awareness, program experience, and barriers to participation. The research also considered how any changes in program implementation from PY7 to PY8 might have affected these areas. Our results are based on a review of program data, in-depth interviews with program staff (including Energy Advisors) and Instant Incentives distributors, and quantitative surveys of Online Store and Instant Incentives participants.

3.1.1 Program Description

The Standard Program offers AIC business customers fixed incentives for installing specific energy efficiency measures. Incentives are delivered through four offerings:

- **Core Offering.** The Core Offering covers lighting, variable frequency drives (VFDs), HVAC equipment, refrigeration/grocery equipment, commercial kitchen equipment, steam traps, and other measures.
- **Instant Incentives.** The Instant Incentives offering is a midstream lighting program that offers discounts at the point of sale covering a variety of standard and specialty CFLs and LEDs. AIC first piloted the offering in PY7, and, in PY8, transitioned Instant Incentives to a full-scale offering to help increase the market share of efficient lighting products.
- **Online Store.** The Standard Program operates an online store that offers all electric business customers a variety of energy-saving products, including CFLs, LEDs, occupancy sensors, and LED exit signs.
- **Green Nozzle Initiative.** The Standard Program also includes the Green Nozzle initiative, which offers free low-flow pre-rinse nozzles to all AIC gas customers, as well as customers in the food service sector who use electric water heating. The limited participation in the initiative during PY8 reflects AIC's decision in PY5 to place less emphasis on participation in this effort. As a result, participation has continued to decrease, with very few nozzles distributed in PY8.

3.1.2 Program Participation

The Core Offering is responsible for 91% of the Standard Program's ex ante gross MWh savings and virtually 100% of the Standard Program's ex ante gross therm savings. Table 13 displays the contributions of each offering to the Standard Program's overall savings.

Table 13. Summary of Standard Program Offerings

Offering	Total Projects	Ex Ante Gross Savings		
		MWh	MW	Therms
Core Offering	1,062	88,560	13.3	3,406,745
Instant Incentives	145	6,207	1.2	0
Online Store	1,477	2,934	0.7	0
Green Nozzle	4	5	0.0	673
Total	**2,688**	**97,706**	**15.2**	**3,407,418**

Core Program

Table 14 summarizes the Core Offering projects completed in PY8 by end use. The distribution of projects and savings by end use is consistent with that seen in recent program years. The vast majority of projects completed through the Core Offering in PY8 (95%) have associated electric savings, while 7% have gas savings and only 3% have both. Lighting projects accounted for more than half of electric savings (57%) and nearly three-quarters of PY8 projects (73%) included lighting measures. As typical from past program years, steam traps contributed nearly all achieved gas savings (98%).

Table 14. Summary of Core Program Participation by End Use

End Use	Projects		Ex Ante Gross Electric Savings		Ex Ante Gross Gas Savings	
	#	%	MWh	%	Therms	%
Lighting	780	73%	50,303	57%	–	–
Specialty Equipment	120	11%	1,579	2%	6,655	<1%
HVAC	81	8%	1,837	2%	77,532	2%
Steam Traps	39	4%	–	0%	3,322,558	98%
VFDs	38	4%	33,730	38%	–	–
Leak Survey and Repair	4	<1%	1,112	1%	–	–
Total	**1,062**		**88,560**		**3,406,745**	

Note: Columns may not sum to 100% due to rounding.

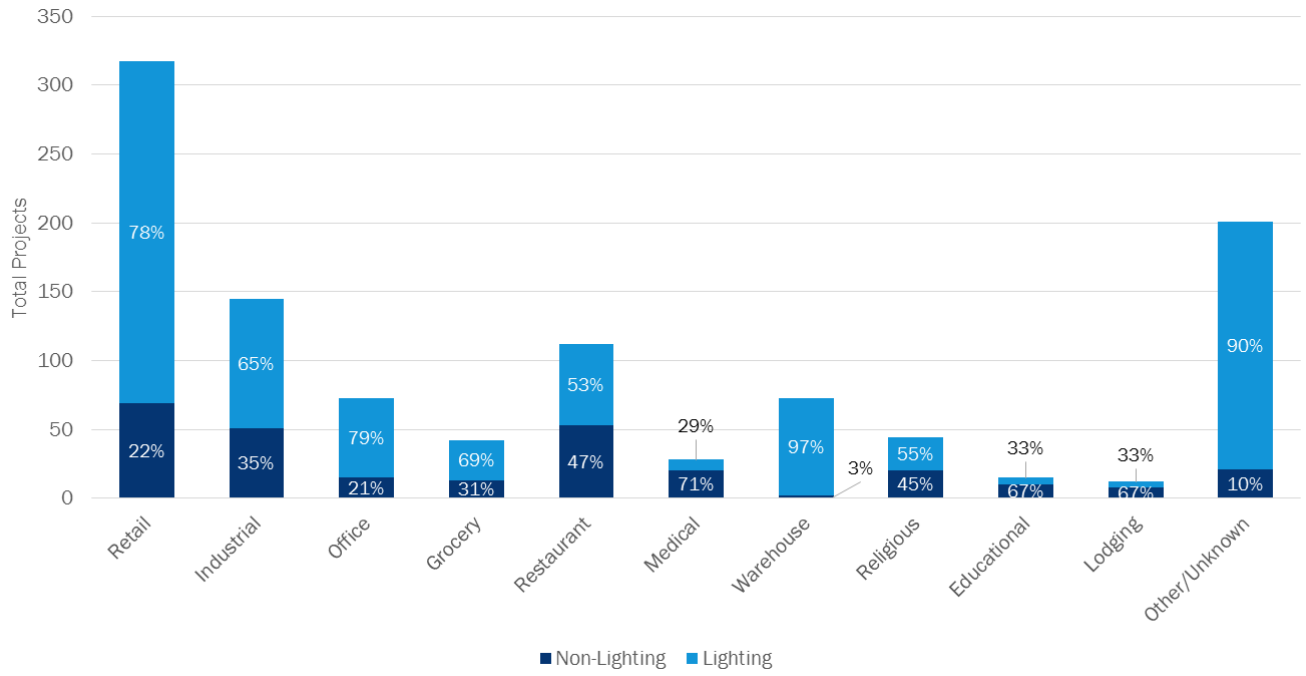
The number of Standard Program projects declined by approximately 16% from PY7 to PY8—from 1,264 to 1,062 projects (Table 15), but gross savings increased substantially. Gross electric savings increased from 78,415 MWh in PY7 to 88,560 MWh in PY8, a 13% increase. Therm savings more than doubled from PY7 to PY8. Based on goals reported in the program's implementation plan, the program exceeded its PY8 goals for electric savings and substantially exceeded its goals for gas savings. It is notable that two large steam trap projects each accounted for approximately 45% of total PY8 gas savings. According to program staff, implementers invest significant project management resources to ensure that large projects such as these are on track to meet target completion dates; these efforts are paramount to the program meeting its goals since it would be challenging to make up for any shortfalls in large projects' scope or timing.

Table 15. Historical Standard Program Core Offering Participation

Program Year	Projects #	Ex Ante Gross Electric Savings MWh	Ex Ante Gross Gas Savings Therms
PY4	1,560	70,621	507,492
PY5	1,297	98,774	2,040,085
PY6	910	64,604	975,046
PY7	1,264	78,415	1,523,095
PY8	1,062	88,560	3,406,745

According to the program-tracking database, most PY8 Core projects were completed in retail/service facilities (30%). Other major facility types represented were manufacturing/industrial facilities (14%), restaurants (10%), warehouses (7%), and offices (7%). As discussed above, lighting projects accounted for 73% of total PY8 core projects; accordingly, lighting projects represent the majority of projects installed at most facility types (Figure 1). The ratio of lighting projects to non-lighting projects was highest for warehouses and other or unknown types of facilities; lighting projects were 90% or more of projects at these facility types. Only medical, educational, and lodging facilities installed more non-lighting projects than lighting projects. Figure 1 shows the breakdown of projects by facility and project type.

Figure 1. PY8 Core Projects by Facility and Project Type



More than 700 unique companies participated in the program during PY8. Consistent with PY7, approximately 80% of participating companies completed only one project. Only a very small number of companies (less than 2% of those participating) completed more than four projects, but this group completed 19% of the projects submitted to the program in PY8. This group of companies is similar to large participants seen in past years completing more than four projects and spanned a range of sectors, with multiple companies in the retail, restaurant, and manufacturing sectors.

Instant Incentives

The Instant Incentives offering is designed to increase the implementation of energy-efficient lighting projects by increasing the market share of efficient lighting products that lighting distributors sell to their customers. The primary customer segment is end users, rather than contractors. In PY8, LEDs comprised the majority of Instant Incentives sales. Specialty LEDs (40%) contributed the largest share of PY8 savings. Additionally, while just 21% of participants purchased linear LEDs, linear LEDs were 61% of PY8 Instant Incentives product sales and comprised 35% of PY8 savings. Table 16 summarizes the Instant Incentives lighting sold in PY8 by lighting product.

Table 16. Summary of Instant Incentives Program Participation by End Use

	Participants		Measures		Ex Ante Gross Electric Savings	
Lighting Product	#	%[a]	#	%	kWh	%
Linear LED	56	21%	34,183	61%	2,163,371	35%
Specialty LED	172	63%	11,187	20%	2,504,192	40%
Standard LED	108	40%	9,367	17%	1,347,831	22%
CFL	9	3%	811	1%	85,527	1%
Occupancy Sensors	2	1%	120	<1%	105,640	2%
Total	273		55,668		6,206,561	

Note: Columns may not sum to 100% due to rounding.
[a] Customers who purchased more than one lighting product are counted in multiple categories.

According to program-tracking data, only 11% of PY8 participants were contractors (n=273), which indicates that the program is succeeding in focusing the program on distributors that primarily serve end-users. Respondents to the Instant Incentives participant survey (n=28) commonly indicated that their companies are in the medical (23%) or retail and service (15%) industry, while industries like entertainment/recreation (12%), offices (12%), multifamily (12%), industrial (12%), warehouse (8%), hotel/motel (4%), and others (4%),[5] were less represented. Respondents reported that their businesses tended to occupy medium to large facility spaces, with 59% of facilities between 20,000 and 100,000 square feet (n=18). Most respondents indicated that linear lighting (55%) or screw-based bulbs (26%) comprised the majority of their facility's lighting (n=3).[6]

Online Store

The Online Store is designed to offer commercial customers simple, convenient mail ordering of common energy efficiency products. The primary objective is to reduce the "hassle factor" associated with locating and purchasing limited quantities of energy efficiency equipment, primarily by small businesses.

The majority (71%) of discounted lighting sold through the Online Store in PY8 were CFLs (n=15,346 products). CFLs (including standard CFLs, specialty CFLs, and the free kits of four CFLs) also account for the majority (62%) of the Online Store's PY8 savings. Most participants requested a free kit of four CFLs (85%).Only 20% of the participants who requested a free CFL kit also made a purchase through the Online Store (n=1,138). Table 17 summarizes the Online Store lighting sold in PY8 by lighting product.

[5] Percentages do not add to 100 due to rounding.
[6] Participants were allowed to indicate more than one lighting type as the main type of lighting in their facility.

Table 17. Online Store Program Participation by End Use

Lighting Product	Participants		Measures		Ex Ante Gross Electric Savings	
	#	%[a]	#	%	kWh	%
Free CFLs	1,138	85%	4,580	30%	934,941	32%
Standard CFLs	137	10%	4,135	27%	670,566	23%
Specialty CFLs	149	11%	2,120	14%	218,762	7%
Standard LEDs	108	8%	1,115	7%	144,455	5%
Specialty LEDs	142	11%	1,721	11%	371,741	13%
Exterior Lights	14	1%	158	1%	108,612	4%
Occupancy Sensors	82	6%	476	3%	248,579	8%
LED Exit Signs	78	6%	509	3%	114,162	4%
Downlights	38	3%	531	3%	122,045	4%
Power Strips	1	<1%	1	<1%	103	<1%
Total	1,333		15,346		2,933,966	

Note: Columns may not sum to 100% due to rounding

[a] Measure participation does not sum to total participation because participants who purchased multiple measure types are counted under each measure type.

Based on the participant survey, more than three-quarters of Online Store participants (81%) describe their business as relatively "small" for their industry, as compared to 17% who identified as a "medium" company and only 2% who described their company as "large" (n=124). Almost all (98%) participants pay their own electric bill (n=128). Participants most commonly own and occupy their facility (83%), although 13% rent their facility and 4% own the facility but rent it to another party. Businesses purchasing lighting through the Online Store are well distributed across a mix of industries, with participants most commonly reporting that their company is in such an industry as retail/service (19%), nonprofit (12%), office (8%), or agriculture (8%). The remainder of businesses is distributed across a variety of industries, including multifamily, religious, and others. Overall, the program appears to have achieved its goal of reaching small businesses.

3.1.3 Program Design and Implementation

The structure of the AIC C&I programs in PY8 changed slightly as the program set up managers within the technical review group to better balance workloads. Overall, Standard Program operation was consistent with PY7 and very few implementation changes were made; the largest changes occurred with the program's marketing strategy and the increased emphasis on the Instant Incentives offering.

Marketing and Outreach

The program's marketing strategy for PY8 was focused on building on past success and refining specific aspects of the marketing program to optimize marketing techniques for each program. Overall, the marketing team took a staged approach in that they aimed to provide the customer with basic information at the first engagement. The program then provided customers with more detailed information as the customer took further actions. Furthermore, the program tended to focus its marketing efforts on program offerings that were the most straightforward for customers to engage with, such as lighting measures, steam traps, and VFDs.

Program staff made digital media marketing a priority for PY8. In PY7, the program began using reactive advertising platforms for use with social media and smartphones. This included website optimization so that

the website worked well on multiple types of devices (mobile, tablet, and desktop). In line with broader optimization goals, the marketing team also worked to refine these digital marketing techniques in PY8 with the goal of encouraging customers to not only visit the program's website, but also to take actions that may lead to program participation (i.e., download and fill out a program application). This process included using behavioral retargeting (delivering targeted program advertisements on non-program websites based on browsing history) and syncing vendor websites with the Instant Incentives website so that customers could easily navigate between the sites.

The Standard Program employed several new marketing strategies in PY8 primarily focused on the Online Store and the Instant Incentives offerings. AIC C&I program staff felt that these targeted programs were among the C&I marketing efforts' biggest areas of success. The Instant Incentives and Online Store marketing efforts were tied together, as the Online Store directed customers to the Instant Incentives web page. In addition, the marketing team ran specific promotions through the Online Store, such as free CFL giveaways and instant lighting discounts on CFLs at the point of online purchase. As with all C&I programs, the Standard program marketing team also brought back webinars (which had been discontinued) to provide educational material on specific measures available through the program. These webinars were targeted to specific measures of interest; according to program staff, these webinars were effective in generating customer interest in the measures. In addition, efforts continued to put on several industrial "lunch and learn" events to inform customers about particular measures of interest.

The marketing team continued to reach out to industry associations and Program Allies for assistance with marketing efforts. Allies were given the opportunity to go to sales trainings and kept up to date about program activities. In PY8, AIC began providing Program Allies with co-branded marketing materials with AIC's logo and the ally's logo. Program staff received positive feedback from Program Allies about the co-branded marketing material and felt that this approach helped improve AIC's ties with the allies.

Energy Advisor Interviews

In addition to dedicated program marketing, technical review, and call center staff, the AIC Business Program has seven regional Energy Advisors who market and support energy efficiency projects to AIC C&I customers. The Energy Advisors help customers identify and address opportunities for energy efficiency through participation in the Standard, Custom, and Retro-Commissioning programs. As part of our evaluation, we interviewed the seven Energy Advisors active in the AIC Business Program during PY8.

AIC's service territory is divided into seven geographic territories, each the responsibility of an Energy Advisor and containing about the same number of AIC business customers. The Energy Advisors reported no issues with the size of their geographical areas or their customer responsibilities, and generally felt that the program was staffed at appropriate levels. Some of the Energy Advisors mentioned that the distribution of types of customers in each Energy Advisor's territory can influence the types of projects that are completed in a program year. For example, if a large gas customer that regularly implements energy efficiency projects is present in an Energy Advisor's territory, that Energy Advisor will typically have an advantage in meeting gas savings goals for the year. Despite these differences in the companies within each Energy Advisor's territory, the Energy Advisors thought the distribution of territories was fair and equitable.

The Energy Advisors were very positive about their role and about the operation and structure of the AIC Business Program as a whole. All felt that their job was well defined with reasonable responsibilities, and they agreed that the Energy Advisor team operated smoothly. Energy Advisors felt that the AIC Business Program had the right staff levels as well. The sections below provide more insight into the Energy Advisors' role, experiences, and recommendations.

Program Mechanics and Coordination

In addition to regularly scheduled communication and meetings, Energy Advisors reported frequent informal communications with other Energy Advisors. When they encountered unfamiliar technical issues, the Energy Advisors reported frequently reaching out to their colleagues who might be more skilled in that area, as several Energy Advisors had specific technology expertise and some served as technical reviewers.

The numerous goals set for Energy Advisors included personal goals and program-wide goals, such as goals for savings and for contacts with potential customers, for all seven combined. The Energy Advisors felt that goals were thoughtfully set and achievable, and they generally reported being able to meet them in PY8.

The Energy Advisors also reported good working relationships and substantial coordination with AIC KAEs during PY8. KAEs have their own energy efficiency goals to meet, so there is substantial motivation for KAEs and Energy Advisors to help large customers, managed by the KAEs, complete projects through the program. Energy Advisors also cited the well-developed relationships between KAEs and large customers as beneficial in helping convert more efficiency opportunities into projects. The Energy Advisors reported that a key goal for KAEs in PY8 was scheduling site visits with customers. Several Energy Advisors cited this goal as particularly useful because it allowed Energy Advisors to visit customers alongside KAEs. These visits and joint efforts led to new customer relationships by introducing Energy Advisors to key decision makers at customer firms. The joint visits also led to enhancements to existing customer relationships.

Energy Advisors reported good working relationships with other AIC personnel, such as marketing and outreach staff and the AIC call center. Energy Advisors believe the AIC call center is effective at channeling information and leads to the Energy Advisors so that they can promptly reach out to potential participants and provide them with information on AIC's energy efficiency offerings.

Customer Relationship and Project Acquisition

Energy Advisors believe they are successful in helping the Business Program achieve its goals and gain new participants. They identified a number of different strategies for acquiring projects depending on the types of potential customers with which they interact, customer location, and customer size. For smaller businesses or customers that may not have participated in the program before, Energy Advisors use several strategies, including cold calls, email campaigns, site visits, and responses to requests received by the AIC call center. Energy Advisors reported that they often will schedule visits to smaller customers at the same time as larger customers, or keep a list of customers in the area of larger customers so that they can conduct drop-in visits to smaller customers when they are on a scheduled visit to a larger customer. When Energy Advisors make contact with participants and potential participants, either through a site visit or other communication, they try to understand the customer's needs and interest in program offerings, and also provide them with program information.

For larger customers and prior program participants, Energy Advisors leverage their knowledge of the customer, their facility, and their past participation in the program, if any, to identify opportunities for energy efficiency improvements. Energy Advisors indicated that tracking customers over time is beneficial. For example, during a project, an Energy Advisor might notice a system that will need replacement in future years and note this information. Advisors regularly review their notes and information on customers in their territories, seeking to identify opportunities that may have arisen since their last contact with the customer. Energy Advisors reported that they continue to target past program participants and have used functions within AMPlify to assist with targeted outreach to this segment.

We conducted interviews with Energy Advisors shortly after they were trained on the new Lightning platform in AMPlify. Energy Advisors reported that they were still learning the new Lightning platform, but that AMPlify as

a whole was a useful tool for a variety of tasks, including organizing customer lists by size, area, and other parameters. Energy Advisors reported that they use AMPlify to filter customer segments in their territory, review the past participation of a customer, and analyze where they may have opportunities for additional program participation. Energy Advisors were generally pleased with AMPlify's functionality and had adapted it effectively to their daily operations. Some Energy Advisors made suggestions for improvements and additional functions for AMPlify, including additional trade ally search and filtering functions and better ways to flag project types, specifically custom projects, among past participants.

Marketing, Barriers to Participation, and Customer Understanding of the Marketplace

Several Energy Advisors discussed the marketing of AIC's programs to business customers and how that process has evolved over time. One consistent point was that past participants are often a good group to target for additional marketing efforts. When asked what program components are typically marketed to past participants, several Energy Advisors noted that past participants often have already performed lighting work at their facilities and therefore they try to promote deeper energy-saving measures offered by the program. Some of the Energy Advisors noted, however, that, depending on when a customer implemented a lighting project, it may be seeking to make additional energy-efficient lighting improvements, as technology has advanced significantly in recent years.

Energy Advisors believe that both the level and type of marketing performed by the program was effective. Some Energy Advisors noted issues with reaching the correct decision maker for certain customer segments, particularly at national chains where the local staff at a facility are typically not the decision makers for the that facility's energy-efficient equipment purchases.

All Energy Advisors noted that the Business Symposium is a very effective marketing tool that brings in a large number of past and potential future participants at the start of the program year and is a great way to kick off the program year. In particular, Energy Advisors noted that the bonuses offered to symposium attendees are a key to driving early participation in the program year.[7] Several Energy Advisors also cited the 9/6/3 Early Participation bonus as an effective way to drive program participation, to spread out the participation throughout the year, and to create additional incentives for early participation.

Some of the Energy Advisors noted challenges and obstacles to customer participation in PY8. One Energy Advisor noted that for many customers, energy efficiency projects must take a secondary role compared to production at a facility. Several Energy Advisors noted that capital limitations and return on investment are both frequent issues for customers when they consider an energy-efficient project. Energy Advisors gave mixed commentary on customers' awareness of AIC's programs. Some Energy Advisors said that customer understanding of the program was strong in PY8, especially compared to earlier years in the program, and especially among larger customers. However, a subset of Energy Advisors noted that among their smaller customers the program may not be well known and more work is required to reach those customers. One Energy Advisor noted that some customers do not know that they have contributed to the funds that are available through AIC's incentives.

Energy Advisors reported that they interacted with Program Allies approximately every week, typically when Program Allies reached out to the Energy Advisors. These interactions sometimes focused on customer-specific questions or questions about applications. Approximately half of the Energy Advisors suggested that more could be done to improve the relationship between Program Allies, Energy Advisors, and the program in general. One of the suggestions made by Energy Advisors was to increase Program Ally knowledge of the

[7] Symposium attendees receive a coupon that can be used to receive a 15% incentive bonus on a future project in the same program year.

details of the program, as well as to encourage Program Allies to seek to maximize opportunities for customers to participate in AIC's programs. Energy Advisors noted that Program Allies are a key way to bring in new customers to the program, and therefore it is important that Program Allies consistently have the most up-to-date information about the program. One suggested way to keep Program Allies informed was to host brown bag or breakfast meetings periodically throughout the program year to discuss program benefits, offerings, and changes.

When asked about potential customer confusion due to multiple energy efficiency programs operating concurrently in Illinois, five of the seven Energy Advisors said that there was some confusion among their customers. The Energy Advisors noted that the main area of confusion was among smaller customers who were confused about whether they should participate through the small business offerings or through Standard Program business pathways. Energy Advisors said that they typically redirect customers to the appropriate program if they have confusion about program offerings.

Areas for Improvement

Energy Advisors had several comments and thoughts on areas where the program could look to improve. Several comments focused on the pipeline of projects throughout the year. Some Energy Advisors noted that there can be a rush of customers seeking to complete projects either early in or at the end of the program year. Energy Advisors thought this could be smoothed out over the course of the program year by making some program changes. One such change would be to allow customers to preregister projects that they are interested in completing so that Energy Advisors could reach out to them over the course of the year. Several Energy Advisors also suggested that the applications could be further streamlined, including allowing customers to enter information into the application system once so that it does not need to be entered repeatedly if the customer completes multiple applications.

Some Energy Advisors also noted that a challenge in PY8 was related to the maturity of the Business Program. Because lighting is an easy entry point for many participants, the Energy Advisors tried to move customers toward deeper savings measures and to have them consider other lighting projects if they were early adopters of efficient lighting. Two Energy Advisors noted that the program should continuously monitor and reevaluate its offerings as the market evolves and new technologies are introduced so that the program can offer incentives on the latest equipment to customers.

Program Allies

The AIC Business Program utilizes a network of Program Allies to help promote the program and its offerings. AIC Business Program allies represent a variety of market actor types, including electrical and lighting contractors, commercial refrigeration vendors, building automation system vendors and contractors, distributors, and manufacturer's representatives. Program Allies help customers identify opportunities for energy-efficient equipment installations in the ally's area of specialization, assist those customers in identifying AIC Business Program incentives that are available to them, and then work with customers to install eligible equipment. The Program Allies represent a vital and well-established link between the program and customers.

Our November/December 2015 interviews with 16 Business Program allies investigated program participation processes, Program Ally and participant satisfaction, barriers to participation, and the impacts of program participation on Program Ally business and practices. We also explored changes in the program, including the move away from Program Ally bonuses and the introduction of instant incentives for lighting and any resulting confusion in the marketplace. Program Allies reported that their customers were somewhat aware of the Business Program, but did not have a good understanding of the specifics of the program offerings. Some

allies reported that participation in the program had positively affected their business through increased sales, while most said that the program had not significantly affected their business practices. Program Allies were generally very satisfied with the program, including the process of participating, the measures, the incentives, and program staff interactions. We delivered a stand-alone findings memo providing full details of these findings to AIC in February 2016; for convenience, a copy of this memo is presented in Appendix A.

3.1.4 Participant Experience and Satisfaction

Online Store

The Online Store is designed to offer commercial customers a simple and convenient way to purchase common energy-efficient products. The primary objective of the offering is to reduce the "hassle factor" associated with locating and purchasing limited quantities of energy efficiency equipment for small and medium businesses. The Online Store focuses on reducing barriers to participation, including eliminating the need for a program application and providing a user-friendly website with such features as "compare products," product descriptions, and search and filter capabilities. While the offering is designed to fit the needs of small business customers, all AIC electric business customers are permitted to purchase discounted lighting products through the Online Store. In PY8, from July 2015 through September 2015, the Online Store once again offered free CFL kits containing four CFLs.

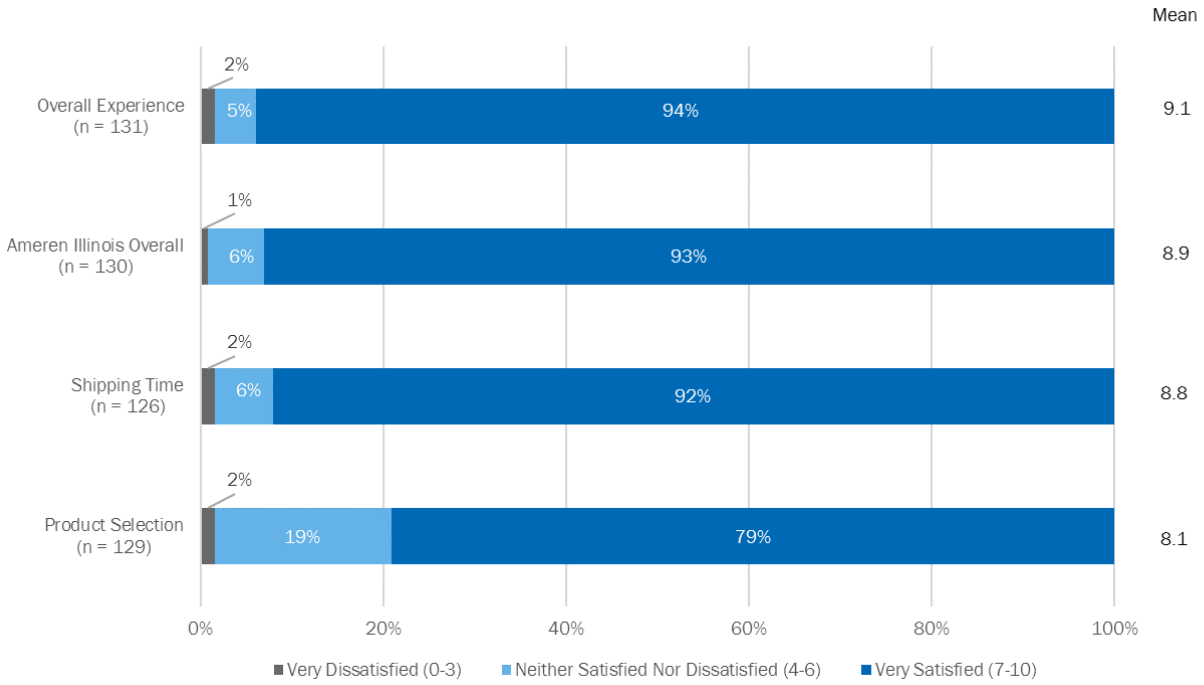
The evaluation team last evaluated participant satisfaction with the Online Store in PY5. Similar to the PY5 evaluation, this PY8 evaluation describes relevant characteristics of PY8 Online Store participants and assesses their level of satisfaction with the Online Store shopping experience. In addition, we estimate the likelihood of repeat participation in the Online Store, as well as participation in other AIC Business Program offerings.

Based on the Online Store survey responses, most participants are satisfied with their Online Store experiences, as well as with AIC overall (Figure 2).[8] The few participants dissatisfied[9] with the selection of products available on the Online Store (n=2) suggested making interior flood lights and linear LEDs available for purchase.

[8] Respondents were asked to provide a rating on a scale from 0 to 10, where 0 corresponds to "very dissatisfied" and 10 corresponds to "very satisfied."

[9] Defined here as providing a response of 0 to 3 on the same scale.

Figure 2. Participant Satisfaction with Online Store Components



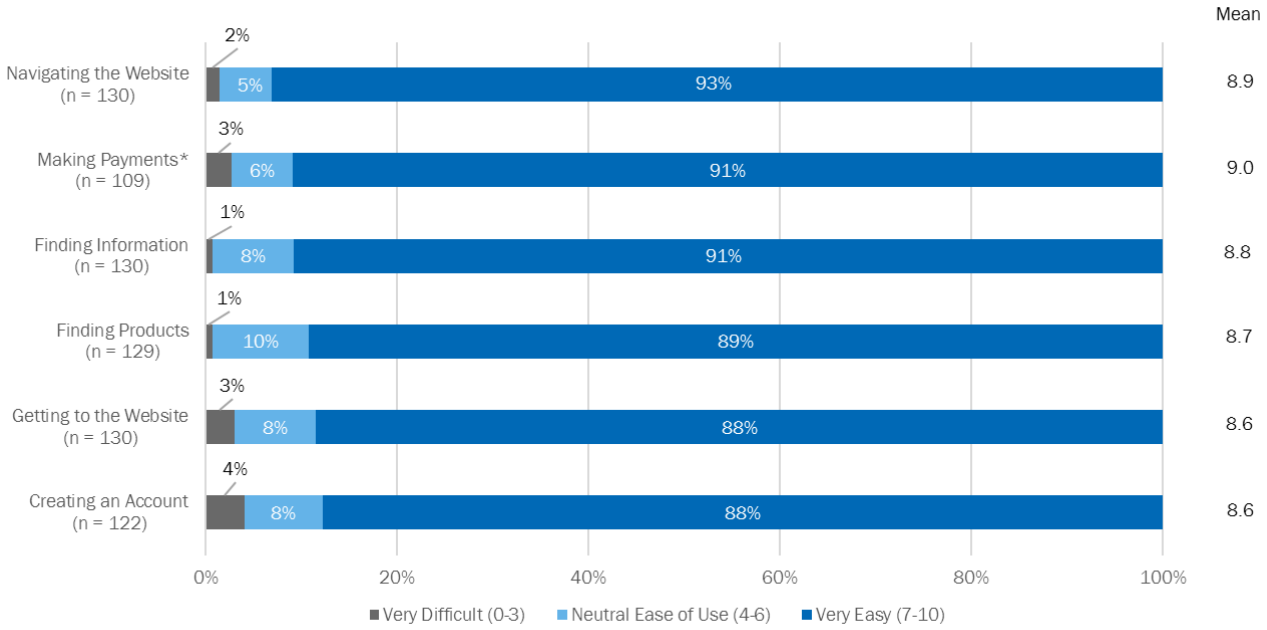
Note: Questions are based on a 0–10 scale, where 0 corresponds to "Very Dissatisfied" and 10 corresponds to "Very Satisfied."

AIC markets the Online Store through both targeted online advertising and direct mail media, although interviews with program implementation management suggested that marketing will focus on digital media in the future. Participants typically recalled first learning about the AIC Online Store through either mail or bill inserts (37%) or email (24%). Moving forward, participants identified email (68%) or mail or bill inserts (42%) as the best ways to reach companies like theirs with information about the Online Store.[10] To reach all customers, the program should consider continuing to market through a mix of web- and mail-based methods.

In general, participants found the Online Store website very easy to find and navigate, and found it easy to make payments, find information, find products, and create an account on the website (Figure 3). As was the case in PY5, participants provided an average usability rating between 8 and 9 for these key website functions, on a scale from 0 to 10, where 0 corresponds to "very difficult" and 10 corresponds to "very easy."

[10] Totals to more than 100% because 20 respondents mentioned both email and mail.

Figure 3. Participant Self-Reported Ease of Using the Online Store

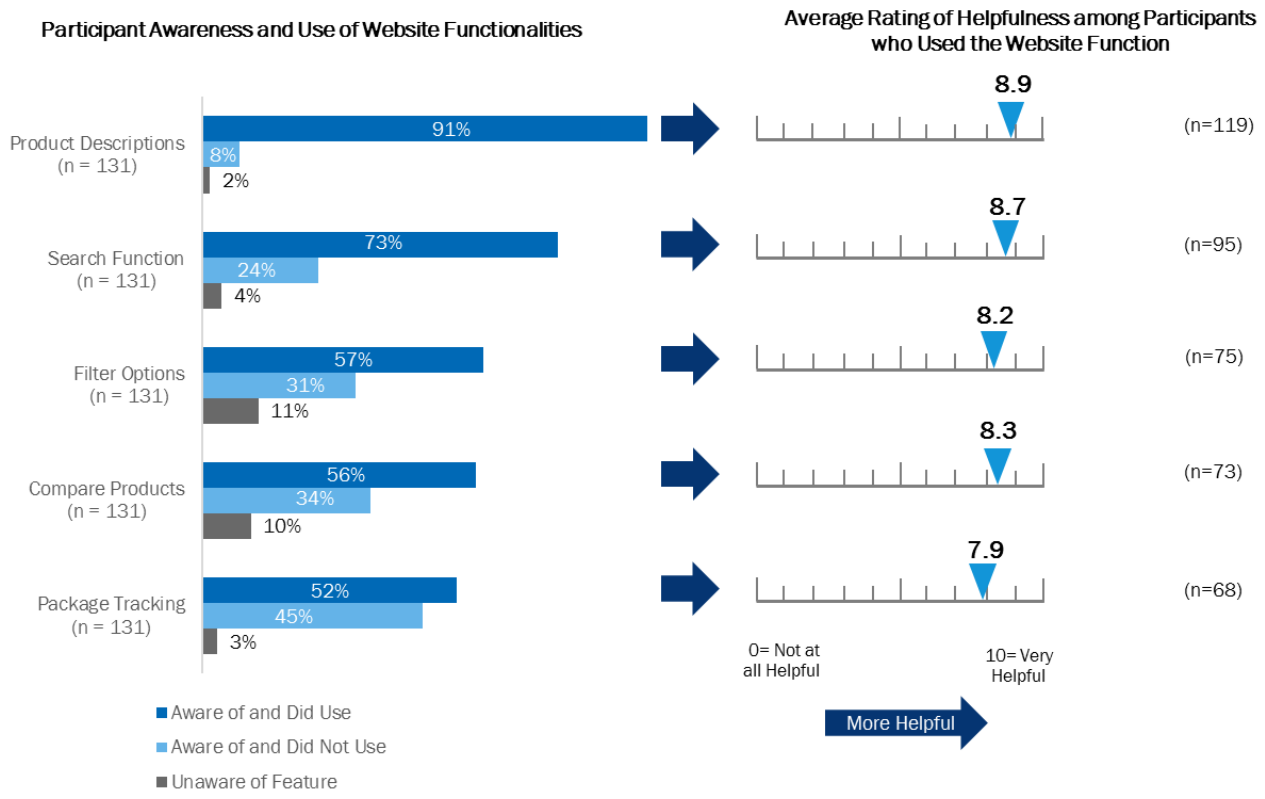


* While 22 respondents described making payments as "Not Applicable," all of these respondents received free CFL kits.

Note: Questions are based on a 0–10 scale, where 0 corresponds to "Very Difficult" and 10 corresponds to "Very Easy."

Most participants found the features of the Online Store website moderately helpful to very helpful. Similar to PY5, participants thought that product descriptions were the most helpful website feature. More participants claimed to have used product descriptions (91%) than any other website functionality (n=131) and rated the feature as the most helpful among key website features (Figure 4). In addition, participants who used product descriptions provided a mean helpfulness rating of 8.9 on a 0–10 scale, where 0 corresponds to "not at all helpful" and 10 corresponds to "very helpful," which is, as shown in Figure 4, the highest rating any website functionality received (n=119). Although fewer respondents used package tracking (52%), the "Compare Products" function (56%), the filter options function (57%), or search function (73%), those who did found them to be very helpful.

Figure 4. Participant Use of Website Functionality



Note: Questions are based on a 0–10 scale, where 0 corresponds to "Not at all Helpful" and 10 corresponds to "Very Helpful."

Participants most commonly reported receiving the products that they ordered from the Online Store within 1 week (62%), and almost all participants (92%) received their products in 2 weeks or less (Table 18). This is a marked improvement compared to PY5, when only 30% of interviewed participants received their Online Store purchase in 1 week.

Table 18. Online Store Deliver Times

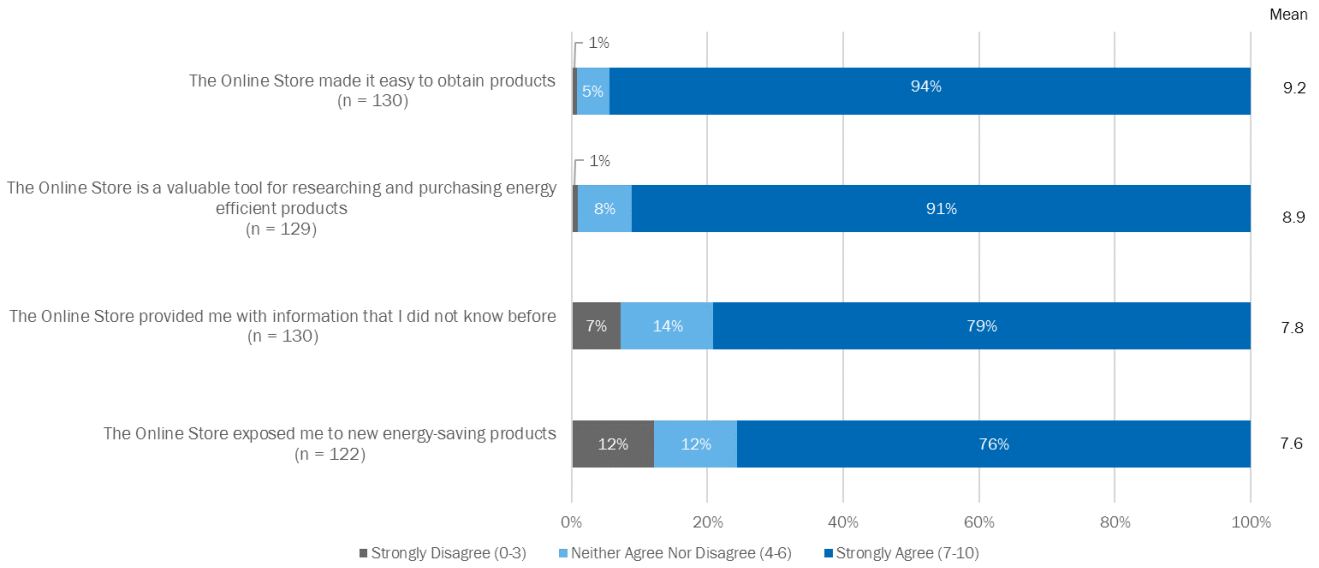
Time to Receive Products	Percentage (n=57)
1 week	62%
2 weeks	30%
3 weeks	4%
4 weeks	3%
8 weeks	1%

Note: Table omits respondents who could not remember delivery time.

Participants overwhelmingly agree that the AIC Online Store made it easy for them to obtain lighting products and was a valuable resource for researching and purchasing energy-efficient products, as shown in Figure 5.

As was true in PY5, participants most strongly agreed with the statement that the Online Store made it easy to obtain products.

Figure 5. Participant Agreement with Statements about PY8 Online Store



Note: Questions are based on a 0–10 scale, where 0 corresponds to "Strongly Disagree" and 10 corresponds to "Strongly Agree."

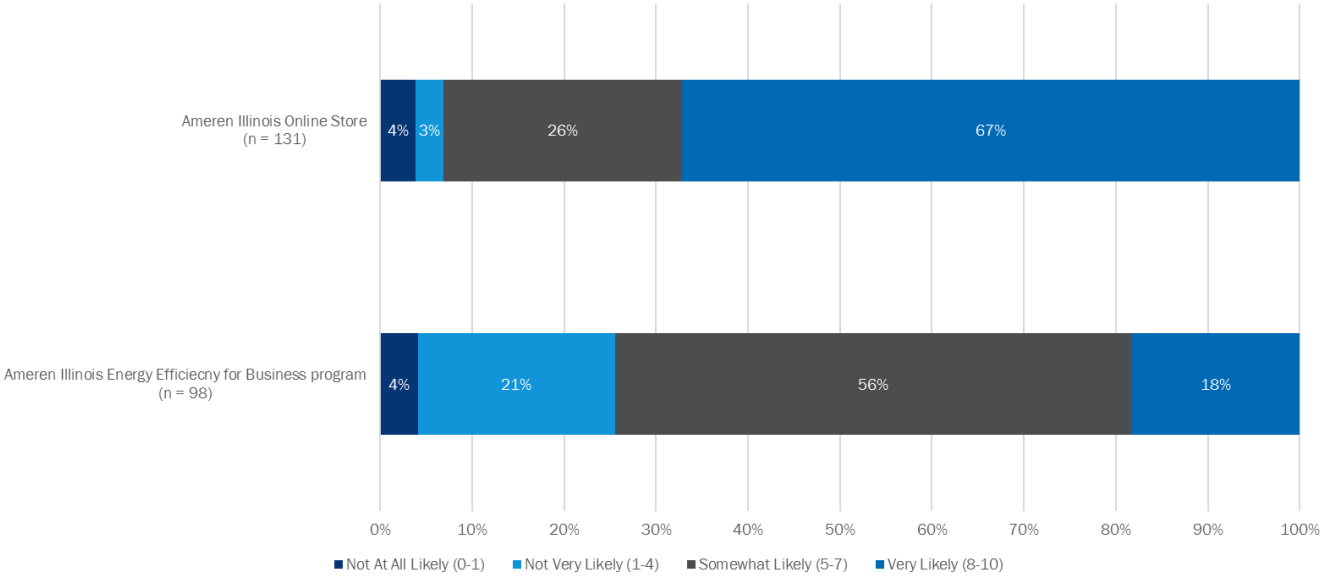
We found mixed evidence of the Online Store channeling participants into other AIC Business Program offerings. Figure 6 shows that Online Store participants were very happy with the offering but that participating in the offering does not seem to induce channeling to other programs. Almost all participants (93%) reported that they are somewhat or very likely to participate in the Online Store in the coming year, as seen in Figure 6. While 75% of participants interviewed (n=131) were aware that AIC offers incentives to businesses for energy equipment upgrades and improvements outside the Online Store offering, only 20% of these participants (n=98) have previously applied for these other incentives. Moreover, only 2 of the 20 respondents who have participated in other Business Program offerings report that the Online Store played a role in their decision to do so. Respondents report not applying for incentives due to lack of need (46%), lack of awareness of applicable programs or incentives (24%), lack of time (4%), or cost (4%).[11]

As Figure 6 also shows, only 18% of interviewed participants who were aware of other AIC Business Program offerings indicated that they were very likely to participate in another offering in the next year. It is possible this represents an opportunity for the program to capitalize on the overwhelmingly positive experiences of Online Store participants. On the other hand, it is also probable that participants in the Online Store offering represent a different market segment not well suited for the Core Program delivery model. By reducing the barriers to participation and selling consumer products directly to participants at a low cost, the Online Store captures savings generated by small businesses that may be less likely to be interested in larger, capital-intensive energy efficiency projects. In PY8, AIC did use the Online Store as a low-cost channeling mechanism to cross-promote the Instant Incentives program, which does offer products of interest to the type of customer using the Online Store. If AIC wishes to provide more active cross-program channeling, it could provide more-targeted marketing, such as suggesting that the Instant Incentives program be based on a customer's

[11] An additional 22% of respondents report they do not know why they have not applied for other incentives.

interaction with the website (e.g., promoting the Instant Incentives offering to customers who attempt to purchase quantities of lighting products in excess of the Online Store's purchasing limits).[12]

Figure 6. Participant Reported Likelihood of Repeat Participation and Channeling



Note: Online Store participation likelihood is based on a 0–10 scale, where zero corresponds to "Not at All Likely" and 10 corresponds to "Very Likely." Only participants aware of other Business Program offerings were asked to rate the likelihood of future participation.

Overall, the AIC Online store was successful in providing discounted lighting options to small businesses. Participants found the Online Store easy to find and use, and were satisfied with website functionality and their shopping experience. Our evaluation suggests that AIC should continue to promote the Online Store through both digital and print-based media and investigate the extent to which the Online Store could be more effectively leveraged to increase participation in other Business Program offerings.

Instant Incentives Distributors

The Instant Incentives Lighting offering is designed to increase the market share of efficient lighting products that participating lighting distributors sell to their customers by providing a point-of-sale discount to customers who purchase selected efficient lighting products. The Instant Incentives offering targets distributors that primarily serve end-use customers, as opposed to those who serve contractors. In PY8, there were 27 distributors that actively participated in the Instant Incentives offering, selling at least one discounted product. The offering was originally piloted as the Midstream Lighting marketing channel in PY7, and was expanded to a full offering in PY8. Our distributor evaluation focuses on participating distributors' satisfaction with program processes and how the program can most successfully support distributors in selling high-efficiency lighting products moving forward.

Participating Distributor Characteristics

[12] In PY8 the Online Store imposed a purchase limit of 100 rebated CFLs, 20 rebated LEDs, 10 rebated exit signs, and 10 rebated controls per account per year.

The nine distributors that we interviewed generally exhibited the characteristics of the Instant Incentives program's target distributor market. Participating distributors primarily served AIC customers (74% of distributors' customers, on average, were located in the AIC service territory). In addition, most distributors indicated that they primarily engaged in direct sales to end-user customers. When asked to estimate the share of their customer base composed of end-users, respondents estimated that an average of 71% of their customers were end-users, although the share ranges from 25% to 100%. All but two of the nine distributors served more C&I customers than they did residential customers, and four of the nine distributors served very few to no residential customers. In terms of lighting sales to AIC C&I customers over the past year, distributors reported selling mostly LEDs (34% of interviewed distributors' sales on average), linear LEDs (25% on average), and linear fluorescents (25% on average), although distributors varied widely from one another in terms of the product mixes that they reported selling during PY8. In addition, some distributors reported that they already sell only LEDs, and almost half of the distributors we spoke with (4/9) noted that they expect the market to continue shifting toward linear LEDs in the future.

Program Experiences and Satisfaction

Participating distributors held a positive opinion of the Instant Incentives program, including the program discounts, marketing material, and program staff. Distributors considered the program incentive as the main benefit to participating, because it both reduced the cost of efficient lighting products for their customers and served as a sales tool that helped distributor staff sell efficient lighting products. All of the interviewed distributors were satisfied[13] with the program's incentives, as well as with the mix of products qualified to receive an incentive. Most distributors were also satisfied with AIC Business Program staff (8/9), the enrollment process (8/9), and the Instant Incentives program overall (8/9), although no distributor we interviewed was dissatisfied.[14]

In-depth interviews suggest that the Instant Incentives offering contributed to distributors' knowledge of and familiarity with high-efficiency lighting and has led some distributors to change their stocking practices. Specifically, most distributors (7/9) indicated that the Instant Incentives program contributed to an increase in their knowledge of energy-efficient lighting products. Some distributors also reported that the program positively affected their stocking practices regarding efficient lighting (5/6), the share of their sales that efficient lighting represents (5/6), and their salesforce's level of comfort with discussing the benefits of efficient lighting with their customers (5/7). While most of the distributors surveyed (6/9) felt that the Instant Incentives program's PY8 marketing material was useful, no distributor indicated that additional or different marketing material would be useful in helping their company increase sales of efficient lighting. Several distributors noted that the AIC marketing materials served a complementary purpose to distributors' spec sheets.

According to distributors, since they started participating in the program, most have seen increased sales of linear LEDs, LEDs, and CFLs (9/10). We asked distributors to estimate how many of each bulb type they would have sold in PY8 absent the program. Their responses, shown in Table 19, reveal a dramatic impact. According to the distributors we interviewed, only 21% of their collective linear LEDs would have been sold in PY8 in the absence of the Instant Incentives offerings' discount, marketing, and other support.

[13] A rating of 7, 8, 9, or 10 on a scale from 0 to 10, where 0 is very dissatisfied and 10 is very satisfied.

[14] A rating of 0, 1, 2, or 3 on a scale from 0 to 10, where 0 is very dissatisfied and 10 is very satisfied.

Table 19. Distributor-Estimated Share of Own PY8 Sales That Would Have Occurred Absent the Instant Incentives Program

Bulb Type	Percent of PY8 Sales Expected to Have Occurred Absent Program	
	Weighted Average[a]	Range
Standard LEDs	30%	25% to 100%
Specialty LEDs	49%	20% to 100%
Linear LEDs	21%	0% to 100%
CFLs	54%	50% to 100%

[a] Weight based on PY8 sales; n=9 distributors.

Linear LEDs accounted for roughly a third (35%) of the Instant Incentives offerings' PY8 ex ante savings and represent a growing market for the offering going forward. However, the market for linear LEDs is changing rapidly. The interviewed distributors that sell linear LEDs predominantly sell plug-and-play lamps,[15] but, as two distributors noted, this was likely because the Instant Incentives offerings cover only plug-and-play retrofits and not ballast-bypass retrofits. A third of interviewed distributors expressed concerns over plug-and-play LED lamps due to the possibility of old or degraded ballasts. One distributor, who indicated that most of his company's linear LED installations during PY8 were plug-and-play bulbs, expressed hesitant optimism concerning plug-and-play linear LEDs, commenting:

> "Those plug-and-play bulbs have come a long way in the last 18–20 months [but]…I don't think the technology has been there long enough for us to really see what it looks like when you plug an LED bulb into an existing fixture because a lot of times you don't know what the condition of the ballast is. [Y]ou don't really know …if you've got an old ballast that's on its last legs anyway [or] what kind of degradation [it] is …causing to the lamp."

Suggestions for Improvement

According to distributors, the main barriers to PY8 program delivery were processes surrounding the approved product list (6/9) and perceived overlaps between the Instant Incentives and other Business Program offerings (4/9). One distributor also noted that the incentive processing timelines posed an issue. Distributors' specific observations and suggestions for improvement include:

- **The process for updating the qualified product list could be streamlined and made more predictable.** Some distributors (5/9) found that the qualified product list format and the process of updating the qualified product list imposed costs of searching for products and keeping up to date on which products qualified for an instant incentive. Individual participants suggested improvements, including making the list searchable and sortable for enhanced ease of use and listing products by part number in addition to UPC.

- **Several respondents (3/9) identified the process for updating the qualified product list as a potential barrier to efficiency lighting sales.** According to these distributors, new efficient lighting products must be added to the qualified product list before an Instant Incentives claim may be filed, and because this process can take weeks to complete, distributors think that the process of adding products to the qualified product list may be detrimental to time-sensitive sales. As one distributed noted, "[Y]ou've got to search out their UPC code, you've got to search out that you know the product qualifies… [and then] by the time they put it on there with their UPC code, so you can put it on your application, it might

[15] Plug-and-play LEDs can be installed directly into linear fluorescent fixtures without rewiring or removing the existing ballast.

take a couple of weeks. On top of the couple of weeks [of] getting a product added, the 4–6 weeks of getting your check, you're talking 2 months sometimes on the process of applying for the instant incentives." To streamline the process of updating the approved product list and communicating it to distributors, these distributors suggested incorporating more ENERGY STAR® or Design Light Consortium products preemptively.

- **A few participating distributors (4/9) indicated confusion or frustration with the overlap between the Instant Incentives program and other AIC offerings.** These participants observed overlap with the Small Business program and the Standard Program. One distributor commented, "That was one of my main criticisms … when they rolled out the mid-streaming program incentive because it directly competes with the Small Business program [and the Standard Program]." While the Online Store could be anticipated to have the most overlap in terms of potential customers with the Instant Incentives program, only one distributor expressed concern regarding AIC selling directly to customers. If the Online Store continues to shift toward selling LED products, it will be important to monitor this issue.

- **Payment processing times may pose a barrier to smaller business distributors.** One of the nine distributors we spoke with identified the waiting period to receive an incentive check as a significant barrier to his participation. For smaller businesses, this distributor commented that waiting 4–6 weeks to receive reimbursement from AIC represented a significant cash flow problem that could potentially discourage smaller distributors from participating in the program or from serving larger orders.

T12 Market Update

We also used the distributor interviews to provide a snapshot of the current market for T12 linear lighting. This updates the T12 assessment we completed as a part of our PY7 evaluation report.[16] Consistent with PY7 findings, most PY8 Instant Incentives lighting distributors we spoke with (6/7) indicated that their sales of T12s had dramatically declined in the past several years, although the decline appears to be less significant than in PY7, with only two distributors characterizing the reduction in sales as "dramatic." Presently, sales of T12s still comprise a non-negligible percentage of most distributors' total linear lighting sales (mean: 10%, range: 0% to 40%), which is the same order of magnitude as distributors' PY7 reports (6%). PY8 distributors reported that the customers still interested in purchasing T12s tended to be hospitals, schools, government buildings, and small businesses. While most (5/7) distributors said that they did recommend more-efficient options to these customers, distributors found that only one-quarter of customers converted to a more-efficient option as a result of the sales tactics (min: 10%, max: 50%).

Two distributors indicated ballast bypass LED installations as a potentially useful approach to converting T12 customers to a more efficient product. One noted that the lack of Instant Incentives discounts for ballast bypass linear LEDs was an impediment to converting the remaining T12 customers, as the lack of program incentive for ballast bypass "…takes the customer that has the T12s … out of the equation." This individual suggested that it might be cheaper for their customers to buy a non-program linear LED to bypass their existing ballast than it would be to buy a program-discounted linear LED and then buy a compatible ballast.

Conclusion

On balance, the Instant Incentives offering is operating effectively. Distributors were satisfied with the Instant Incentives offering and leveraged the offering to increase sales of efficient lighting to their customer base, which tended to be commercial end-users. Moving forward, we recommend that the Instant Incentives offering

[16] The PY7 effort included in-depth interviews with 10 lighting distributors in the AIC service territory and asked questions about the current market for T12 linear lighting.

update the qualified product list to a digital, user-friendly application to allow for both faster updating and easier use. This will remain important in the following year as the market for linear LEDs continues to evolve. The program should also continue to monitor the linear LED market, which represented roughly a third (35%) of Instant Incentives' PY8 ex ante savings and which is likely to grow in PY9. The market for linear LEDs is rapidly evolving, driven by both technological and consumer-driven forces. Faster incorporation of new qualified products and more-agile responses to market trends will be important to maintaining program influence on the linear LED market over this time period.

Instant Incentives End-Users

Results of the survey of customers who purchased lighting through the PY8 Instant Incentives program indicate that the Instant Incentives program achieved its goal of reaching end-user customers with discounted lighting products and suggest that the program was well received by participants. Participants were generally aware that AIC had sponsored the lighting discounts (89%) and provided overwhelmingly positive feedback on the Instant Incentives program overall, including their experiences with participating distributors and the products that they purchased. The remainder of this section provides additional details on participants' lighting purchasing habits and their satisfaction with the Instant Incentives offerings.

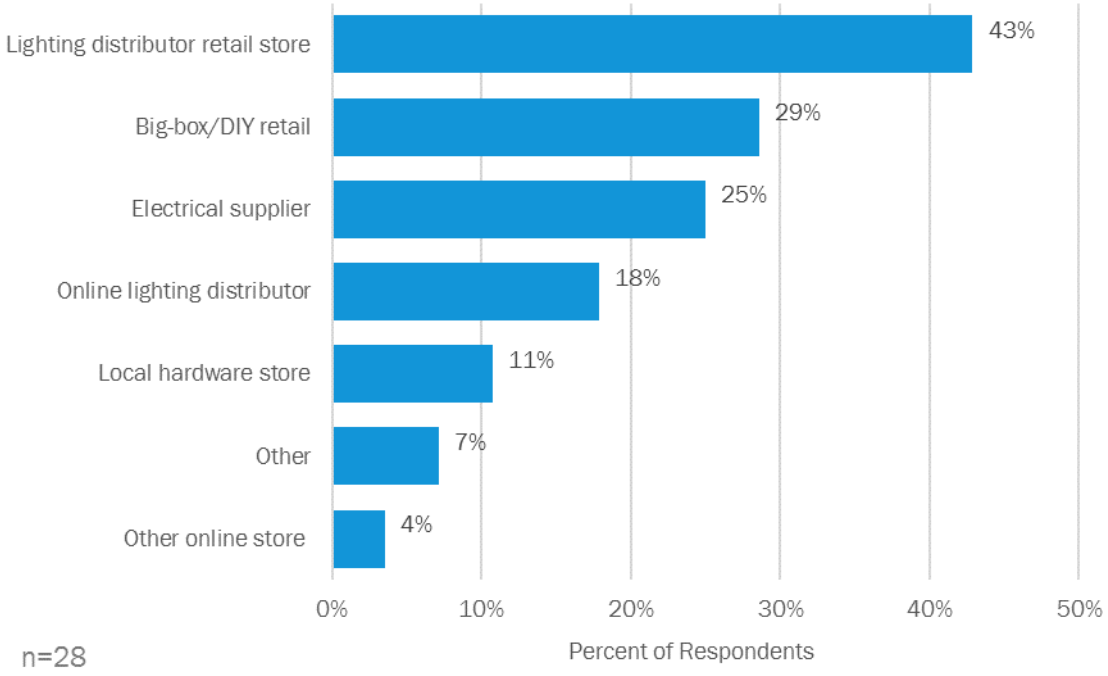
End-User Participant Characteristics

The program succeeded in reaching small to medium AIC commercial customers. All end-users interviewed purchased electric supply or delivery services from AIC (n=25). Of the 28 participants interviewed, only 3 indicated that they were contractors or that they purchased the bulbs for installation at a third-party business.[17] We have chosen to include these contractor participants in our analysis for several reasons. First, while the program targeted distributors that served primarily end-users, contractors were not prohibited from installing discounted bulbs or acting as an intermediary to end-users. In addition, their experience with the program's participation process and potential recommendations for improvement are not invalidated due to their contractor status.

Based on participant survey responses, the program appears to have succeeded in reaching consumers not already purchasing high-efficiency lighting. Only 54% of respondents recalled previously purchasing LED bulbs or fixtures (n=26). Further, as seen in Figure 7, while respondents most commonly purchased lighting products from distributors or electrical suppliers (43%), eight customers (29%) indicated that they usually purchase lighting products from a Big Box/Do-It-Yourself (DIY) store prior to the program.

[17] Two respondents identified themselves as contractors and a third declined to do so, but indicated the discounted bulbs were to be installed at a third-party location.

Figure 7. PY8 Instant Incentives Survey Respondents' Typical Lighting Purchasing Channels

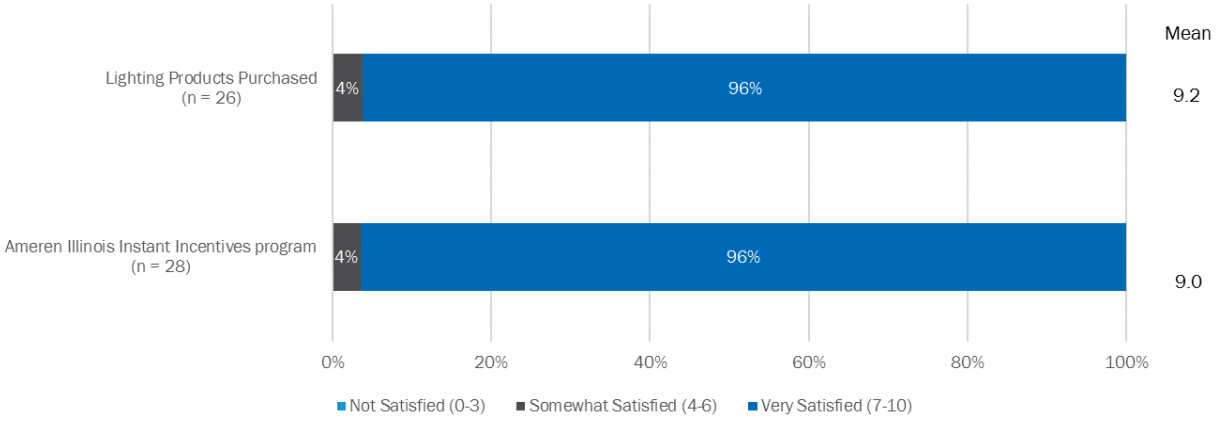


Note: Respondents were able to choose multiple answers.

Program Awareness and Satisfaction

The majority of participants (89%) were aware that the products that they purchased were discounted (n=28) and all of these participants knew that AIC provided the discount (n=25). All survey participants were either somewhat satisfied or very satisfied with both the products that they purchased from participating distributors and the Instant Incentives program overall (Figure 8). In addition, every respondent indicated that they would recommend the program to other businesses like theirs.

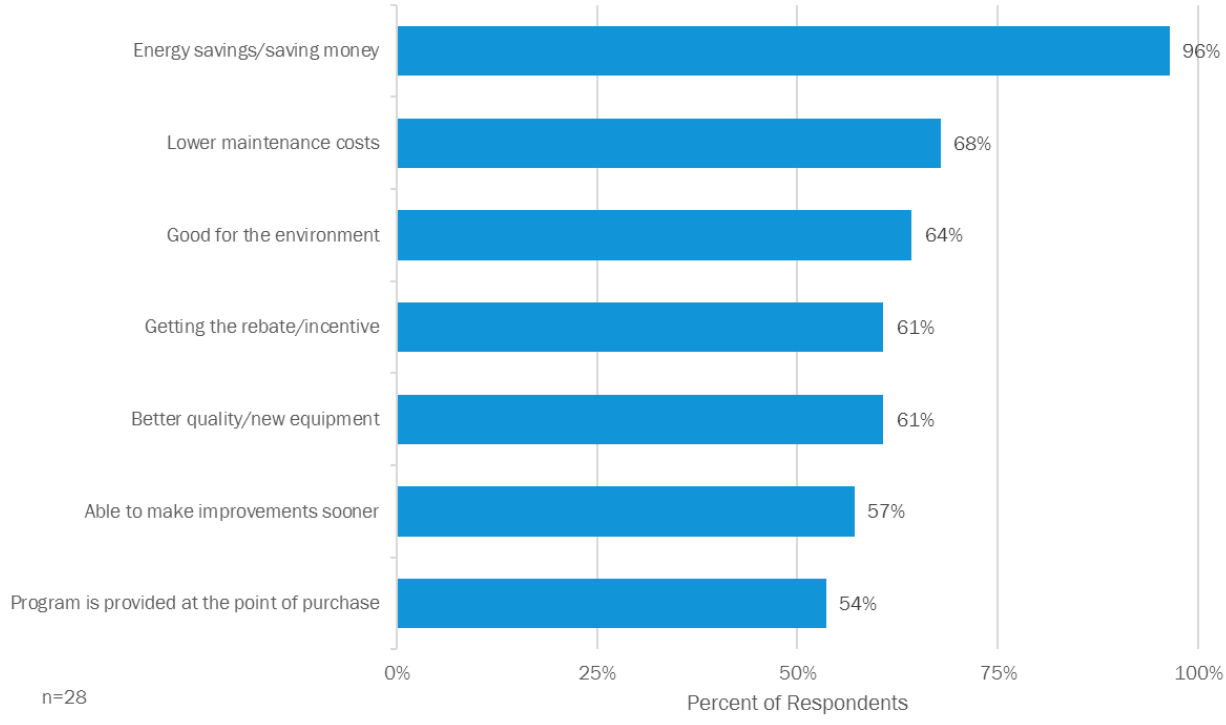
Figure 8. Participant Satisfaction with Purchased Lighting Products and Instant Incentives Program



Note: Questions are based on a 0–10 scale, where 0 corresponds to "Not Satisfied" and 10 corresponds to "Very Satisfied."

Respondents identified energy and monetary savings as the main benefits of buying lighting products through the Instant Incentives program, but, as seen in Figure 9, responses were fairly evenly split across potential benefits of the Instant Incentives program. Importantly, almost all respondents (85%) felt that the program provided two or more benefits, and many respondents (28%) selected all seven of the available multiple responses (n=28).

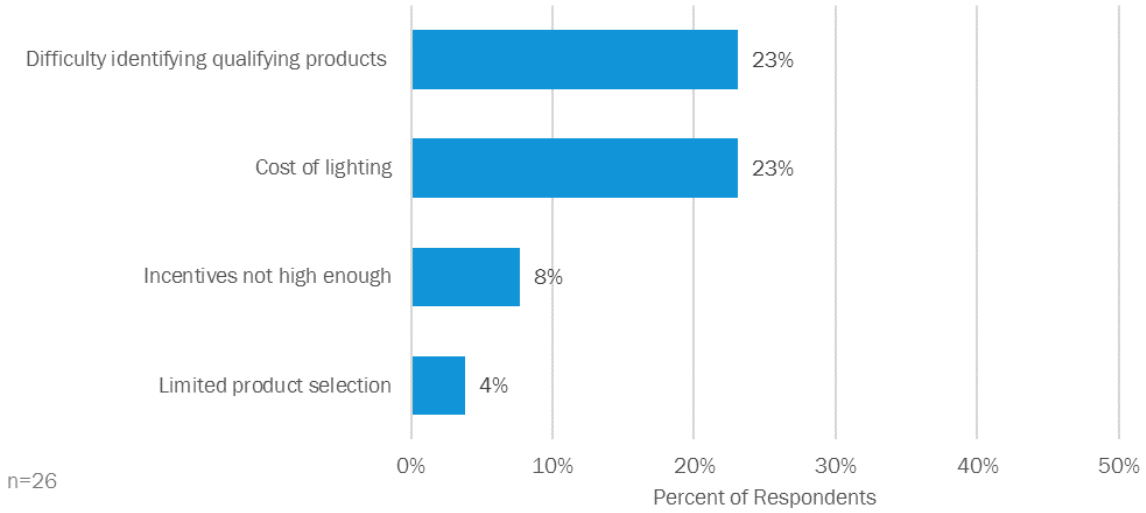
Figure 9. Benefits of Participation in the Instant Incentives Program (Self-Reported)



Note: Respondents were able to choose multiple answers.

Just over one-half of respondents (58%) did not see any drawbacks to purchasing discounted lighting products through the Instant Incentives program. Even so, the remaining 42% of respondents reported some program drawbacks. The most common drawbacks reported (n=26) were the cost of lighting (23%) and the difficulty of identifying which products were incentivized (23%), as shown in Figure 10.[18] End-users' confusion about which products were eligible for PY8 discounts echoes findings from the lighting distributors' perspective (discussed above); this indicates an opportunity for the program to streamline the qualified product list.

Figure 10. Drawbacks of Participation In the Instant Incentives Program (Self-Reported)

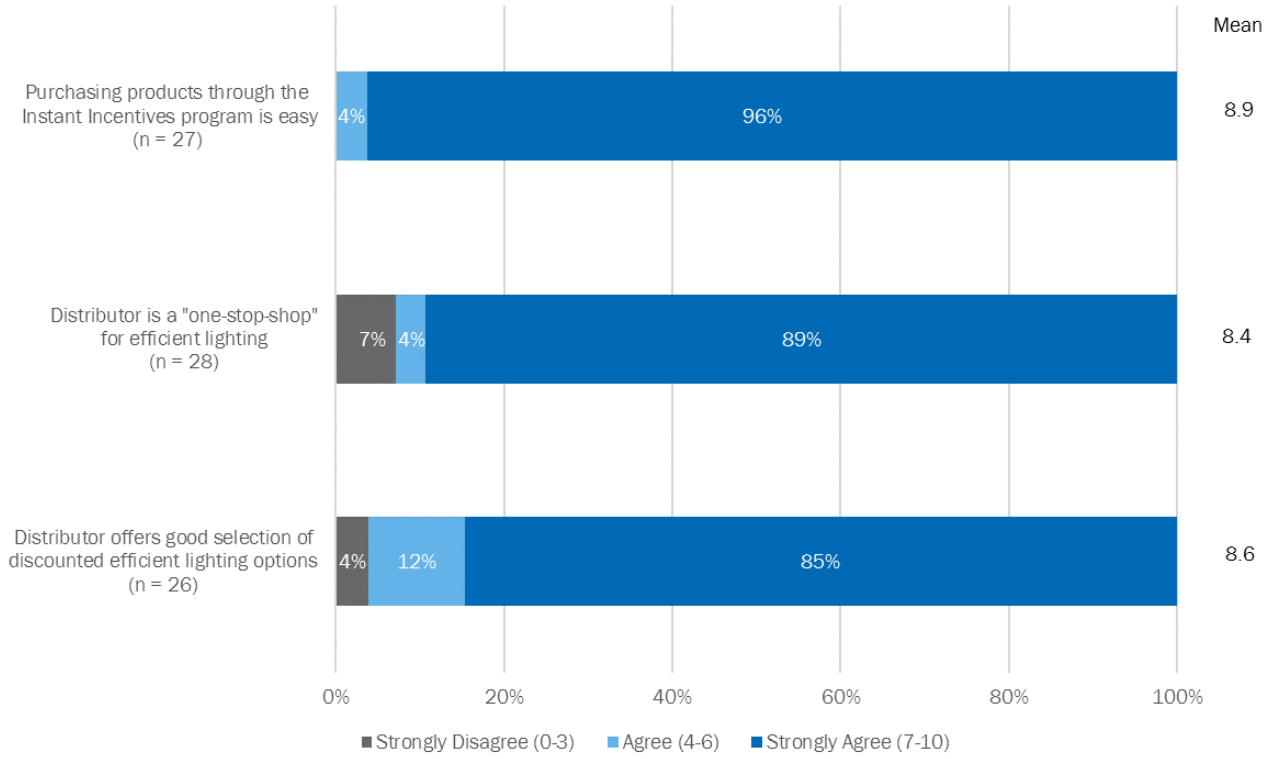


Note: Respondents were able to select multiple drawbacks.

Lighting distributors played a key role in the Instant Incentives program model. Respondents generally agreed that the program's PY8 lighting distributors offered a good selection of products, facilitated program participation, and acted as a one-stop-shop for efficient lighting purchases (Figure 11).

[18] Respondents were able to select multiple drawbacks.

Figure 11. End-User Agreement with Statements about PY8 Instant Incentives Lighting Distributors



Note: Questions are based on a 0–10 scale, where 0 corresponds to "Strongly Disagree" and 10 corresponds to "Strongly Agree."

3.2 Impact Results

The following sections provide measure verification rates, in addition to gross and net impacts for PY8.

3.2.1 Gross Impacts

Our impact analysis yielded ex post gross electric and gas energy savings and peak electric demand savings. Total gross energy and demand impacts for the PY8 Standard Program are shown in Table 20.

Table 20. Standard Program Gross Impact Summary

Savings Category	Ex Ante Gross	Realization Rate	Ex Post Gross
Energy Savings (MWh)			
Core Program	88,560	100.1%	88,638
Instant Incentives	6,207	81.5%	5,060
Online Store	2,934	105.0%	3,081
Green Nozzle	5	100.0%	5
Total MWh	**97,706**	**99.1%**	**96,784**
Demand Savings (MW)			
Core Program	13.281	100.0%	13.286
Instant Incentives	1.208	81.6%	0.985
Online Store	0.712	109.8%	0.781
Green Nozzle	0	N/A	0
Total MW	**15.200**	**99.0%**	**15.052**
Gas Savings (Therms)			
Core Program	3,406,745	100.0%	3,406,423
Instant Incentives	0	N/A	0
Online Store	0	N/A	0
Green Nozzle	673	100.0%	673
Total Therms	**3,407,418**	**100.0%**	**3,407,096**

Core Program

AIC customers installed more than 2,500 individual measures through the Core Program in PY8 as part of 1,063 unique projects (Table 21). As in previous years, the majority of projects consisted of lighting installations, followed by specialty equipment[19] and HVAC projects.

Table 21. PY8 Core Program Verification Results

Measure Type	Program-Tracking Measure Count	Verified Measure Count	Verification Rate
Lighting	2,105	2,105	100%
Specialty Equipment	211	211	100%
HVAC	128	128	100%
Steam Traps	84	84	100%
VFDs	66	66	100%
Leak Survey and Repair	4	4	100%
Total	**2,598**	**2,598**	100%

[19] Specialty equipment includes commercial refrigeration and food service equipment, such as fryers, dishwashers, curtains/doors for freezers, and controls.

Our impact analysis activities for the Standard Program yielded ex post gross electric savings, gas savings, and peak demand savings that are each approximately equal to each respective ex ante estimate (Table 22).

Table 22. PY8 Core Program Gross Impacts

Measure Type	Verified Measures	Ex Ante Gross Savings			Ex Post Gross Savings			Realization Rate		
		MW	MWh	Therms	MW	MWh	Therms	MW	MWh	Therms
Lighting	2,105	8.103	50,303	0	8.126	50,303	0	100%	100%	N/A
Specialty Equipment	211	0.134	1,579	6,655	0.132	1,580	6,655	98%	100%	100%
HVAC	128	0.335	1,837	77,532	0.320	1,913	77,210	95%	104%	100%
Steam Traps	84	0	0	3,322,558	0	0	3,322,558	N/A	N/A	100%
VFDs	66	4.574	33,730	0	4.574	33,730	0	100%	100%	N/A
Leak Survey and Repair	4	0.135	1,112	0	0.135	1,112	0	100%	100%	N/A
Total	2,598	13.281	88,560	3,406,745	13.286	88,638	3,406,423	100.0%	100.1%	100.0%

We describe the engineering review approach and outline the small discrepancies found for each measure type below. The engineering review of measures examined two issues:

1. Correct implementation of the prescribed savings algorithms from the IL-TRM V4.0
2. Estimation of savings for measures that did not have prescribed savings algorithms

Projects with IL-TRM V4.0 prescriptive savings measures were checked against the IL-TRM V4.0 methodologies and assumptions to determine whether ex ante assumptions were applied accurately. We made adjustments to the ex ante savings assumptions to align with the IL-TRM V4.0 as applicable. Through discussions with the implementer, we corrected any program-tracking database errors and identified any explanations for differences between ex ante and ex post values. We describe these differences below.

For measures that did not have IL-TRM V4.0 prescriptive savings measures, we reviewed methodologies supplied by the implementer to ensure reasonableness and accuracy of the methodology. Through discussions with the implementer, we made minor changes to ex ante methodologies as applicable. We describe these changes below.

The engineering review resulted in savings adjustments for the following end uses. We did not make any adjustments to lighting, steam trap, VFD, or leak survey and repair measures.

- **Specialty Equipment**
  - Specialty equipment includes refrigeration and food service equipment. For the electronically commutated (EC) motors for walk-in cooler and freezer measures (N=24), ex ante savings use the average of cooler savings and freezer savings from the IL-TRM V4.0. Ex post savings apply the equipment-specific savings assumption based on whether the equipment is a cooler or freezer. This discrepancy caused the difference in demand (MW) realization rate for specialty equipment and also minor differences in energy (MWh) that are too small to affect the overall energy realization rate.

- **HVAC**
  - For BPC20 (VFDs for HVAC motors; N=12), the implementer assumes a load factor of 0.65 per the IL-TRM V4.0 (when load factor is unknown), but we use the actual load factor provided in the program-tracking database for these measures. This resulted in lower demand savings but higher energy savings.
  - For BPH7 and BPH8 (gas furnace replacement and gas furnace early replacement, respectively; N=30), we found slight differences between ex ante and ex post savings that are likely due to differences in assumed coincidence factors and hours of use. There are limited building type options in the IL-TRM V4.0 for this measure, and available options do not correspond directly with all of the building types listed for these measures in the PY8 program-tracking database. We applied the most realistic values to align with the building type listed in the database, which resulted in an increase in demand savings and no change to energy or therm savings.
  - For BPC30 (package terminal air conditioner and package terminal heat pump; N=6), we found slight differences with both energy and demand due to differences in baseline energy efficiency ratio (EER) assumptions. Ex ante savings use capacity ranges to estimate baseline EER based on spreadsheets previously provided by the implementer. Ex post savings use actual capacity from the program-tracking database to calculate baseline EER in accordance with the equations in the IL-TRM V4.0.
  - For BPWH4 (high efficiency condensing water heater; N=1), the measure is not in the IL-TRM V4.0. Through discussions with the implementer, the evaluation team and implementer agreed that the existing ex ante calculations relied on an outdated methodology. Because this measure was added to the IL-TRM V5.0, we relied on that methodology for ex post calculations. This decreased the realization rate (43%) for this one measure, but because it is only one measure with a relatively small amount of savings, it has a negligible impact on the overall therm realization rate for HVAC.

Online Store

We verified Online Store participation as described in Section 2.2.8 by examining the Online Store product data for product eligibility and time of sale or disbursement, with 100% verification (Table 23).

Table 23. Online Store Verification Results

Measure Type	Program-Tracking Measures	Verified Measures	Verification Rate
Spiral CFLs	4,135	4,135	100%
Specialty CFLs	2,120	2,120	100%
Specialty LEDs	1,721	1,721	100%
Free CFLs (pack of 4)	1,145	1,145	100%
Standard LEDs	1,115	1,115	100%
LED downlights	531	531	100%
LED exit signs	509	509	100%
Occupancy sensors	476	476	100%
Utility Lights	158	158	100%
Power Strip	1	1	100%
Grand Total	**11,911**	**11,911**	**100%**

We calculated ex post gross savings for Online Store purchases using two methods:

- **Method 1.** Applying an ISR of 1.0 consistent with the ex ante assumptions and as prescribed in the IL-TRM V4.0 for programs that require a customer to sign off that the equipment is not placed into storage. We use this method for carrying forward ex post savings for the Online Store program.
- **Method 2.** Applying an ISR based on PY8 participant research, which found ISRs less than 1.0. We use this method for a comparison of ex ante inputs and assumptions to ex post. Table 24 presents the first-year ISRs for the Online Store based on the participant survey. Appendix E presents more detail about the ISR calculations and recommended installation trajectory to capture future savings from PY8 purchases installed two- and three years after purchase.

Table 24. Online Store First-Year ISRs

Measure Type	First-Year ISR
CFL	0.902
LED	0.896
Other	0.770

We present the results of both methods in Table 25 (energy) and Table 26 (demand). Method 1 is provided as it is based on the information that was available to the implementer throughout the program year. As illustrated, Method 1 shows accurate savings estimates, meaning that the implementer did a good job with the underlying data and applying the appropriate TRM values and methodologies. We calculate Method 2 for a comparison only, to show the ex post estimates based on application of the PY8 researched ISRs. We use Method 1 for carrying forward final ex post gross impacts into overall PY8 savings tables.

Table 25. Online Store Gross Energy Impacts

Measure Type	Ex Ante Gross	Method 1: Ex Post Gross with IL-TRM V4.0 ISR		Method 2: Ex Post Gross with PY8 Researched ISR	
	MWh	MWh	Realization Rate	MWh	Realization Rate
	[A]	[B]	[C] = B/A	[D]	[E] = D/A
CFL	1,824	1,853	101.6%	1,672	91.7%

Measure Type	Ex Ante Gross	Method 1: Ex Post Gross with IL-TRM V4.0 ISR		Method 2: Ex Post Gross with PY8 Researched ISR	
	MWh	MWh	Realization Rate	MWh	Realization Rate
	[A]	[B]	[C] = B/A	[D]	[E] = D/A
LED	516	523	101.4%	469	90.8%
Other	594	705	118.7%	542	91.4%
Total	**2,934**	**3,081**	**105.0%**	**2,683**	**91.4%**

Table 26. Online Store Gross Demand Impacts

Measure Type	Ex Ante Gross	Method 1: Ex Post Gross with IL-TRM V4.0 ISR		Method 2: Ex Post Gross with PY8 Researched ISR	
	MW	MW	Realization Rate	MW	Realization Rate
	[A]	[B]	[C] = B/A	[D]	[E] = D/A
CFL	0.451	0.459	101.7%	0.414	91.7%
LED	0.130	0.131	101.1%	0.117	90.6%
Other	0.131	0.191	146.1%	0.147	112.5%
Total	**0.712**	**0.781**	**109.8%**	**0.679**	**95.3%**

Prior to application of PY8 researched ISRs, Method 1 shows realization rates higher than 100% due to several reasons, including:

- Per discussions with the implementer, ex ante baseline wattage was incorrect for several measures (lighting IDs: 1100.794, 1100.828, 1160.658, and 1100.8283).[20] We adjusted the baseline wattages to be consistent with IL-TRM V4.0 assumptions for these bulb types based on lumen outputs indicated in program-tracking data. Adjusting baseline wattages resulted in increased savings for the affected measures (N=74).
- For occupancy sensor measures (N=89), ex ante savings incorrectly applied a demand coincidence factor to the energy savings and incorrectly applied an energy savings factor to demand savings. Per the IL-TRM V4.0, we applied the energy savings factor to energy savings and applied the coincidence factor reduction (0.15) to demand savings. Accounting for these errors increased both the energy savings and the demand savings for occupancy sensors, which are included in the "Other" category.

Instant Incentives Measures

The evaluation team verified the ex ante savings calculations for the Instant Incentives offerings through a review of the program-tracking spreadsheet supplied by the implementer. Similar to the Online Store evaluation, we calculated ex post gross savings for the Instant Incentives purchases using two methods:

- **Method 1**. Applying a first-year ISR of 0.0.712 for CFLs and 0.957 for LEDs, consistent with the ex ante assumptions and prescribed in the IL-TRM V4.0. We use this method for a comparison of ex ante inputs and assumptions to ex post.
- **Method 2**. Applying a first-year ISR of 0.78, based on PY8 participant research. We use this method for carrying forward ex post savings for the Instant Incentive offering. We use Method 2 for ex post savings, as the IL-TRM V4.0 allows researched ISRs to be applied when available.

[20] 1100.794s, 1100.828s, and 1160.658s are specialty CFLs. 1100.8283s are specialty LEDs.

We present the results of both methods in Table 27 (energy) and Table 28 (demand).

Method 1 is provided as it is based on the information that was available to the implementer throughout the program year. As illustrated, Method 1 found a 100% realization rate for demand and nearly a 100% realization rate for energy, with only minor discrepancies likely due to rounding. Method 1 shows accurate savings estimates, meaning that the implementer did a good job with the underlying data and applying the appropriate TRM values and methodologies. We calculate Method 2 to show the ex post estimates based on application of the PY8 researched ISRs. We use Method 2 for carrying forward final ex post gross impacts into overall PY8 savings tables. However, data related to bulbs not installed in PY8 will be captured in future program years as specified in the carryover savings methodology set out in the IL-TRM V4.0, up to 98% of total ex ante verified sales.

Table 27. Instant Incentives Gross Energy Impacts

	Ex Ante Gross	Method 1: Ex Post Gross with IL-TRM V4.0 ISR		Method 2: Ex Post Gross with PY8 Researched ISR	
	MWh	MWh	Realization Rate	MWh	Realization Rate
Measure Type	[A]	[B]	[C] = B/A	[D]	[E] = D/A
PY8 Impacts	6,207	6,201	99.9%	5,060	81.5%
PY7 Carryover	0.0161	0.0161	100.0%	0.0161	100.0%
Total	**6,207**	**6,201**	**99.9%**	**5,060**	**81.5%**

Table 28. Instant Incentives Gross Demand Impacts

	Ex Ante Gross	Method 1: Ex Post Gross with IL-TRM V4.0 ISR		Method 2: Ex Post Gross with PY8 Researched ISR	
	MW	MW	Realization Rate	MW	Realization Rate
Measure Type	[A]	[B]	[C] = B/A	[D]	[E] = D/A
PY8 Impacts	1,208	1,207	100.0%	985	81.6%
PY7 Carryover	0.0016	0.0016	100.0%	0.0016	100.0%
Total	**1.208**	**1,207**	**100.0%**	**985**	**81.6%**

We performed an Instant Incentives end-user participant survey in PY8 to gauge the first-year ISR for PY8 measures. The participant survey resulted in an ISR of 0.78 for the PY8 Instant Incentives measures (n=36). Appendices present more detail about the ISR calculations and recommended installation trajectory to capture future savings from PY8 purchases installed 2 and 3 years after purchase.

Green Nozzle

The evaluation team verified the number of measures and ex ante savings for the Green Nozzle initiative through a review of a supplemental detailed calculations spreadsheet supplied by the implementer. We confirmed that the implementer used the correct IL-TRM V4.0 algorithms to estimate savings. Therefore, we did not adjust the number of installed measures or ex ante savings for the initiative. As such, ex ante and ex post impacts are identical (Table 29).

Table 29. Green Nozzle Gross Impacts

Measure Type	Verified Measures	Ex Ante Gross			Ex Post Gross			Realization Rate		
		MW	MWh	Therm	MW	MWh	Therm	MW	MWh	Therm
Green Nozzle	4	0	4.6	673	0	4.6	673	N/A	100%	100%

3.2.2 Net Impacts

We used NTGRs approved by the Illinois SAG to determine net impacts for the PY8 Standard Program. These NTGRs are presented in detail in Section 2.2.8. Using these NTGRs, we calculated net impacts for the PY8 Standard Program measures installed through the Core Program, the Online Store, the Instant Incentives offerings, and the Green Nozzle initiative (Table 30). Applying the NTGRs listed below to Standard Program ex post gross savings resulted in an overall, savings-weighted PY8 Standard Program NTGR of 0.78 for MWh, 0.78 for MW, and 0.90 for therms.

Table 30. PY8 Standard Core Program Gross and Net Impacts

Savings Category	Ex Post Gross	NTGR	Ex Post Net
Energy Savings (MWh)			
Core Program	88,638	0.78	69,400
Instant Incentives	5,060	0.77	3,888
Online Store	3,081	0.83	2,557
Green Nozzle	5	0.92	4
Total MWh	**96,784**	**0.78**	**75,850**
Demand Savings (MW)			
Core Program	13.286	0.78	10.376
Instant Incentives	0.985	0.77	0.757
Online Store	0.781	0.83	0.648
Green Nozzle	0	N/A	0
Total MW	**15.052**	**0.78**	**11.782**
Gas Savings (Therms)			
Core Program	3,406,423	0.90	3,058,060
Instant Incentives	0	N/A	0
Online Store	0	N/A	0
Green Nozzle	673	0.89	599
Total Therms	**3,407,096**	**0.90**	**3,058,659**

4. Conclusions and Recommendations

AIC successfully implemented the Standard Program in PY8 and met both its electric and gas savings goals. Although the program saw a slight decrease in participation measured relative to the prior year (in terms of projects), the program is maintaining the continued growth in energy savings seen over the last few years and achieved realization rates close to or equaling 100%. Participation in the program followed similar patterns as in past years, namely, lighting projects represented around three-quarters of all projects completed through the program, and the Core Program represented the vast majority of all Standard Program savings. AIC made only a few minor adjustments to the Standard Program during PY8. The most notable change was expanding the midstream Instant Incentives program from a pilot to a full offering.

Program stakeholders with whom we spoke as part of this evaluation (staff and participants) reported few barriers to participation or problems with program processes. AIC received positive feedback from key program support stakeholders, including the Standard Program's Program Allies, Energy Advisors, and midstream lighting distributors that distribute the Instant Incentives offering. Participating lighting distributors interviewed as part of this evaluation suggested several minor adjustments that AIC could make to streamline the offering, but are supportive of the full-scale offering overall. AIC continued to receive positive feedback from those who purchased lighting through the Online Store. Customers who purchased lighting through the midstream Instant Incentives offering are also satisfied. Overall, the high customer and stakeholder satisfaction levels, combined with savings realization rates near 100%, indicate that the AIC Standard Program is running smoothly.

Based on our PY8 evaluation activities, we make the following key conclusions and recommendations for AIC's consideration:

- **Finding #1.** Our impact evaluation found electric and gas gross realization rates of 100% or nearly 100% for the program, indicating that the program is tracking its savings and projects carefully. However, we continue to find minor discrepancies in the database including wattage assumptions that do not reflect the latest TRM updates and incorrect formulas used for some measures.
  - **Recommendation #1.** While these issues remained very minor, we recommend incorporating all Illinois Statewide Technical Reference Manual Version 4.0 (IL-TRM V4.0) updates and applying the correct measure assumptions consistently across all measures to ensure AIC continues achieving high realization rates moving forward.
- **Finding #2.** Participants learn about the program in a variety of ways, including through contractors; AIC key account executives (KAEs); the program website; or through direct marketing, such as emails or bill inserts. Energy Advisors noted how opportunities may be lost if marketing efforts do not reach the right audience or marketing materials do not make it into the hands of decision makers.
  - **Recommendation #2.** The program should continue to diversify its marketing and outreach efforts to ensure that it is reaching all types of businesses and the decision makers within those businesses.
- **Finding #3.** Program Allies are generally satisfied with their participation in the program, including the process of participating, the measures, the incentives, and program staff interactions. According to Program Allies, the program has not had a significant impact on their business practices, although a few interviewed allies noted that they have seen a positive increase in their sales since becoming a Program Ally.

- **Finding #4.** The first full year of the Instant Incentives offering went relatively smoothly, with overall high levels of satisfaction from participating lighting distributors and customers. In-depth interviews with about 33% of the PY8 distributors (n=27) and a web survey of 131 end-users and contractors who purchased lighting through the program identified several opportunities for AIC to streamline the offering moving forward. Key improvements, in the eyes of distributors, relate to the approved product list, as this aspect posed the biggest hurdle to seamless participation during PY8. Individual suggestions related to the processes of approving new products throughout the program year, improving the way AIC communicates changes to the approved product list to distributors, and switching to a sortable product list format for enhanced ease of use.

  - **Recommendation #3.** To improve lighting distributors' ease of participating in the Instant Incentives offering, AIC should consider how it can enhance the approved product list and streamline the process for updating it throughout the program year. First, we recommend providing distributors with a spreadsheet-based approved product list that enables sorting by product SKU, product type, and other attributes. Further, to the extent possible, we recommend AIC consider how it can streamline the processes of approving new products throughout the program year, and what type of product list update schedule could balance distributors' needs for predictability and adaptability.

- **Finding #5.** As it has in the past, the Online Store is working smoothly and is reaching its intended audience of small business customers. PY8 participants primarily identified themselves as relatively "small" or "medium" sized businesses for their industry. Participants considered the Online Store a convenient way to access discounted lighting products, were generally happy with their shopping experiences, and often expressed interest in using the Online Store again in the future. While AIC uses the Online Store to expose customers to information about other savings opportunities (e.g. Instant Incentives distributors), PY8 participants expressed a low likelihood of participating in other AIC programs. Among the small number who had participated in another offering, few indicated that their Online Store participation played a role in their decision to do so. While this may point to an opportunity for the program to provide more active cross-program channeling, it is also possible, as suggested by survey responses, that the Online Store captures a different market segment than the Core Program.

  - **Recommendation #4.** If AIC wishes to provide more active cross-program channeling, it could provide more-targeted marketing, such as suggesting other programs based on the customers' interaction with the website, e.g., promoting the Instant Incentives offering to customers who attempt to purchase quantities of lighting products in excess of the Online Store's purchasing limits.

- **Finding #6.** While not a major source of participant dissatisfaction, Energy Advisors suggested that the application process may be further streamlined.

  - **Recommendation #4.** Suggestions to improve the application process included allowing customers to enter information online once so that it does not need to be entered repeatedly for multiple applications, thereby increasing the speed of the review process.

Appendix A. Data Collection Instruments


AIC PY8 Standard & Custom Trade Ally D


AIC PY8 Standard Online Store Survey


AIC PY8 Standard Instant Incentive En


AIC PY8 Standard Instant Incentive Dis


AIC PY8 Standard & Custom Energy Advi

Appendix B. Program Ally Research Memo

For convenience, the previously delivered Program Ally research memo is embedded below.

AIC PY8 Program Ally Research Memo

Appendix C. Survey Response Rate Methodology

The survey RR is the number of completed interviews divided by the total number of potentially eligible respondents. We calculated RR3 using the standards and formulas set forth by the AAPOR.[21] The formulas used to calculate RR3 are presented below. The definitions of the letters used in the formulas are shown in the survey disposition tables in the Online Store participant survey and Instant Incentives participant survey sections of this report.

Equation 1. Formula for RR3

$$RR3 = \frac{I}{\left(I + N + e1(U1 + e2 * U2)\right)}$$

Where:

$$e1 = \frac{(I + N)}{(I + N + X1)}$$

$$e2 = \frac{(I + N + X1 + U1)}{(I + N + X1 + U1 + X2)}$$

We also calculated a cooperation rate, which is the number of completed interviews divided by the total number of eligible sample units. We used AAPOR Cooperation Rate 3 (COOP3) for the web surveys used in this evaluation, which is calculated as:

Equation 2. AAPOR Cooperation Rate 3

$$COOP3 = \frac{I}{((I + P) + R)}$$

[21] *Standard Definitions: Final Dispositions of Case Codes and Outcome Rates for Surveys*, AAPOR, 2011. http://www.aapor.org/AM/Template.cfm?Section=Standard_Definitions2&Template=/CM/ContentDisplay.cfm&ContentID=3156.

Appendix D. NTGR Results

In PY8, the evaluation team conducted research with participants in the Online Store and Instant Incentives offerings to update the NTGRs for these offerings for application in PY10. Consistent with prior program years, we developed the NTGRs using self-reported information from computer-assisted web interviewing (CAWI) surveys with program participants. We used participant survey responses to develop estimates of FR and participant spillover (PSO). We applied our estimate of non-participant spillover (NPSO) from our PY7 research.

Key Findings

Table 31 presents the results of our PY8 net-to-gross (NTG) analysis for application in PY10.

Table 31. Updated Standard Electric NTGRs from PY8 Research

Offering	Free-Ridership (FR)	Participant Spillover (PSO)	Non-Participant Spillover (NPSO)[A]	NTGR (1-FR+PSO+NPSO)
Online Store	0.194	0.024	0.00	0.831
Instant Incentives	0.214	0.005	0.00	0.791

[A] From PY7 research.

NTGR Background

Net impact evaluation is generally described in terms of determining program attribution. Program attribution accounts for the portion of gross energy savings associated with a program-supported measure or behavior change that would not have been realized in the absence of the program. The program-induced savings, indicated as a NTGR, is made up of FR and SO and is calculated as (1 – FR + SO). FR is the portion of the program-achieved verified gross savings that would have been realized absent the program and its interventions. SO is generally classified into participant and non-participant spillover. PSO occurs when participants take additional energy-saving actions that are influenced by the program interventions but did not receive program support. NPSO spillover is the reduction in energy consumption and/or demand by customers who did not participate in the program yet were influenced by it.

The formula to calculate the NTGR is:

$$NTGR = 1 - FR + PSO + NPSO$$

The Illinois evaluation teams have worked with the ICC and the Illinois SAG to create a standard Illinois Statewide Net-to-Gross approach for use in Illinois energy efficiency evaluation, measurement, and verification work. Per the NTG Methods attachment to the Illinois TRM,[22] all NTG data collection and analysis activities for program types covered by the attachment that began after June 1, 2016 must conform to the statewide NTG methods. This evaluation conforms with these requirements.

[22] Illinois Statewide Technical Reference Manual for Energy Efficiency, Version 5.0. Volume 4: Cross-Cutting Measures and Attachments. Dated: February 11, 2016. Effective: June 1, 2016.

Free-Ridership

Methodology

Free-riders are program participants who would have installed the same energy-efficiency measure(s) or taken the same energy-saving actions without program support. FR estimates are based on a series of questions that explore the influence of the program on participants' purchasing decisions as well as actions the participant likely would have taken had the program not been available.

As prescribed by the Core Non-Residential Protocol in the NTG Methods attachment, we implemented six specifications of the FR algorithm for **Instant Incentives** projects included in the participant survey.[23] Each specification of the algorithm consists of three scores: 1) influence of program components (PC) score, 2) overall program influence (PI) score, and 3) no-program (NP) score (counterfactual), as well as a timing adjustment. Each sub-score serves as a separate estimator of free-ridership and can take on a value of 0 to 1, where a higher score means a higher level of free-ridership. The overall free-ridership score for a project is the average of the three scores, combined with a timing adjustment. Depending on the specification, the timing adjustment is applied to either the no-program score or the preliminary overall FR score (average of the three sub-scores). The FR score for each project thus ranges from 0 (no FR) to 1 (100% FR).

For the **Online Store** offering, we applied the Small Business Protocol of the NTG Methods attachment. To reduce respondent burden, the Small Business Protocol allows for some components of the Core Non-Residential Protocol to be omitted. The algorithm used for our evaluation of the Online Store includes the three scores incorporated in the Core Non-Residential Protocol, but does not include variations of the timing adjustment. As such, we implemented only two specifications of the FR algorithm for Online Store projects included in the participant survey.[24] The timing adjustment is applied only to the no-program score in both specifications of the algorithm we applied.

The three scores included in the algorithms, their variations, and the timing adjustment are described below.

1. **Influence of Program Components**. This score is based on a series of questions that ask respondents to rate the importance of program and non-program components in their decision to install the energy-efficient equipment, using a scale of 0 to 10 (where 0 is "Not at all important" and 10 is "Very important").

   PC considered include such items as the availability of the incentive, information from program marketing materials, recommendations from market actors, and previous program experience. Non-program components considered include previous experience with the incented equipment and corporate policy. Table 32 summarizes the program and non-program components included in each offering's algorithm.

[23] In this appendix, we present results from all six specifications of free-ridership for the Instant Incentives offering (both versions of Algorithm 1 through Algorithm 3), select one algorithm as our choice to calculate program free-ridership, and justify our choice of algorithm.

[24] In this appendix, we present results from both specifications of free-ridership for the Online Store offering (Algorithms 1A and 1B), select one algorithm as our choice to calculate program free-ridership, and justify our choice of algorithm.

Table 32. Components and Assignments by Offering

Offering	Component	Type
Instant Incentives	Availability of the program discount	Program factors
	Recommendation from a distributor salesperson	
	Prior experience with the AIC Instant Incentives program (if applicable)	
	Informational materials from AIC highlighting the benefits of LEDs (if applicable)	
	Client requests for LEDs in particular (if applicable)	Non-program factors
	Standard practice in business or industry	
	Corporate policy or guidelines	
	Other factors	
	Financial criteria (such as payback) (if applicable)	Either, depending on followup
	Previous experience with LEDs (if applicable)	
Online Store	Availability of discounted product through Online Store	Program factors
	Information from AIC marketing materials	
	Free shipping	
	Convenience of online shopping	
	Corporate policy or guidelines	Non-program factors
	Previous experience with product	
	Other factors	

We estimate the PC score in two different ways, referred to as "Program Components FR Score A" and "Program Components FR Score B." Program Components FR Score A is based on ratings for program factors only. The FR score is calculated as:

Equation 3. Program Components FR Score A

$$PCS_A = 1 - \left(\frac{PF_{max}}{10}\right)$$

Greater importance of the PC means a lower level of FR. In this approach, if a respondent rated the program rebate 10 out of 10, the recommendation of program staff 8 out of 10, and the information from program materials 8 out of 10, the final Program Components FR Score A would be 0.

Program Components FR Score B is based on ratings for both program and non-program factors. The FR score is calculated as:

Equation 4. Program Components FR Score B

$$PCS_B = 1 - \left(\frac{PF_{max}}{PF_{max} + NPF_{max}}\right)$$

Greater importance of the PC relative to the importance of non-program components means lower level of FR. In this approach, if a respondent rated both the program rebate and corporate policy as a 10 out of 10, the final PC FR score would be a 0.5.

2. **Program Influence**. This score is based on a survey question asking the respondent to rate the importance of the program compared to the importance of other factors in their decision to implement the energy-efficient equipment. To do so, respondents were asked to divide 100 points between the program and other, non-program factors. This score is estimated as:

   PI FR Score = 1 – (Points Given to Program / 100)

   More points allocated to the program means lower level of FR. For example, if a respondent gave the program 70 points out of 100, the PI FR score would be 0.30.

3. **No-Program Score.** This score is based on the likelihood that the exact same energy-efficient equipment would have been installed without the program, using scale of 0 to 10 (where 0 is "Not at all likely" and 10 is "Very likely") and is calculated as follows:

   NP Score = Likelihood to Install Same Equipment / 10

   A greater likelihood of participating without the program means higher level of FR. For example, if the participant provides a likelihood rating of 7 to install the same equipment in the absence of the program, their NP FR score would be a 0.70.

   In some specifications of the algorithm for Instant Incentives, and both specifications for the Online Store offering, this score also incorporates a timing adjustment (discussed next) as follows:

   $$NP\ Score_{Adjusted} = (Likelihood\ to\ Install\ Same\ Equipment / 10) * Timing\ Adjustment$$

4. **Program Timing Adjustment.** The program timing adjustment is calculated in up to three ways in accordance with the NTG Methods attachment and incorporates information from one or two survey questions.

   - The first question asks 1) whether the installation would have been done at the same time without the program; and 2) if the installation would have been done later, how much later.
   - The second question asks the respondent to provide a likelihood, on a 0 to 10 point numeric scale, of implementing the same measure within 12 months of when it was actually implemented.

   The three timing adjustments are referred to as Timing Adjustment 1, Timing Adjustment 2, and Timing Adjustment 3, and are described below.

   Timing Adjustment 1

   Timing Adjustment 1 uses only the first question. In this adjustment, later purchases without the program means a lower level of FR. This adjustment is calculated on a 0 to 1 scale. A timing adjustment of 1 means that there is no evidence that the program changed the time frame in which the project would have been implemented, while a lower value of the timing adjustment means that the program caused the project to

be implemented sooner. The timing adjustment provides the program with some credit for accelerating the project by reducing the level of FR. Timing Adjustment 1 is calculated as follows:[25]

Timing Adjustment 1 = 1 – (Number of Months Expedited – 6) / 18

Timing Adjustment 1 is used in two of the six specifications of the Instant Incentives algorithm and both specifications of the Online Store algorithm. It is multiplied by the NP FR score.

Timing Adjustment 2

Timing Adjustment 2 uses both timing adjustment questions. In this adjustment, later purchases without the program means a lower level of FR, but the likelihood of implementing within a certain timeframe without the program is also taken into account. Like Timing Adjustment 1, this adjustment is calculated on a 0 to 1 scale, and a timing adjustment of 1 means that there is no evidence that the program changed the time frame in which the project would have been implemented, while a lower value of the timing adjustment means that the program caused the project to be implemented sooner. Timing Adjustment 2 is calculated as follows:[22]

Timing Adjustment 2 = 1 – ((Number of Months Expedited – 6) / 18)((10 – Likelihood of Implementing within 1 Year) / 10)*

Timing Adjustment 2 is used in two of the six specifications of the Instant Incentives algorithm and is multiplied by the average of the PC, PI, and NP scores.

Timing Adjustment 3

Timing Adjustment 3 uses only the second timing adjustment question. In this adjustment, decreased likelihood of implementing the project within 1 year without the program means a lower level of FR. This adjustment is calculated on a 0 to 1 scale. Timing Adjustment 3 is calculated as follows:

Timing Adjustment 3 = Likelihood of Implementing within 1 Year / 10

Timing Adjustment 3 is used in two of the six specifications of the Instant Incentives algorithm and is averaged with the NP FR score. If the average is greater than the NP FR score, the Timing Adjustment is discarded. If the average is smaller than the NP FR score, the average is used in place of the NP FR score.

This evaluation implemented and analyzed the following six specifications of the FR algorithm.

- **Approach 1A:** (PC FR Score A + PI Score + [NP Score * Timing Adjustment 1]) / 3
- **Approach 1B:** (PC FR Score B + PI Score + [NP Score * Timing Adjustment 1]) / 3
- **Approach 2A:** (PC FR Score A + PI Score + NP Score) / 3 * Timing Adjustment 2
- **Approach 2B:** (PC FR Score B + PI Score + NP Score) / 3 * Timing Adjustment 2

[25] Please note that the NTG Methods attachment prescribes a divisor of 42 and a "number of months expedited" that can range up to 48 months. In these implementations of the algorithm, we allow "number of months expedited" to range up to only 24 months and adjust the divisor appropriately in order to provide responses that are more realistic for the type of purchase (lighting products) captured in this assessment.

- **Approach 3A:** ((PC FR Score A + PI Score) / 2 + (MINIMUM((NP Score + Timing Adjustment 3) / 2 , NP Score)) / 2
- **Approach 3B:** ((PC FR Score B + PI Score) / 2 + (MINIMUM((NP Score + Timing Adjustment 3) / 2 , NP Score)) / 2

In each specification, one of the two variants of each PC score, PI score, and NP score are combined together with a timing adjustment. Table 33 summarizes the differences between the six FR specifications and which algorithm specifications were implemented for the analyses of the Instant Incentives Program and the Online Store, respectively.

Table 33. Free-Ridership Algorithm Specifications

Free-Ridership Algorithm Specification	Variant Used					Algorithm Implemented	
	Program Components FR Score	Program Influence Score	No-Program Score	Adjusted No-Program Score	Overall Timing Adjustment	Instant Incentives Program	Online Store
Approach 1A	A	✓		✓		✓	✓
Approach 1B	B	✓		✓		✓	✓
Approach 2A	A	✓	✓		✓	✓	
Approach 2B	B	✓	✓		✓	✓	
Approach 3A	A	✓		✓		✓	
Approach 3B	B	✓		✓		✓	

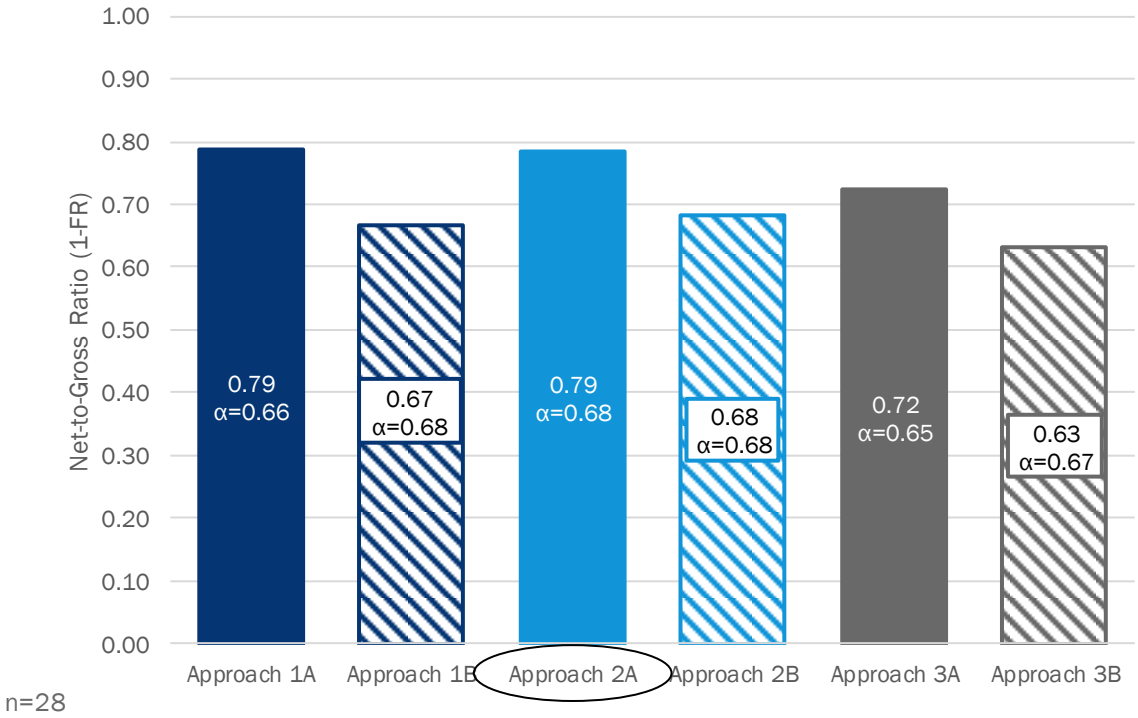
We used Cronbach's alpha as a tool to help us evaluate the different algorithm specifications for the Instant Incentives offering.[26] As each of the three scores incorporated into the final FR estimate serves as a separate estimate of FR, we used Cronbach's alpha to examine the internal consistency of the three scores for each specification, working from the basis that a higher degree of internal consistency is desirable for the algorithm. We also examined and compared FR results across algorithms.

Instant Incentives Results

Figure 12 presents our NTGR estimates for the Instant Incentives offering without SO included (i.e., calculated as 1 − FR) for each of the six specifications of the FR algorithm discussed above. The figures also show the associated Cronbach's alphas. A higher Cronbach's alpha means an increased internal consistency between the three scores developed. As discussed below, we chose Approach 2A as our specification for this evaluation. As we attempted a census of all participants for this evaluation, there are no error bounds around our estimates of the NTGRs for Instant Incentives.

[26] Cronbach's alpha is a test that examines the consistency of tests that measure the same construct.

Figure 12. Instant Incentives NTGR (1 – FR) and Cronbach's Alphas by Approach



A general rule of thumb is that a Cronbach's alpha of 0.7 or higher indicates an acceptable level of internal consistency. As can be seen, none of the six specifications of the algorithm meets this threshold. However, all six approaches are relatively close to this level, and no statistically significant differences between the Cronbach's alphas for the various specifications are present. When we examine the scores inside each algorithm specification, we find that the Program Components FR Score B is generally close to 0.5, regardless of other responses provided (such as responses to questions used to calculate the NP Score, as well as the timing adjustment). As such, we feel that an algorithm incorporating this score is not a reasonable choice for use, since it reduces the correlation among the two components in the NTGR algorithm, thus reducing the reliability of the resulting NTGR.

The evaluation team examined these results and chose Approach 2A (circled in the above figure) as the preferred FR approach for this evaluation of the Instant Incentives offering. We base this decision on the relatively high Cronbach's alpha for this specification and our professional judgment that the mathematical approach that Approach 2A takes to the timing adjustment is appropriate. It should be noted (and can be seen in Figure 12) that Approach 1A produces a virtually identical result to Approach 2A in this case.

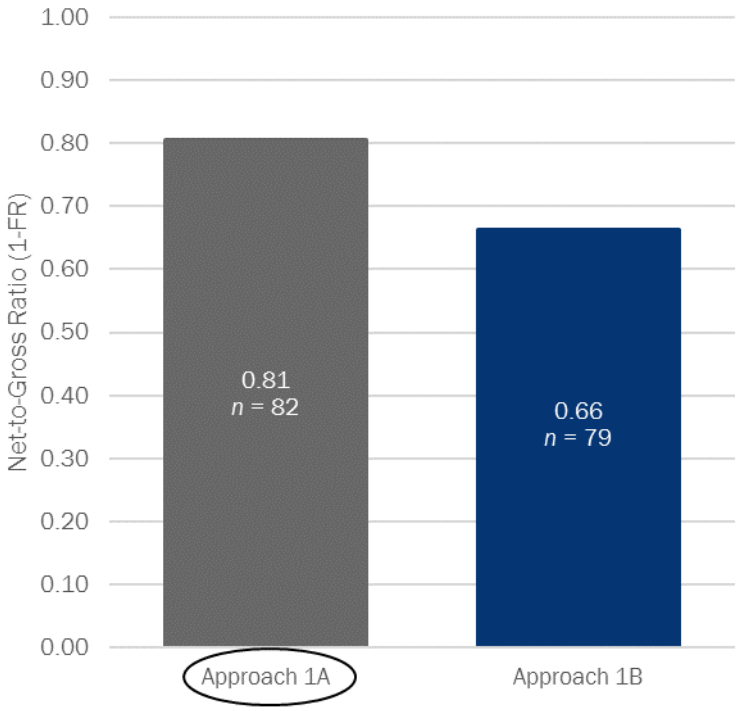
Online Store Results

Figure 13 presents our NTGR estimate for the Online Store offering without SO included (i.e., calculated as 1 – FR) for each of the two specifications of the FR algorithm applied to the Online Store offering (Methods 1A and 1B).

As we attempted a census of all participants, there is no sampling error around our estimates of the NTGRs for this evaluation. The evaluation team examined these results and chose Approach 1A (circled in the above figure) as the preferred FR approach for this evaluation. When we examine the scores inside each algorithm

specification, we find that the Program Components FR Score B is generally close to 0.5, regardless of other responses provided (such as responses to questions used to calculate the NP Score, as well as the timing adjustment). As such, we feel that an algorithm incorporating this score is not a reasonable choice for use, since it reduces the correlation among the two components in the NTGR algorithm, thus reducing the reliability of the resulting NTGR.

Figure 13. Online Store NTGR (1 – FR) by Approach



Participant Spillover

Methodology

PSO refers to the installation of energy-efficient measures by program participants that were influenced by the program but did not receive an incentive. An example of PSO is a customer who installed incented equipment in one facility and, as a result of the positive experience, installs additional equipment at another facility but does not request an incentive (outside SO). In addition, the participant may install additional equipment, without an incentive, at the same facility because of the program (inside SO).

We examined both inside and outside SO in projects from lighting and non-lighting end uses using participant responses to the CAWI surveys and callbacks, as necessary. We conducted an engineering analysis of participant responses to determine the savings associated with measures identified as SO.

After calculating the SO savings reported by participants in our sample, we use Equation 5 to develop the program PSO rate.

Equation 5. Participant Spillover Rate

$$PSO\ Rate = \frac{Total\ SO_{Participant\ Sample}}{Total\ Ex\ Post\ Gross\ Program\ Savings_{Participant\ Sample}}$$

Instant Incentives Results

Based on results from the Instant Incentives CAWI survey, spillover was present for one survey respondent. Our engineering analysis of the spillover project completed by this participant determined total spillover savings of 3,981.6 kWh for the participant sample. These savings are presented in Table 34.

Table 34. Instant Incentives Participant Spillover Measures and Savings

Spillover Measure	Total kWh
CFLs	1,528.2
LED lamps	416.4
Occupancy sensors	2,037.0
Total	**3,981.6**

Dividing the estimated total spillover in our sample (3,982 kWh) by total program gross savings of the overall participant sample (741,651 kWh) yields a spillover rate of 0.54%, as shown in Equation 6.

Equation 6. PY8 Instant Incentives Participant Spillover Rate

$$PSO\ \% = \frac{Total\ participant\ sample\ SO\ (MWh)}{Total\ participant\ sample\ savings\ (MWh)} = \frac{3{,}982\ kWh}{741{,}651\ kWh} = 0.54\%$$

Online Store Results

Based on results from the Online Store CAWI survey, electric spillover was present for two survey respondents. Our engineering analysis of the spillover projects completed by these two participants determined total spillover savings of 9,877 kWh for the participant sample. These savings are presented in Table 35.

Table 35. Online Store Participant Spillover Measures and Savings

Spillover Measure	Total kWh
LED lamps	6,956.6
Linear fluorescent lamps	2,920.9
Total	**9,876.5**

Dividing the estimated total spillover for the two participants (9,877 kWh) by total program gross savings of the overall participant sample (404,565 kWh) yields a spillover rate of 2.44%, as shown in Equation 7.

Equation 7. PY8 Online Store Participant Spillover Rate

$$PSO\ \% = \frac{Total\ participant\ sample\ SO\ (MWh)}{Total\ participant\ sample\ savings\ (MWh)} = \frac{9{,}877\ kWh}{404{,}565\ kWh} = 2.44\%$$

Appendix E. ISR Results

As part of our PY8 research, the evaluation team calculated program-specific ISRs for the Online Store and Instant Incentives programs. To collect data for ISR calculations for each program, we fielded an ISR battery as part of the participant surveys for each offering. This appendix describes the survey data and ISR algorithms that the evaluation team used to calculate ISRs for the Online Store and the Instant Incentives programs. Copies of the survey instruments are provided in Appendix A above.

Key Findings

Table 36 presents the results of our ISR analysis for the PY8 Online Store and Instant Incentives programs. For the Online Store, we found a first-year ISR of 90.2% for CFLs, 89.6% for LEDs, and 76.9% for Other Measures. For the Instant Incentives program, we found a first-year ISR of 77.8% for the overall program. The maximum 3-year ISR assumes 98% of received bulbs will be installed over that time period, following the IL-TRM V4.0's 3-year time line for counting carryover savings in C&I programs.

Table 36. Bulb In-Service Rates for PY8 Instant Incentives and Online Store Components

Offering	% Verified	% Installed	First-Year ISR[a]	Cumulative ISR After 3 Years
Online Store[b]				
CFLs (n=135)	98.5%	91.6%	**90.2%**	**96.5%**
LEDs (n=49)	95.8%	93.5%	**89.6%**	**93.9%**
Other Measures (n=44)	99.4%	77.4%	**77.0%**	**97.4%**
Instant Incentives				
Program-wide	100.0%	77.8%	**77.8%**	**98.0%**

[a] Online Store ISR = %Verified x %Installed. Instant Incentives ISR = %Verified x %Installed x %Persisting, where %Persisting =100%.
[b] Online Store CFLs includes all Online Store CFLs, including CFL kits. Online Store LEDs includes all LEDs. Online Store Other Measures includes LED exit signs, downlights, exterior lights, and occupancy sensors.

Online Store

To calculate the PY8 Online Store ISR, we used the responses from 131 completed surveys covering 2,520 products. Respondents were asked to verify or update the quantities of each lighting product that they purchased, as recorded in program-tracking data. Next, respondents were asked to report the number of received products that were currently installed. We used these survey responses to develop rates of product verification *(%Verified*) and installation *(%Installed*). We combined these rates to estimate an overall ISR for each product that a survey respondent purchased, according to Equation 8.

Equation 8. Online Store In-Service Rate Algorithm

$$ISR = (\%Verified) \times (\%Installed)$$

While we asked each respondent about the receipt and installation of each type of measure that they ordered through the Online Store (e.g., specialty LEDs, standard LEDs, downlights), we grouped ISRs by measure category rather than by individual measure type because of small sample sizes for individual measures. The three measure types are: CFLs (including free CFLs), LEDs, and other products (LED exit signs, downlights,

occupancy sensors, and exterior lights). Before aggregating, we weighted measure-level ISRs by relative share of product counts. Table 37 below shows the PY8 first-year ISRs for the Online Store, by measure category.

Table 37. First-Year Online Store In-Service Rates, by Measure Category

Measure Category[a] (number of respondents)	Product Count (Ex Ante)	% Verified	% Installed	First-Year ISR
CFLs (n=135)	1,624	98.5%	91.6%	**90.2%**
LEDs (n=49)	566	95.8%	93.5%	**89.6%**
Other Measures (n=44)	330	99.4%	77.4%	**77.0%**
Total	**2,520**			

[a] Online Store CFLs includes all Online Store CFLs, including CFL kits. Online Store LEDs includes all LEDs. Online Store Other Measures includes LED exit signs, downlights, exterior lights, and occupancy sensors.

Installations at Business vs. Residential Locations

Program-tracking data and participant self-reports indicated that multifamily properties were a fraction of Online Store participants (5% or 3%, respectively). When asked about the type of locations where participants installed their PY8 lighting, respondents indicated that 95% of lighting was installed in business locations and that 5% was installed in residential locations. It is possible that some respondents installed lights in common areas or exteriors of multifamily buildings and reported these as "residential" installations. For this year's ISR, we have not incorporated installation location into the ISR, and assume that 100% of lights are installed in commercial settings. However, we do recommend that the program explores installation locations in more detail moving forward.

Future Installations

According to participants, most of the remaining uninstalled lighting was purchased either as spare lighting or for a specific project that had not yet been finished by the time of the survey. Participant data suggest that most uninstalled CFLs and LEDs were purchased as spares, whereas most "other" products were purchased for future or ongoing projects. Interestingly, a small number of participants whose LEDs comprised more than one-half of the remaining uninstalled LEDs did indicate that they purchased the bulbs for future projects. Overall, participants with remaining uninstalled bulbs plan to install most (84%) of these products in the coming year (n=244 products).

Based on these self-reported plans for future installations within 1 year, it seems likely that participants will eventually install most of their Online Store lighting. As a result, we recommend that the program captures future installations following the IL-TRM V4.0's 3-year time line for counting carryover savings in C&I programs. This approach assumes that 98% of verified received bulbs will eventually get installed over the course of 3 years following purchase and prescribes an installation trajectory in which "… 54% of future installs occur in year 2 and 46% in year 3. The 2nd and 3rd year installations should be counted as part of those future program year savings." However, we recommend that the program take credit for the fact that most bulbs not installed in Year 1 will be installed in Year 2, and therefore assume a distribution in which 84% of future installs occur in Year 2 and 16% in Year 3.

Table 38. Online Store First-, Second-, and Third-Year In-Service Rates

Measure Category[a]	% Verified	First-Year ISR	Second-Year Installations[b]	Third-Year Installations[b]	3-Year Total ISR[c]
CFLs	98.5%	90.2%	5.3%	1.0%	**96.5%**
LEDs	95.8%	89.6%	3.6%	0.7%	**93.9%**
Other Measures	99.4%	77.0%	17.1%	3.3%	**97.4%**

[a] Online Store CFLs includes all Online Store CFLs, including CFL kits. Online Store LEDs includes all LEDs. Online Store Other Measures includes LED exit signs, downlights, exterior lights, and occupancy sensors.
[b] As a percentage of % Verified. Second- and third-year installations are additive to first-year installations.
[c] Three-year cumulative installations are 98% of the verified bulbs.

Instant Incentives

To calculate the PY8 Instant Incentives ISR, we used the responses from 24 completed surveys covering 5,561 products. We used a series of questions at the beginning of the survey to confirm each respondent was the most knowledgeable person about his or her business's participation in the Instant Incentives program. As discussed in Appendix A, the evaluation team decided to calculate ISRs and NTGRs only for the LED products (standard LEDs, specialty LEDs, and linear LEDs) due to the limited quantity of CFLs and occupancy sensors purchased during PY8. Therefore, respondents were asked to first verify or update the quantities of each LED product that they purchased, as recoded in program-tracking data. Next, respondents were asked to report the percentage of received products that were currently installed, differentiating between those installed inside AIC service territory and those installed outside AIC service territory. Finally, respondents were asked what percentage of installed LEDs have subsequently been removed. We combined these survey responses to estimate an overall ISR for each product that a survey respondent purchased, according to Equation 9below.

Equation 9. Instant Incentives In-Service Rate Algorithm

$$ISR = (\%\, Verified) \times (\%\, Installed) \times (\%\, In\ AIC\ Territory) \times \big(1 - (\%\, Removed)\big)$$

Three respondents reported purchasing quantities that were between 96 and 181 units larger than was recorded in program-tracking data, which in each instance represents verified quantities that are more than 200% of the ex ante program-tracking data quantities. We decided to exclude these three respondents from the ISR analysis for several reasons. First, a discrepancy of this magnitude is markedly uncharacteristic of the AIC C&I Standard Program as a whole, which has supported realization rates at or above 100% in the past several years. Consistent with this perspective, these three respondents were the only PY8 Instant Incentives participants to provide verification rates either above or below 100%. It is also possible that these participants have some recall biases, such as thinking of purchases made just before or after the PY8 program year.

After removing these outliers, the evaluation team suggests applying the program-wide first-year ISR of 77.8% to PY8 Instant Incentives measures. Results are shown in Table 39 below.

Table 39. First-Year Instant Incentives In-Service Rate

Measure (number of respondents)	Product Count (Ex Ante)	% Verified	% Installed	% in AIC Service Territory	% Removed	First-Year ISR
Standard LEDs (n=13)	2,017	100%	93.6%	100%	0%	93.6%
Specialty LEDs (n=17)	2,430	100%	54.5%	100%	0%	54.5%
Linear LEDs (n=6)	1,114	100%	100.0%	100%	0%	100.0%
Program-Wide (n=24)	**5,561**	**100%**	**77.8%**	**100%**	**0%**	**77.8%**

While most PY8 participants reported that they installed 100% of their Instant Incentives LED products—and installed them at locations within the AIC service territory—the survey-based first-year ISR is below 100% due to three respondents who purchased large quantities of lighting and reported installing just 10%–50% of their lighting by the time of the survey. All three respondents with individual ISRs below one indicated that they will install at least some of these bulbs in the coming year.

Based on these self-reported plans for future installations within 1 year, it seems likely that participants will eventually install most of their Instant Incentives lighting. We recommend that the program capture future installations following the IL-TRM V4.0's 3-year approach for counting carryover savings in C&I programs. This approach is based on evaluations of a midstream lighting program. This approach assumes that 98% of received bulbs will eventually get installed, and assumes that "… 54% of future installs occur in year 2 and 46% in year 3. The 2nd and 3rd year installations should be counted as part of those future program year savings."

Table 40. Instant Incentives First-, Second-, and Third-Year In-Service Rates

% Verified	First-Year ISR	Second-Year Installations[a]	Third-Year Installations[a]	3-Year Total ISR[b]
100%	77.8%	10.9%	9.3%	**98.0%**

[a] As a percentage of % Verified. Second- and third-year installations are additive to first-year installations.
[b] Three-year cumulative installations are 98% of the verified bulbs.

The program-wide first-year ISR is within the bounds of several ISRs recently developed for other midstream lighting programs in Illinois (e.g., the ComEd Business Incentives for Lighting Distributors, or "BILD," program). Specifically, the PY6 BILD program evaluation reports ISRs between 71% (CFLs) and 98% (linear fluorescents) developed as a rolling 3-year weighted average of self-reports from PY4, PY5, and PY6.

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Appendix F. Cost-Effectiveness Inputs

Table 41 presents total gross impacts for AIC cost-effectiveness calculations. These values differ from those included in the main report due to the inclusion of heating penalties for lighting measures. This approach was taken based on discussions with AIC and past agreements between AIC and ICC staff that heating penalties would not be included in savings calculations for goal attainment.

Table 41. PY8 Standard Program Gross Impacts (Including Heating Penalties)

	MWh	MW	Therms
Total Gross Savings without Heating Penalty	96,386	14.95	3,407,096
Core Program Heating Penalty	0	0	(546,295)
Instant Incentives Heating Penalty	0	0	(87,856)
Online Store Heating Penalty	0	0	(53,984)
Green Nozzle Heating Penalty	0	0	0
Total Gross Savings with Heating Penalty	**96,386**	**14.95**	**2,718,961**

Lighting Heating Penalty

The inclusion of waste heat factors for lighting is based on the concept that heating loads are increased to supplement the reduction in heat that was once provided by the existing lamp type. The program-tracking database does not provide the heating fuel type; therefore, the evaluation team applied gas heat waste heat factors as specified in the IL-TRM V4.0 (when heating fuel is unknown). The total heating penalty for lighting measures in the Standard Program is 688,135 therms.

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