IMPACT AND PROCESS EVALUATION OF AMEREN ILLINOIS COMPANY'S RESIDENTIAL LIGHTING PROGRAM (PY4)

Final

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1. EXECUTIVE SUMMARY

This report presents results from the evaluation of the PY4 (June 2011 to May 2012) Residential Lighting Program. The Residential Lighting Program is designed to increase awareness and usage of ENERGY STAR® (ES) lighting among residential customers. The program is aimed at an eventual transformation of the residential lighting market in AIC territory. The expected savings from this program is 33% of the overall portfolio of electric savings and 0% of portfolio therm savings (including both residential and commercial).

To support the evaluation, we conducted in-depth interviews with program staff, reviewed program data and program materials, conducted participating retailer interviews, an in-home lighting study, and an in-home customer survey.

Impact Results

Ameren Illinois Company's (AIC) Residential Lighting Program sold a total of 4,370,576 bulbs in PY4, exceeding both its original and revised bulb sales goals. The original sales goal of 3.2 million bulbs was increased to 4.3 million to ensure that overall PY4 portfolio goals were met. The vast majority of bulbs sold (94%) were standard CFLs sold through the markdown program. The webstore sold a very small number of bulbs though it did sell the first LEDs discounted through the program.

Table 1. Bulb Sales by Type and Sales Channel

Bulb Type	Markdown	Webstore	Total
Standard CFL	4,097,905	1,047	4,098,952
Specialty CFL	270,933	673	271,606
LEDs	0	18	18
Total	**4,368,838**	**1,738**	**4,370,576**

AIC chose to begin applying the 2012 Statewide TRM installation rate method in PY3, which spreads program savings out over the three years it takes for customers to install all the program bulbs they purchased. As a result, PY4 savings are comprised of bulbs sold in PY3 and installed in PY4 in addition to bulbs sold in PY4 and installed in PY4. A portion of PY4 savings will be applied in future years to PY5 and PY6.

As shown in Table 2, the program achieved 15.4 MW in net demand savings and 145.7 MWh in net electric savings.

Table 2. PY4 Residential Lighting Program Net Impacts

	Ex Ante Net Impacts		Ex Post Net Impacts	
	MW[a]	MWh	MW	MWh
Residential Lighting Program	–	141,892	15.36	145,737
			Net Realization Rate	*1.03*

[a] Conservation Services Group (CSG), the implementer, is not required to track demand savings.

Note: Realization Rate = Ex Post Value / Ex Ante Value.

The Residential Lighting Program's realization rate for PY4 net energy savings is 1.03. Ex post savings are different from ex ante savings for several methodological reasons:

- The program savings method assumes that 100% of program sales are installed in residential spaces. Our evaluation assumes that 3% of bulbs are installed in commercial spaces that have greater hours of use.
- The program savings method assumes residential bulbs are used for 854 hours a year. The evaluation applied the 2012 Statewide TRM hours of use assumptions, which specify 938 hours for residential spaces and 3,198 for miscellaneous commercial spaces.
- The evaluation applied the 2012 Statewide TRM banked savings method whereas the program tracking used a single installation rate of 93%.

Process Results

The Residential Lighting Program ran smoothly in PY4 according to program staff and participating retailers. Implementation staff credited excellent performance of and communication between the various implementers involved in the program as crucial to the success of the program. Additionally, participating retailers are satisfied with the program and its processes. Retailers expressed a clear understanding of the program and excellent lines of communication with their field representatives.

AIC relied primarily on in-store marketing to promote the program. The program supplied participating retailers with a number of different types of point-of-purchase materials. The program's field representatives conducted a number of in-store product demonstrations with customers and trainings with retailers. All retailers reported receiving and using POP sales materials from their field representative. All of the retailers found the signage and materials useful—one retailer suggested that in the future, the program could provide large signage for placement outside the store.

CFL penetration and saturation are significantly higher in 2012 compared to 2010. Our in-home lighting study found that 93% of AIC homes have at least one CFL installed compared to 87% of homes in 2010. CFLs are installed in 33% of light sockets in the average home in 2012 compared to 25% in 2010.

Given current levels of CFL socket saturation, opportunity remains for additional savings from a residential lighting program that targets both standard and specialty bulbs. CFLs are installed in 41% of standard sockets compared to 18% of specialty sockets. Though CFL saturation is higher in standard than specialty sockets, the average home has nearly 2.5 times as many standard sockets as specialty sockets. We estimate that there are an additional 15.6 million standard sockets and 9.8 million specialty sockets that could be filled with CFLs or LEDs.

Despite the potential for additional savings from energy efficient lighting, it will be important to monitor purchase behavior in light of the Energy Independence and Security Act (EISA) regulations going into effect in the coming years. Awareness of EISA is currently relatively low, with slightly over half of customers aware of the regulations. When EISA is explained, a majority of customers say they will purchase CFLs to fill sockets now filled with EISA-impacted bulbs. Few report that they will purchase lower or higher wattage incandescents or the new EISA compliant halogens. Likewise, few report that they will stockpile 75-watt bulbs in anticipation of their phase out in 2013. Our in-home lighting study also found little evidence of actual stockpiling of 100-watt and 75-watt incandescents, the first two wattages impacted by EISA. Program savings could be adversely

impacted in the next few years if EISA is the main driver of increased CFL usage.

Recommendations

Within this context, we offer the following recommendations for program improvement.

- **Track all the data necessary to calculate program savings in one location.** The official program tracking database does not contain all the information necessary to calculate program savings. Base wattage and lumens are not tracked. The 2012 Statewide TRM also requires type of bulb (e.g., specialty, standard) and type of specialty (e.g., globe, reflector). The savings calculations in the new TRM are much more complex. Including all necessary data in the tracking database would aid in program tracking and evaluation.

- **Attempt to increase sales of specialty CFLs to increase CFL socket saturation.** Although the program discounts a large number of specialty CFL products, only 6% of bulbs sold through the program are specialty CFLs. Specialty CFL saturation lags behind standard CFLs. Price is still a barrier to purchase for discounted specialty CFLs given the bulbs' higher regular retail price. AIC may want to consider increasing incentives on specialty CFLs to attract customers who will not purchase such an expensive bulb.

- **Closely monitor the impact of program incentives versus EISA on CFL purchases.** EISA has changed the products available to customers. After providing customers information about the different bulbs they could purchase to replace 100-watt incandescents, most said they would purchase CFLs and not switch to a different wattage incandescents or EISA-compliant halogens. The information we provided to customers included purchase price and operating cost. If EISA ends up being the main driver of CFL sales, program net savings will be adversely impacted. If customers are accurately self-reporting their purchase intentions, the program may need to reconsider incenting EISA-regulated bulbs. The majority of program sales are 60-watt equivalent CFLs so the impact on program savings will not be until PY7.

- **Explore the market for LED incentives. At the same time, provide customers with guidance about what to look for when purchasing LEDs.** Interest in LEDs is currently low due to the high costs of the bulbs, but as costs come down, the bulbs would be a viable alternative to CFLs in some applications. It is important for early adopters of LEDs to be happy with their purchase. Early adopters of CFLs were disappointed in the product, in part because the early products had problems. A large number of LEDs are entering the market and not all of them have the same capabilities. In addition, dimmable LEDs are not compatible with all dimmers, which is also true of dimmable CFLs. Customers may be disappointed with the performance of these products given their higher cost. AIC should consider providing customers with information about LEDs and their different applications.

2. INTRODUCTION

This report presents results from the PY4 evaluation of the AIC Residential Lighting Program. The Residential Lighting Program is designed to increase awareness and usage of ENERGY STAR® (ES) lighting among residential customers. The program is aimed at an eventual transformation of the residential lighting market in AIC territory. The program seeks to increase awareness of energy efficient lighting and its benefits through marketing and outreach efforts at participating retailers, the AIC website, and the mass media. The program partners with retailers and lighting manufacturers to sell ES lighting at a discount to bring the cost closer to less efficient lighting options on the market. The discounts encourage customers who are reluctant to pay full price for ES lighting to choose energy efficient over standard lighting.

The Residential Lighting Program was launched in August 2008 and is implemented by Conservation Services Group (CSG) with subcontractors Applied Proactive Technologies (APT) and Energy Federation, Incorporated (EFI). In PY4, sales goals for the program were originally set at 3.2 million units, and were increased to 4.3 million during the year. This evaluation reviews the program's performance in PY4, which began in June 2011 and ended in May 2012.

3. EVALUATION METHODS

3.1 DATA SOURCES AND ANALYTICAL METHODS

The assessment of the fourth year of the Residential Lighting Program included both process and impact analyses. The table below summarizes the activities performed by the evaluation team in support of the PY4 evaluation.

Table 3. Summary of Evaluation Methods

Task	PY4 Impact	PY4 Process	Forward Looking	Details
Program Staff In-Depth Interviews	√	√		Gathered detailed information on the step-by-step operational conditions and implementation efforts to gain an understanding of program design and delivery
Program Data Review	√			Verified program-reported savings
Program Materials Review		√		Reviewed program implementation plan and marketing and outreach materials
Participating Retailer Interviews		√		Conducted structured interviews with participating retailers to gather insights into program processes, program marketing and training, and retailer satisfaction
In-Home Lighting Study	√	√	Used to calculate spillover	Completed 226 lighting audits. Collected information on the quantity and type of lighting in use and in storage in customers' homes.
In-Home Customer Survey	√	√		Conducted a survey with home lighting audit participants on past and future lighting purchase behavior

3.1.1 PROCESS ANALYSIS

Program Staff In-Depth Interviews

As part of our analysis, the evaluation team interviewed the program managers from AIC, CSG, APT, and EFI about their roles in the Residential Lighting Program, program processes, and day-to-day program administration. Topics addressed included marketing, data management and tracking, quality assurance, and program incentives.

Review of Program Materials and Data

The evaluation team conducted an extensive review of all program materials and data available, including the program implementation plan, marketing materials, field reports, and tracking databases.

Participating Retailer Interviews

The evaluation team completed interviews with top-selling lighting retailers and retail locations from PY4. We completed 10 interviews overall. For the three top-selling retailers, we completed interviews with managers or department heads at two different locations. For the next four top-selling retailers, we completed one interview at a single location. In all cases, the evaluation team spoke with the staff member who had the closest contact with APT field representatives in PY4. These individuals were either store managers or lighting/electrical department managers.

During the interviews, we explored the effectiveness of the program processes, retailer satisfaction with various components of the program, and any suggestions or desires on the part of the retailer for possible program changes in future years. We also asked retailers to assess, to the best of their ability, the impact of the program on sales of products covered by the program. Not all interviewed individuals were able to provide information on all questions asked. In most cases, the store managers had a better sense of the overall impacts and effects of the program than department heads.

In-Home Lighting Study

As part of the PY4 evaluation, we conducted in-home audits of the lighting installed and in storage in 226 homes in AIC service territory.[1] We completed 26 audits in the homes of customers who participated in the 2010 in-home study. A detailed lighting study of this nature provides the most accurate "snapshot" of the number, type, and location of residential lighting products. As part of this evaluation, we use the study results to assess the current compact fluorescent lamp (CFL) market and future program potential. We compare the results of this 2012 study with an in-home study conducted for AIC in 2010.[2]

In-Home Customer Survey

As part of the in-home lighting study, we asked participants to complete a short survey addressing past and future lighting purchasing behaviors and awareness of lighting market-related factors such as EISA. Before completing the survey, participants were asked to read a brief summary of incandescent, halogen, CFL, and LED bulbs, including information on cost per bulb, cost to use a bulb per year, and bulb life. The estimated costs provided to respondents were regular retail prices for all products at the time of the survey.

[1] The target sample size was selected to ensure we achieved 90% confidence and 10% precision for estimates of CFL penetration and saturation. Because these numbers can be highly variable across the population, we completed more audits than we felt were likely necessary to ensure the study met the target confidence and precision levels.

[2] The Cadmus Group, *Lighting Net-to-Gross Addendum—Multistate Study*. Prepared for Ameren Illinois, March 4, 2011.

3.1.2 IMPACT ANALYSIS

Gross Impacts

Before conducting the impact analysis, the evaluation team reviewed the methods the program uses to track savings as part of its database. We also reviewed the methods used in past evaluations. The program calculates gross savings using per unit electric savings values as outlined by the Illinois Commerce Commission in the Order for docket 10-0568. The basis for the values is the following formula:

Per Unit kWh Savings = Delta Watts/1000 * Hours of Use (HOU)

Where:

Delta Watts = Base Wattage[3] – CFL Wattage

HOU = 854[4]

Though the program targets residential customers, it cannot prevent commercial customers from purchasing bulbs at participating stores. Previous evaluations estimated that 3% of bulbs were sold to commercial customers and used different hours of use for bulbs sold to residential and commercial customers.[5] In our calculation of per unit kWh savings, we apply the same assumptions regarding the percentage of bulbs sold to residential and commercial customers. We apply the hours of use (HOU) assumptions from the 2012 Statewide TRM:

HOU = 938 for residential customers

HOU = 3198 for commercial customers[6]

The program calculates gross savings using the following formula:

Ex Ante Gross kWh Savings = Per Unit kWh savings * Number of Units Sold

As was done with previous evaluations of this program, we modify this formula by including an installation rate because only a portion of the bulbs purchased in PY4 will actually be installed in PY4:

[3] The base wattage for each CFL wattage is from the fixed values in ICC Order Plan 2 docket 10-0568 filed December 9, 2011.

[4] The hours of use for residential CFLs is from the fixed values in ICC Order Plan 2 docket 10-0568 filed December 9, 2011

[5] The Cadmus Group, *L&A Program Addendum #3*. Prepared for Ameren Illinois, May 10, 2011.

[6] In an addendum to the PY2 Residential Lighting evaluation, the Cadmus Group used the commercial HOU estimated for the ComEd PY1 Small C&I Intro Kit for the 3% of bulbs purchased by commercial customers. The same HOU value was used by Ameren Missouri. The Cadmus Group, *L&A Program Addendum #3*. Prepared for Ameren Illinois, May 10, 2011.

Realized Gross kWh Savings = Per Unit kWh savings * Number of Units Sold * Installation Rate (ISR)

The installation rate is calculated using the method outlined in the 2012 Statewide Technical Reference Manual (TRM). AIC chose to begin use of the method in PY3 to ease the transition to PY5 when the new method must be used. The method assumes that 2% of program CFLs will never be installed, but the remaining 98% will be installed over a three-year period. Installation rates also vary by bulb type with lower first-year installation rates for standard CFLs compared to specialty CFLs and fixtures. The program sold a small number of medium screw-based LEDs through the webstore. The 2012 TRM only contains first-year installation rates for LED downlights ranging from 0.95 to 1.00. Given the high cost of these bulbs, we chose to use an installation rate of 1.00 for the small number of LED bulbs purchased in PY4. Table 4 presents the three-year installation rates by bulb type presented in the TRM and used in this evaluation:

Table 4. 2012 TRM Residential CFL Installation Rates

Bulb Type	First Year	Second Year	Third Year	Final
Standard CFLs	69.5%	15.4%	13.1%	98%
Specialty CFLs	79.5%	10.0%	8.5%	98%
CFL Fixtures	87.5%	5.7%	4.8%	98%
LEDs (medium screw-based)	100%	–	–	100%

Because AIC began using this new ISR method in PY3, PY4 savings will include savings from sales made in both PY4 and PY3. For example, total program savings due to the sale of standard CFLs will comprise 69.5% of savings from sales in PY4 and 15.4% of savings from sales made in PY3.

The evaluation team calculated demand savings using the method outlined in the 2012 Statewide TRM:

Per Unit kW Savings = Delta Watts/1000 * ISR * Waste Heat Demand Factor (WHFd) * Summer Peak Coincidence Factor (CF)

Where:

Delta Watts = Base Wattage[7] – CFL Wattage

ISR = 2012 TRM (see Table 4)

WHFd = 1.11

CF = 9.5% (standard CFLs, general specialty, LEDs)

The 2012 TRM provides coincidence factors for different specialty CFL types ranging from 0.081 to 0.184. Our calculation of demand savings for specialty CFLs applies the value appropriate for each bulb type.

Table 5 summarizes the source of the data and assumptions used in the calculation of gross energy and demand savings.

[7] The base wattage for each CFL wattage is from the fixed values in ICC Order Plan 2 docket 10-0568 filed December 9, 2011.

Table 5. Sources Information for Gross Savings Inputs

Gross Savings Input	Source
Program Sales	PY4 Program Tracking Database
Base Watts	ICC Order Plan 2 docket 10-0568 filed December 9, 2011
CFL Watts	PY4 Program Tracking Database
Hours of Use	. 2012 Illinois Statewide Technical Reference Manual
Installation Rate	2012 Illinois Statewide Technical Reference Manual
Waste Heat Demand Factor	2012 Illinois Statewide Technical Reference Manual
Summer Peak Coincidence Factor	2012 Illinois Statewide Technical Reference Manual

Net Impacts

Consistent with the ICC Order for Docket 10-0568 dated December 21, 2010, we did not update the net-to-gross ratio (NTGR) for the Residential Lighting Program in PY4. We use the NTGR in both the PY2 and PY3 evaluations. This value is the average of the results from two studies. The multi-state study used a comparison approach and collected data on CFL usage and purchases from a number of states with varying levels of lighting program maturity, including some states with no programs at all. The results were used to estimate a model-predicting program NTGR. The NTGR from this study was 0.75. The second study was conducted in PY2 and consisted of retailer reports of program influence on CFL sales. The NTGR ratio from this study was 0.91. We averaged the two study results to produce a final NTGR of 0.83, which we used in both PY2 and PY3.

3.2 Sampling and Survey Completes

3.2.1 In-Home Lighting Study

As part of the PY4 evaluation, we conducted in-home audits of lighting in use and in storage in 226 homes in AIC service territory. We recruited participants via the telephone. We drew a stratified simple random sample from the AIC residential customer database in which we divided customers into eight geographic regions. The regional divisions make it easier to conduct the study from a logistical standpoint and also ensure that the study participants were representative of the entire AIC service territory. The number of target visits in each region was proportionate to the region's contribution to the overall AIC customer population.

Within each of the eight regions, we drew a simple random sample of customers of sufficient size to recruit twice as many customers as we needed to complete the target number of visits. We over recruit because when customers are called back, a few days after initially agreeing to participate, approximately half ultimately agree to the site visit. For this study, we recruited 430 customers for a visit and eventually completed 226.

AIC conducted an in-home lighting study with 92 customers in 2010. We attempted to complete re-audits with as many of these customers as possible. Thirty-five of the customers initially agreed to an audit and we completed audits with 26 of these previous participants.

Table 6. Completed In-Home Lighting Study Survey Points

Respondent Type	Population	Sample Frame	Soft Recruits	Completes
New Participants	1,056,441	8,992	395	200
Previous Participants	92	92	35	26
Total	**1,056,533**	**9,084**	**430**	**226**

4. RESULTS AND FINDINGS

This section presents the process and impact findings from the PY4 evaluation of the Residential Lighting Program.

4.1 PROCESS FINDINGS

4.1.1 PROGRAM DESIGN AND IMPLEMENTATION

Based on interviews with program implementation staff, the Residential Lighting Program ran smoothly in PY4. Despite increasing program goals during the year—from an initial level of 3.2 million bulbs to 4.3 million bulbs—to compensate for performance in other programs, the program exceeded the goal for number of bulbs sold. Implementation staff credited excellent performance of and communication between the various implementers involved in the program as crucial to the success of the program.

Managers at retailers participating in the program, by and large, expressed a clear understanding of the program and excellent lines of communication with their field representatives. All managers felt that they had been kept up-to-date regarding changes to products and incentive levels. Two retailers suggested providing incentives for LED bulbs.

4.1.2 PROGRAM DATA

The program provided tracking data for both retailer and online sales. The data provided was complete and accurate. However, not all fields necessary to calculate program savings were tracked in the files we received. The tracking data provided the CFL wattage of each SKU sold and the gross and net kWh for each stock-keeping unit (SKU). The tracking database did not provide the base wattage used in the calculation of savings. The program provided the formula used to calculate savings in the program database. Using this formula, we could back out the base wattage from the data provided.

The base wattage equivalencies provided in ICC Order Plan 2 docket 10-0568 filed December 9, 2011, requires the use of lumen output for some CFL wattages, and the tracking did not contain lumens. For example, a 13-watt CFL that produces less than 800 lumens is equivalent to a 40-watt incandescent while a 13-watt CFL that produces greater than or equal to 800 lumens is equivalent to a 60-watt incandescent. For CFL wattages that required lumen output, we had to conduct online searches to ensure the appropriate base wattage was used in the program savings calculations.

The program has not traditionally tracked CFL type (standard or specialty) or specialty type (e.g., globe, reflector). This information is necessary to calculate savings using the installation rate method established by the 2012 Statewide TRM as well as the 2012 TRM formula for demand savings. Though the 2012 TRM does not go into effect until PY5, AIC chose to use the installation rate method beginning in PY3, and we used the 2012 TRM to calculate demand savings. The program was able to provide CFL type based on its updated tracking system in use for PY5, but we had to determine the type of specialty bulb using product descriptions and online searches.

4.1.3 PROGRAM MARKETING, OUTREACH, AND TRAINING

In PY4, the Residential Lighting Program was promoted in a variety of ways. While TV and other mass media marketing did not directly address the program, general AIC marketing did include images of compact fluorescent light bulbs and general energy efficiency messages. It is worth noting that one of the retailers we spoke with specifically mentioned AIC's general consumer marketing as being excellent.

Primary marketing of the program took place via point-of-purchase (POP) sales materials used at participating retailers. All retailers reported receiving and using POP sales materials from their field representative—most of them reported that they left it up year-round, or at the very least, whenever they had product covered by the program in stock. All retailers also reported that they would tend to place these materials and associated product in a prominent location in the store to more quickly draw customer attention. All of the retailers found the signage and materials useful—one retailer suggested that in the future, the program could provide large signage for placement outside the store.

APT also held 93 in-store events at top-selling retailers aimed at promoting the program, including representatives using "light bars" to demonstrate various bulbs, passing out educational materials, and direct customer contact. Five of the ten retailers we spoke to specifically remember an in-store event having taken place in their store. APT records indicate that these stores did have one or more events in PY4, and that those who did not remember an event were, except in one case, correct that no events were held at their stores. Those retailers reporting events also found them to have spurred a marked sales increase.

The field representatives associated with the program also typically train store staff on CFLs and how to best promote them, and provide a brief overview of how the program works from the consumer's standpoint. Nine of the ten retailers interviewed remembered at least an informal training. The managers and department heads interviewed indicated that typically only a single manager was trained and was expected to pass information along to other staff. One retailer did express a desire for more staff to be trained more formally. Retailers expressed a great deal of satisfaction with the field representatives when it came to providing program information and updates as needed.

4.1.4 ENERGY EFFICIENT LIGHTING AWARENESS AND USAGE

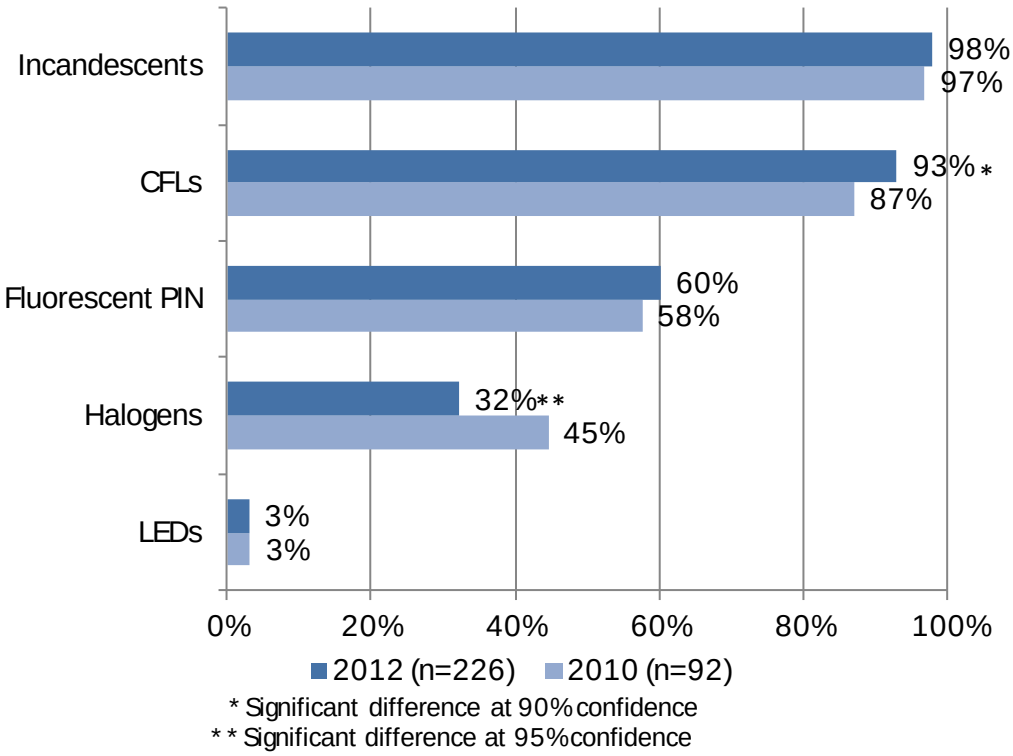
As part of recruiting for the on-site visits, we asked respondents questions about their awareness of CFL light bulbs. Most respondents (84%) reported having heard of CFLs. After we described the bulbs to those who were unaware of them, most recognized the bulbs, bringing total awareness to 97%.

The penetration rates from the in-home baseline study show that consumers are more than just aware of CFLs; they are actually using them (see Figure 1). Our in-home lighting audit found that 93% of homes had at least one CFL installed, which is a significant increase from the 87% of homes with CFLs in 2010.[8] Similar to 2010, we found a handful of customers (2%) who did not have any incandescents installed. Significantly fewer homes had halogen bulbs installed in 2012

[8] The confidence and precision of the 2012 estimate of CFL penetration is 90% +/-3%.

compared to 2010 (32% compared to 45%).[9] Though the 2012 in-home survey showed 51% of customers are aware[10] of LEDs, hardly any customers are using them. Only 3% of homes had an LED installed in 2012, which is the same as 2010. Most of these homes had a specialty or pin-based LED installed. Only two homes in 2012 had a new medium screw-based LED installed.

Figure 1. Lighting Penetration Rates



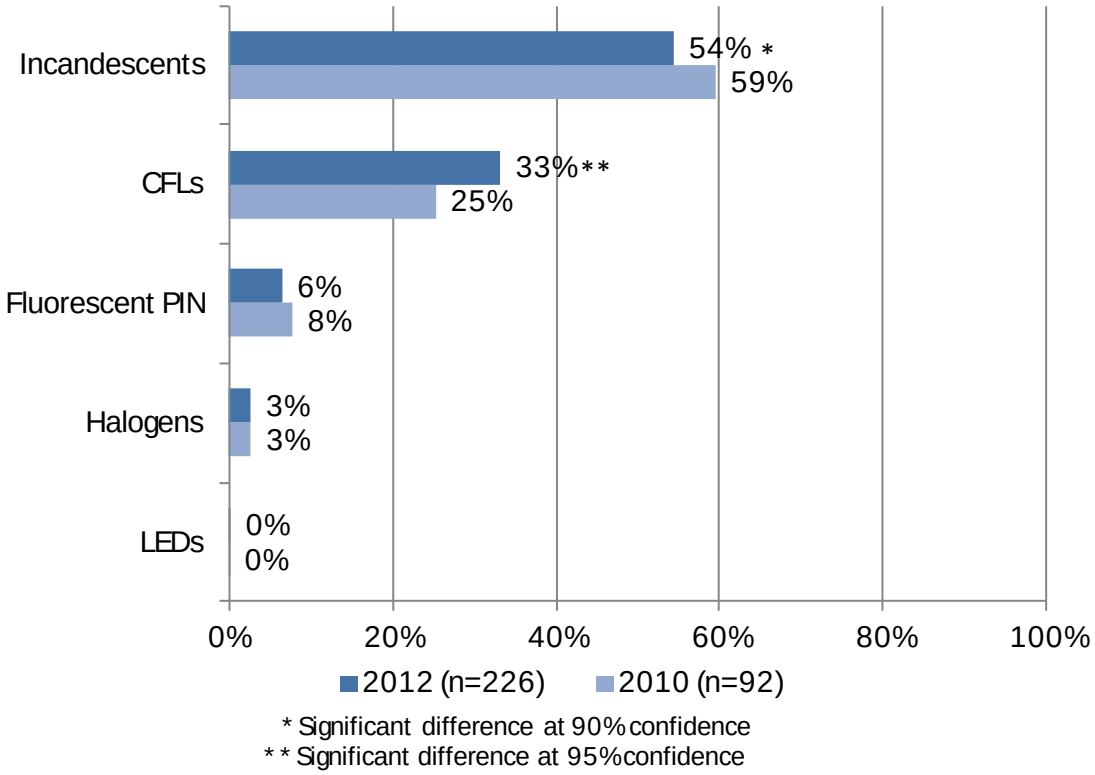
Though nearly all homes have at least one CFL installed, the majority of sockets in 2012 do not contain the most efficient bulb possible, either a CFL or LED. CFLs comprise 33% of bulbs installed in the average home in AIC service territory and LEDs are less than 1% (see Figure 2). Just over half are incandescents (54%) and less than one in ten are fluorescent pin (6%). The remainder are halogens (3%).

[9] Though the difference in halogen penetration is statistically significant, the difference may be due, in part, to differences in data collection. The 2012 data collection instrument collected the same information as the 2010 instrument. However, different teams conducted the audit and different training instructions may have been given. It is possible that the audit teams used different definitions of halogen bulbs, which is a technology that may be more difficult to identify.

[10] Respondents reporting "very familiar" or "somewhat familiar" on a 4 point scale ranging from "not at all familiar" to "very familiar."

While only one-third of sockets in the average home contain a CFL, CFL saturation is significantly higher compared to 2010 when only 25% of sockets contained a CFL.[11] As might be expected, incandescent saturation has declined over the past two years.

Figure 2. Lighting Saturation Rates

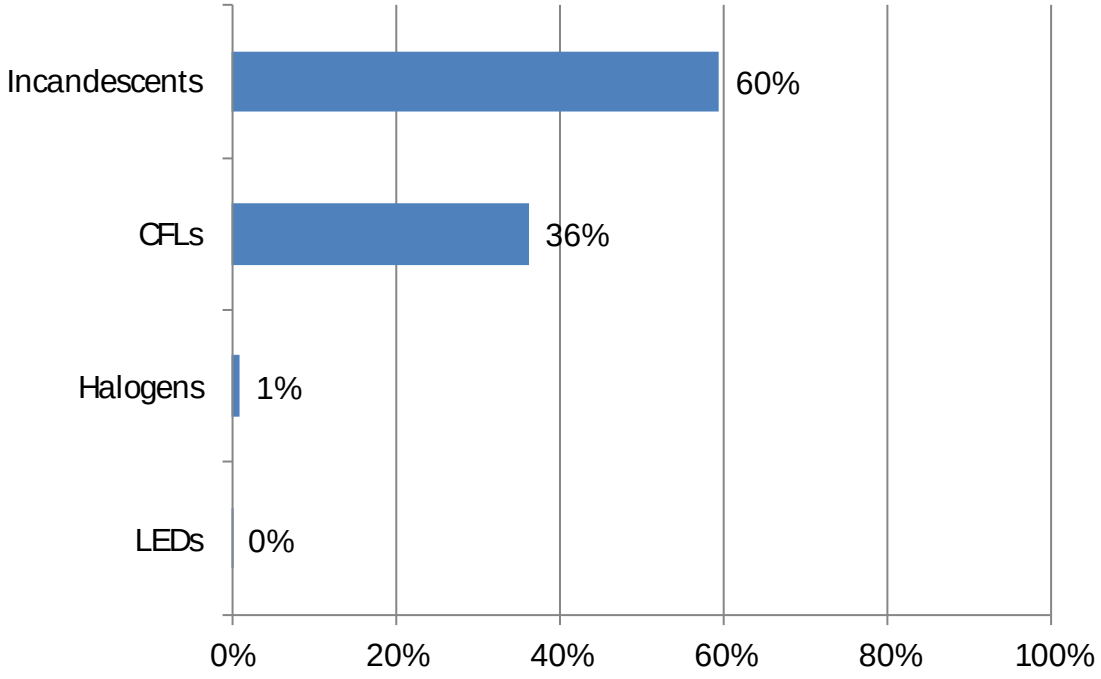


The Residential Lighting Program only incents screw-based CFLs and not pin-based so it would be more appropriate to examine socket saturation of screw-based bulbs only. The numbers are similar, but with slightly higher saturation rates for both incandescents (60%) and CFLs (36%) than when we examined all sockets (see Figure 3). Halogens are installed in only 1% of screw-based sockets and LEDs are in less than 1%.[12]

[11] **The confidence and precision of the 2012 estimate of CFL saturation is 90% +/-8%.**

[12] **Reviewer Note: At this time, we have some questions about the 2010 data that we are working to resolve with Cadmus in advance of presenting further comparisons of the 2012 and 2010 studies. The data presented in the remainder of this section only include results from the 2012 study.**

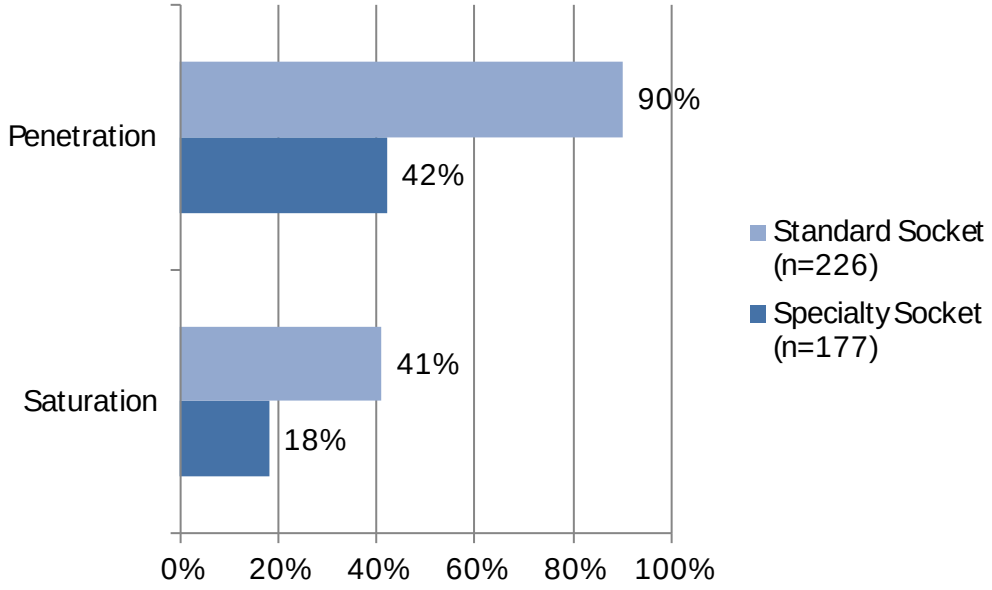
Figure 3. Socket Saturation Rates for Screw-Based Sockets



The program provides incentives for both standard and specialty CFLs. The in-home audits collected data on a socket-by-socket basis so that we can examine CFL saturation by socket type.[13] When we compare CFL penetration and saturation in standard versus specialty sockets, we see that standard CFLs are in more homes and more sockets than specialty CFLs. All homes have a socket that could take a standard CFL, and 90% of homes had at least one standard CFL installed and 41% of the standard sockets contained CFLs. Fewer homes (78%) had a socket that required a specialty bulb. Of these homes, 42% had a CFL installed and only 18% of the specialty sockets in these homes contained a CFL.

[13] Our definition of specialty CFLs matches that of the program. A specialty CFL is any CFL with a glass covering, or a spiral CFL that is dimmable or 3-way. A specialty socket was defined as one that had a specialty bulb of any technology installed (i.e. incandescent, CFL, etc.). A standard socket is one that had a standard bulb of any technology installed. Though the resident could, in the future, install a standard bulb in a specialty socket and vice versa, our analysis assumes the resident has chosen the most appropriate bulb for the socket and will continue to use the same type of bulb.

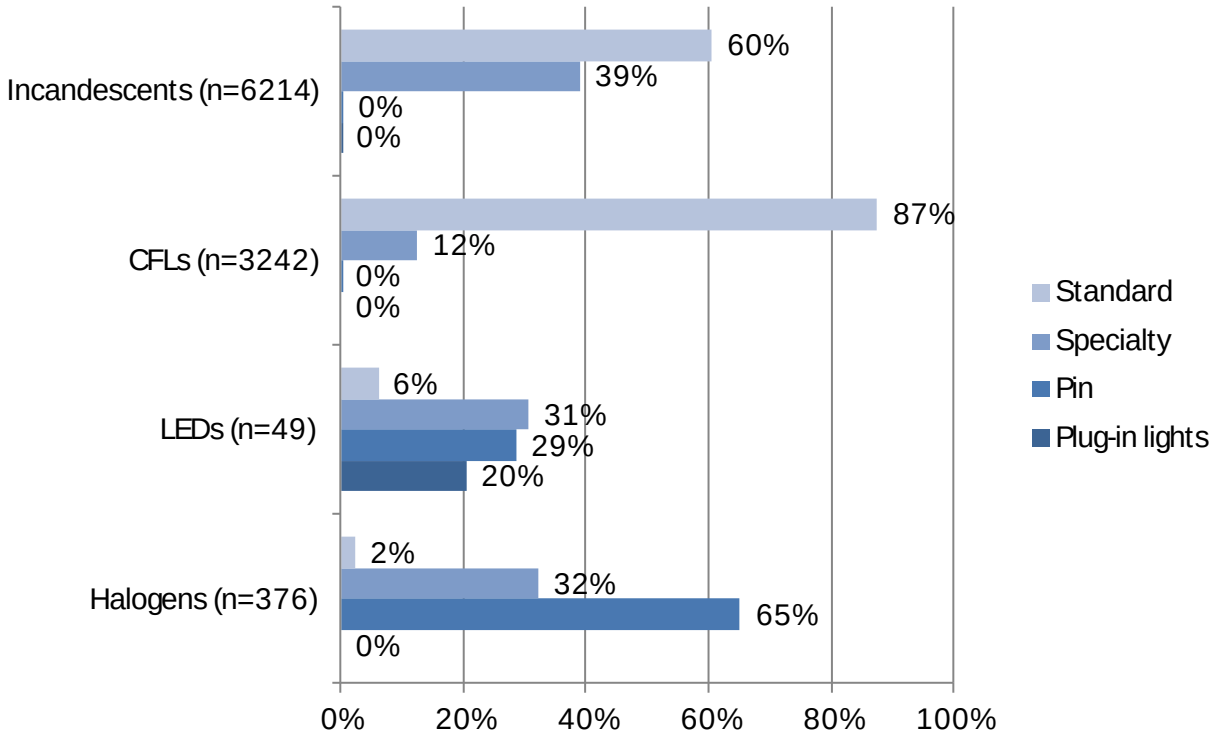
Figure 4. CFL Penetration and Saturation by Socket Type



Customers have been slower to adopt specialty CFLs and some of the new lighting technologies may be more attractive to them as they become more widespread. To understand the types of bulbs (i.e. incandescent, CFL, halogen, LEDs) consumers are using in different socket types (i.e. standard, specialty, pin), we calculated socket saturation by bulb type for each technology (see Figure 5). Of all incandescents installed, 60% are in standard screw-based sockets, 39% are in specialty screw-based sockets, and less than 1% are in pin-based sockets or are plug-in lighting. Residents are installing CFLs in the same types of sockets as incandescents, and are much more likely to be replacing standard bulbs than specialty bulbs: nearly nine in ten CFLs installed (87%) were standard, screw-based bulbs.

Until very recently, LEDs and halogens have not been available for standard screw-based sockets. As a result, most of these bulb types are installed in sockets that require a screw-based specialty bulb or a pin bulb (see Figure 5). Since halogens and LEDs are now available for standard and specialty screw-based sockets, these results provide a good baseline for these technologies as they are entering the market.

Figure 5. Socket Saturation for Different Technologies by Bulb Type



Finally, CFL usage is not associated with many demographic factors (see Table 7). Homeowners are more likely to use CFLs than renters but they do not have a greater proportion of their sockets filled with CFLs. We found little difference in CFL usage by income or education.

Table 7. CFL Penetration & Saturation by Demographic Characteristics

Demographic Characteristics	CFL Penetration	CFL Saturation
Home Ownership		
Own (n=153) (A)	97%[B]	33%
Rent (n=73) (B)	85%	33%
Household Income		
Less than $40,000 per year (n=103) (A)	91%[C]	39%
$40,000 to less than $75,000 per year (n=61) (B)	92%[C]	31%
$75,000 or more per year (n=46) (C)	100%	26%
Education		
High school graduate or less (n=63) (A)	92%	36%
Some college (n=76) (B)	92%	36%
College grad or more (n=86) (C)	95%	29%
Home Size		
Less than 1,500 sq. ft. (n=120) (A)	92%	33%
1,500 or more sq. ft. (n=53) (B)	98%	32%
Unknown home size (n=53) (C)	91%	35%
Total (n=226)	**93%**	**33%**

Note: Letters indicate the figure is significantly different from the other group at the 90% level.

4.1.5 The Future of Lighting Programs in AIC Territory

CFL penetration and saturation in AIC territory have increased since 2010—from 87% to 93% and 25% to 33%, respectively. Nearly every home has at least one CFL installed, and two of five standard sockets contain a CFL. Penetration and saturation of specialty CFLs still lags behind though. Given the relatively high level of CFL usage and the changes in the lighting market due to EISA and technological advances, it is important to examine the remaining market for an efficient lighting program and customer response to market changes.

Remaining Efficient Lighting Potential

The evaluation team estimated the number of standard and specialty screw-based sockets that currently have a less efficient bulb installed and thus could still be retrofitted with a more efficient option. Table 8 provides the inputs to the socket potential estimates. It is unrealistic to expect 100% socket saturation of efficient lighting, but 90% is more reasonable and the target of these estimates.

With 1,056,533 households in AIC territory, we estimate that nearly 19 million standard sockets

and more than 11 million specialty sockets do not have the most efficient lighting technology installed. While specialty CFLs have lower socket saturation, the number of potential sockets for standard CFLs is higher than it is for specialty CFLs due to the larger number of standard sockets in homes. The technology used to fill these sockets does not need to be CFLs; it could be LEDs as the technology continues to advance and prices fall. The results show that both standard and specialty bulbs should be considered for future program incentives.

Table 8. Remaining Socket Potential for Energy Efficient Lighting

Socket Type	% of Households with Socket	Average Number of Sockets per Household	Estimated Total Sockets in AIC Territory [a]	Per-Home CFL Saturation by Type [b]	Estimated Socket Potential [c]
Standard	100%	30.4	32,118,603	41%	15,583,946
Specialty	78%	12.9	13,629,276	18%	9,788,546

[a] Calculated by multiplying the total number of households in AIC territory (1,056,533) by the average number of sockets of the type.

[b] Based on the mean per-home saturation of CFLs in sockets that can take each bulb type (i.e., standard bulb saturation in standard sockets, specialty bulb saturation in specialty sockets).

[c] Based on a target of 90% socket saturation.

Future Lighting Purchase Behavior

While we were in customers' homes conducting the audit, we asked participants to fill out a paper survey about their current and future lighting purchases and factors that might influence those purchases. The survey provided respondents with pictures of different types of bulbs, their cost to purchase, cost to operate, and bulb life. The costs were regular retail prices so respondents were initially evaluating CFLs at non-program pricing.[14]

Fifty-five percent of respondents to the in-home survey reported that they were aware of the EISA legislation that phases out incandescent light bulbs over time. Awareness of EISA does not vary much across a variety of demographic factors, although homeowners are more aware (59%) than non-homeowners (48%).

After being asked about this legislation, respondents were asked what they planned to do the next time they need to purchase a 100-watt incandescent bulb, which was phased out in 2012. Over three quarters (78%) of respondents indicated that they planned to purchase a CFL bulb the next time they needed to purchase a 100-watt light bulb. Only 6% of respondents said they would use a higher or lower wattage incandescent, and only 2% of respondents said they would purchase the new EISA-compliant halogen bulbs. Ten percent of respondents do not use 100-watt bulbs so they are not impacted by the first round of EISA regulations.

Future purchase plans are correlated with current CFL usage. Those who plan to purchase a CFL bulb the next time they need a 100-watt incandescent have CFLs in 37% of their light sockets. Those who plan to purchase an incandescent or EISA-compliant halogen have CFLs in 17% of their sockets, which is significantly lower.

[14] The home survey results have a maximum confidence and precision of 90% +/- 5% for the entire sample. Analysis of subgroups will have lower precision.

Table 9. Likely Substitutes for 100W Bulbs

Response	% of Respondents (n=174)
CFL bulb	78%
Do not use 100W bulbs	10%
Lower wattage incandescent bulb	4%
Higher wattage incandescent bulb	2%
LED bulb	4%
Halogen bulb	2%

Respondents who said they would purchase something other than a CFL were asked if they would purchase one if the price were 50% less ($1.25 per bulb) than the bulb information first provided in the survey ($2.50 per bulb). Three-quarters of them said the price drop would cause them to purchase a CFL instead, bringing the total number to 87% who will purchase a CFL in place of a 100-watt incandescent.

Looking forward to next year's phase-out of 75-watt incandescent bulbs, we asked respondents if they planned to stock up on 75-watt incandescent bulbs before the phase-out went into effect. Three quarters (75%) of respondents indicated that they were unlikely[15] to do so. Only 9% said they were very likely to stock up on 75-watt incandescents.[16]

A survey question can only measure what a customer *might* do in the future in terms of stockpiling incandescents. Our in-home audit data provide evidence of what they *actually have* done. We collected data on the storage rates of 100-watt and 75-watt incandescents. There is little evidence that AIC customers are stockpiling EISA-regulated incandescents based on the lighting storage data. Slightly over half of homes (55%) had any incandescents in storage. When we examined the wattage, we found that 29% of homes had 100-watt incandescents in storage and 9% had 75-watts in storage. Of all incandescents in storage, 100-watts made up 11% while 75-watts made up 10%.[17] The market share of 100-watt and 75-wattt incandescents prior to EISA (2007) was 21% and 19% respectively.[18] Customers actually had fewer of these wattages in storage than were sold in the market.

[15] Respondents reporting "not at all likely" or "not very likely" on a 4 point scale ranging from "not at all likely" to "very likely".

[16] As part of the in-home audit, we recorded the number of 100-watt and 75-watt incandescents in storage.

[17] The largest number of 100-watts in storage was 10 in a home that had a total of 25 incandescents in storage. This home had only 4 75-watt incandescents in storage.

[18] Pamela Horner, *Lighting Manufacturer Perspectives on Residential Lighting Efficiency.* Prepared for Residential Lighting Efficiency Status & Policies, Integrated Energy Policy Report and Energy Efficiency Committees Joint Workshop. Sacramento, CA. California Energy Commission, June 19, 2007. Cited in: Seth Craigo-Snell, *The U.S. Replacement Lamp Market, 2010-2015, and the Impact of Federal Regulations on Energy Efficiency Lighting Programs*, APT White Paper, August 2010.

We also compared the storage rates of 100-watt and 75-watt incandescents of customers who were aware of EISA to those who were unaware. If a customer is unaware of EISA, the presence or number EISA-regulated incandescents in storage cannot be evidence of stockpiling. We found no significant difference in 100-watt and 75-watt storage rates by EISA awareness.

If EISA ends up being the main driver of CFL sales, program net savings will be adversely impacted. If customers are accurately self-reporting their purchase intentions, the program may need to reconsider incenting EISA-regulated bulbs. As we show in the next section, the majority of program sales are 60-watt equivalent CFLs so the impact on program savings will not be until PY7.

The survey also asked questions about future purchase of LEDs. Twenty-eight percent of respondents indicated that after having read the information about LEDs that was provided with the in-home survey, they were very likely to purchase an LED light bulb in the next year. Those respondents who indicated otherwise primarily cited cost (62%) as the major factor. Other factors cited were a preference for CFLs (6%), a lack of knowledge of LEDs (6%), poor quality of light (4%), and an inability to get LEDs that performed desired functions (e.g., dimming, specialty sockets). We asked all respondents what they would be willing to pay for an LED bulb. The median value for willingness-to-pay for an LED bulb was only $5, though more than a third of respondents (37%) did indicate that they were willing to pay $10 or more for an LED bulb.

4.2 IMPACT RESULTS

4.2.1 PROGRAM DATA VERIFICATION

We verified program participation by examining the product sales data for product eligibility and time of sale. Our review of the program tracking data found that all product sales were made during the eligible time period for eligible products. We also examined the program data to ensure that the appropriate base wattage was used to calculate program savings for each product. We were able to confirm the program used the appropriate base wattage for all SKUs except one. The program used 102 watts instead of 100 for one SKU.. The evaluation team used 100 watts as the base wattage for this SKU in its calculation of ex post gross savings. This SKU only accounted for 290 bulbs sold in PY4; thus, the difference between program tracked savings (ex ante gross) and evaluation calculated savings (ex post gross) is minimal.

4.2.2 PROGRAM PARTICIPATION

The program sold a total of 4,370,576 bulbs in PY4, exceeding both its original and revised bulb sales goals. The vast majority of bulbs sold (94%) were standard CFLs sold through the markdown program. The webstore sold a very small number of bulbs though it did sell the first LEDs discounted through the program.

Table 10. Bulb Sales by Type and Sales Channel

Bulb Type	Markdown	Webstore
Standard CFL	4,097,905	1,047
Specialty CFL	270,933	673
LEDs	0	18
Total	**4,368,838**	**1,738**

Sales primarily took place through big box retailers and do-it-yourself stores—97% of total bulb sales went through one of these store types (Table 11). Discount stores, a new program retailer type in PY4, make up much of the remaining sales through the program.

Table 11. Bulb Sales by Retailer Type

Retailer Type	Total Bulb Sales	% of Total Bulb Sales
Big Box	2,820,055	65%
DIY	1,412,077	32%
Discount	94,707	2%
Independent Hardware	31,139	1%
Grocery	10,350	< 1%
Online Store	1,738	< 1%
Drug Store	510	< 1%
Total	**4,370,576**	**100%**

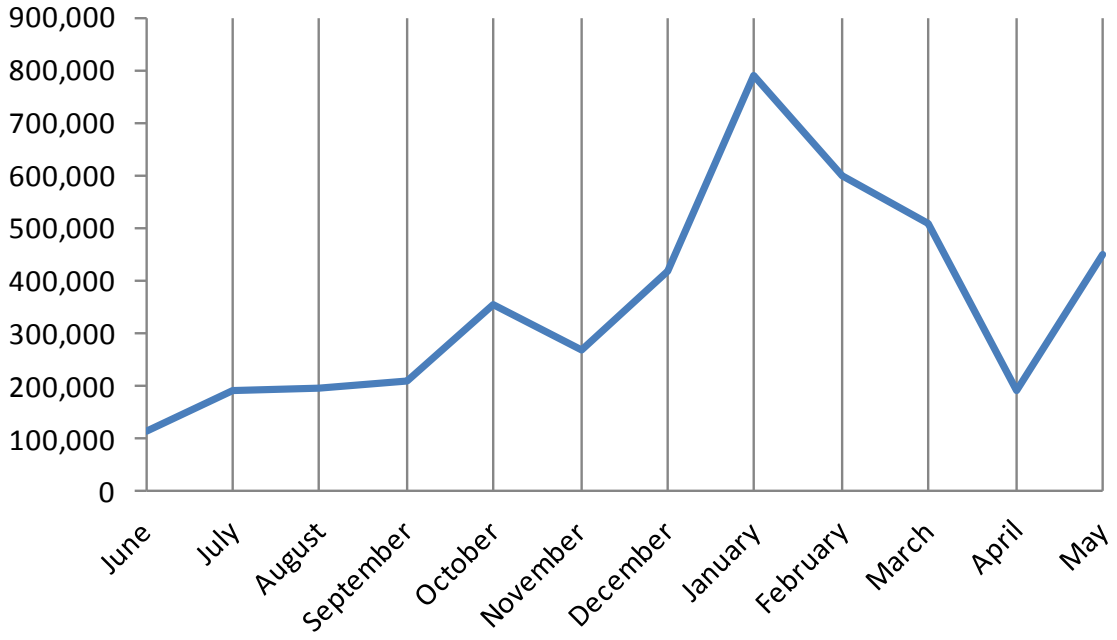
A large majority of CFLs sold (82%) were in the 12-18 watt range, which is equivalent to a 60-watt incandescent. EISA impacts 60-watt equivalent bulbs in 2014. The 2012 Statewide TRM adjusts baseline wattages one year after EISA takes effect for a given wattage. So the large majority of program sales will not be affected by EISA baseline adjustments until PY7. Starting in PY5, the baseline will drop for 100-watt equivalents, which made up 9% of PY4 sales. Next up are 75-watt equivalents in PY6, which made up only 5% of program sales. The impact of EISA on program savings should be relatively minor until PY7 (2014–2015).

Table 12. Program Bulb Sales by Wattage

CFL Wattage Range	Incandescent Equivalent	Number	Percent
7	25	1,099	<1 %
9	34	3,331	<1 %
9-11	40	194,652	4%
12-18	60	3,560,578	82%
18-28	75	199,929	5%
23-33	100	396,702	9%
30	125	208	<1 %
39-42	150	8,559	<1 %
55-65	200	3,780	<1 %

Bulb sales were steady for the first half of the program year. The program ran promotions that increased the incentive on some products. The promotional pricing had the intended effect of increasing sales beginning in October. Sales peaked in January then dropped back to earlier levels in April when prices returned to their earlier levels.

Figure 6. Program Bulb Sales by Month



4.2.3 GROSS IMPACTS

Table 13 outlines the ex ante and ex post gross savings from sales of efficient lighting made during PY4. The Residential Lighting Program's gross realization rate for PY4 sales is 1.18.

Table 13. PY4 Residential Lighting Sales Ex Ante and Ex Post Gross Savings

	Ex Ante Gross Impacts		Ex Post Gross Impacts	
	MW[a]	MWh	MW	MWh
Residential Lighting Program	–	183,587	22.,89	216,282
PY4 Sales Gross Realization Rate 1.18				

[a] Conservation Services Group (CSG), the implementer, is not required to track demand savings.

Note: Realization Rate = Ex Post Value / Ex Ante Value.

Ex post gross savings are higher than ex ante gross savings due to methodological differences in how the program and our evaluation calculates gross savings:

- The program savings method assumes that 100% of program sales are installed in residential spaces. Our evaluation assumes that 3% of bulbs are installed in commercial spaces that have greater hours of use.
- The program savings method assumes residential bulbs are used for 854 hours a year. The evaluation applied the 2012 Statewide TRM hours of use assumptions, which specify 938 hours for residential spaces and 3,198 for miscellaneous commercial spaces.

Table 14 provides the calculation details for ex post gross savings from sales of efficient lighting in PY4 by bulb type. The per unit values and total gross energy savings would apply if 100% of bulbs sold in PY4 were installed in PY4.

Table 14. PY4 Residential Lighting Sales Ex Post Gross Impacts

Measure	Verified Participation	Per Unit Energy Impact	Total PY4 Sales Gross Energy (MWh)	Per Unit Demand Impact	Total PY4 Sales Gross Demand (MW)
Standard CFLs	4,098,952	49.3	202,466	.0052	21.23
Specialty CFLs	271,606	50.86	13,815	.0061	1.66
LEDs	18	45.02	0.81	.0051	0.00009
Total	**4,370,576**	**49.49**	**216,382**	**.0052**	**22.89**

[a] Total gross impacts are based on the application of deemed fixed savings values to verified participation numbers.

Because some bulbs sold are put in storage for later installation, an installation adjustment factor is required to calculate gross savings achieved in PY4. We used the 2012 Statewide TRM method that banks savings from PY4 sales for application in future years.

Table 15 provides the savings values from sales made in PY4 that are achieved in PY4 and the savings that will be achieved in PY5 and PY6. As discussed earlier, the 2012 TRM method assumes that 98% of CFLs will be installed within three years and 2% of bulbs will never be installed. Therefore, if one were to sum the yearly savings across the three years in

Table 15, the total will not equal the total PY4 gross savings in Table 14.

In addition, the 2012 TRM requires an adjustment in baseline savings for EISA-impacted bulbs. Beginning in PY5, the baseline for 100-watt equivalent CFLs drops to 72 watts, and in PY6 the baseline wattage for 75-watt equivalent CFLs drops to 53 watts. We have made the appropriate adjustments to the banked savings for 100-watt equivalent CFLs sold in PY4 that will be installed in PY5 and PY6. We have made similar adjustments for 75-watt equivalent CFLs sold in PY4 that will be installed in PY6.[19]

[19] Some specialty reflector bulbs also fall under EISA regulations. The 2012 TRM does not require a baseline adjustment for these specialty bulbs. For this evaluation we followed the 2012 TRM guidelines and did not adjust the baseline wattages for these specialty bulbs. If the TRM is updated in 2013 to reflect EISA's impact on specialty reflectors, we will need to adjust PY5 and PY6 banked savings for a handful specialty bulb SKUs sold in PY4.

Table 15. PY4 Residential Lighting Sales Yearly Gross Impacts

Measure	Energy (MWh)			Demand (MW)		
	PY4	PY5	PY6	PY4	PY5	PY6
Standard CFLs	140,714	29,616	24,654	14.75	3.115	2.59
Specialty CFLs	10,983	1,382	1,174	1.32	0.17	0.14
LEDs	0.81	0	0	0.00009	0	0
Total	**151,698**	**30,998**	**25,828**	**16.07**	**3.27**	**2.73**

AIC chose to begin the application of the 2012 Statewide TRM installation rate method in PY3. Therefore, PY4 achieved ex post gross savings in Table 16 is the result of sales made in PY3 but installed in PY4 and sales made in PY4 and installed in PY4. Ex ante gross savings incorporates the program tracking installation rate of 93%.

Table 16. PY4 Residential Lighting Program Achieved Gross Impacts

Sales Year – Install Year	Ex Ante Gross Energy (MWh)	Ex Post Gross Energy (MWh)	Ex Post Gross Demand(MW)
PY3 – Year 2	–	23,889	2.44
PY4 – Year 1	170,736	151,698	16.07
Total PY4 Gross Savings	**170,736**	**175,587**	**18.51**
PY4 Achieved Gross Realization Rate		*1.03*	

[a] CSG is not required to track demand savings.

Note: Realization Rate = Ex Post Value / Ex Ante Value.

The Residential Lighting Program's realization rate for PY4 achieved gross energy savings is 1.03. Ex post savings are different from ex ante savings for several methodological reasons. As noted earlier, ex post gross savings are higher than ex ante gross savings because:

- The program savings method assumes that 100% of program sales are installed in residential spaces. Our evaluation assumes that 3% of bulbs are installed in commercial spaces that have greater hours of use.
- The program savings method assumes residential bulbs are used for 854 hours a year. The evaluation applied the 2012 Statewide TRM hours of use assumptions, which specify 938 hours for residential spaces and 3,198 for miscellaneous commercial spaces.

Both ex post gross and ex post ante savings decrease with the application of an installation rate. The drop in ex post gross savings is greater than that for ex ante achieved savings because:

- The evaluation applied the 2012 Statewide TRM banked savings method whereas the program tracking used a single installation rate of 93%.

4.2.4 NET IMPACTS

We applied the most recent evaluation estimated NTGR of .83 to calculate PY4 ex post net savings. As discussed earlier, the NTGR was estimated in PY2 and used in the evaluation of both PY2 and PY3 sales. Program-tracked net savings used the same NTGR.

Table 17. PY4 Residential Lighting Program Net Energy Impacts

	Ex Ante Net Impacts		Ex Post Net Impacts	
	MW[a]	MWh	MW	MWh
Residential Lighting Program	–	141,892	15.36	145,737
			Net Realization Rate	*1.03*

[a] CSG is not required to track demand savings.

Note: Realization Rate = Ex Post Value / Ex Ante Value.

The Residential Lighting Program's realization rate for net energy savings is 1.03. The difference between ex ante and ex post net savings is due to the reasons cited above in the discussion of gross savings.

4.3 INPUTS FOR FUTURE PROGRAM PLANNING

The in-home lighting study is a task that spans PY4 and PY5. The data collection began in late PY4 and was completed in early PY5. For PY5, we will conduct additional analyses of the lighting study that will provide an updated CFL installation rate, program spillover, CFL usage by room type, and additional comparisons of the 2010 and 2012 study results. We will provide AIC with a memo outlining these results in late 2012.

A. APPENDIX: DATA COLLECTION INSTRUMENTS

Participating Retailers Interview Guide

Retailer Interview Guide FINAL 090512.

In Home Audit Recruiter, Auditor Instrument, and Home Owner Survey

AIU Lighting Study Recruiter FINAL 0515

AIU Home Study Auditor Instrument Fl

AIU Home Study Home Owner Survey

B. APPENDIX – IMPLEMENTATION MODEL

The evaluation team created an implementation model for the Residential Lighting Program evaluated in PY4. An implementation model is a graphic presentation of the intervention—what occurs and who undertakes the functional activities of the program. The model is displayed using a multi-level Visio document that has various functions in its rows, and key stakeholders and populations in the columns. We determined the functions, stakeholders, and processes through a review of the available program documentation and further refined them based on interviews with program staff. This model does not attempt to assess the effects of the program.

The model is organized by function and the stakeholders involved.

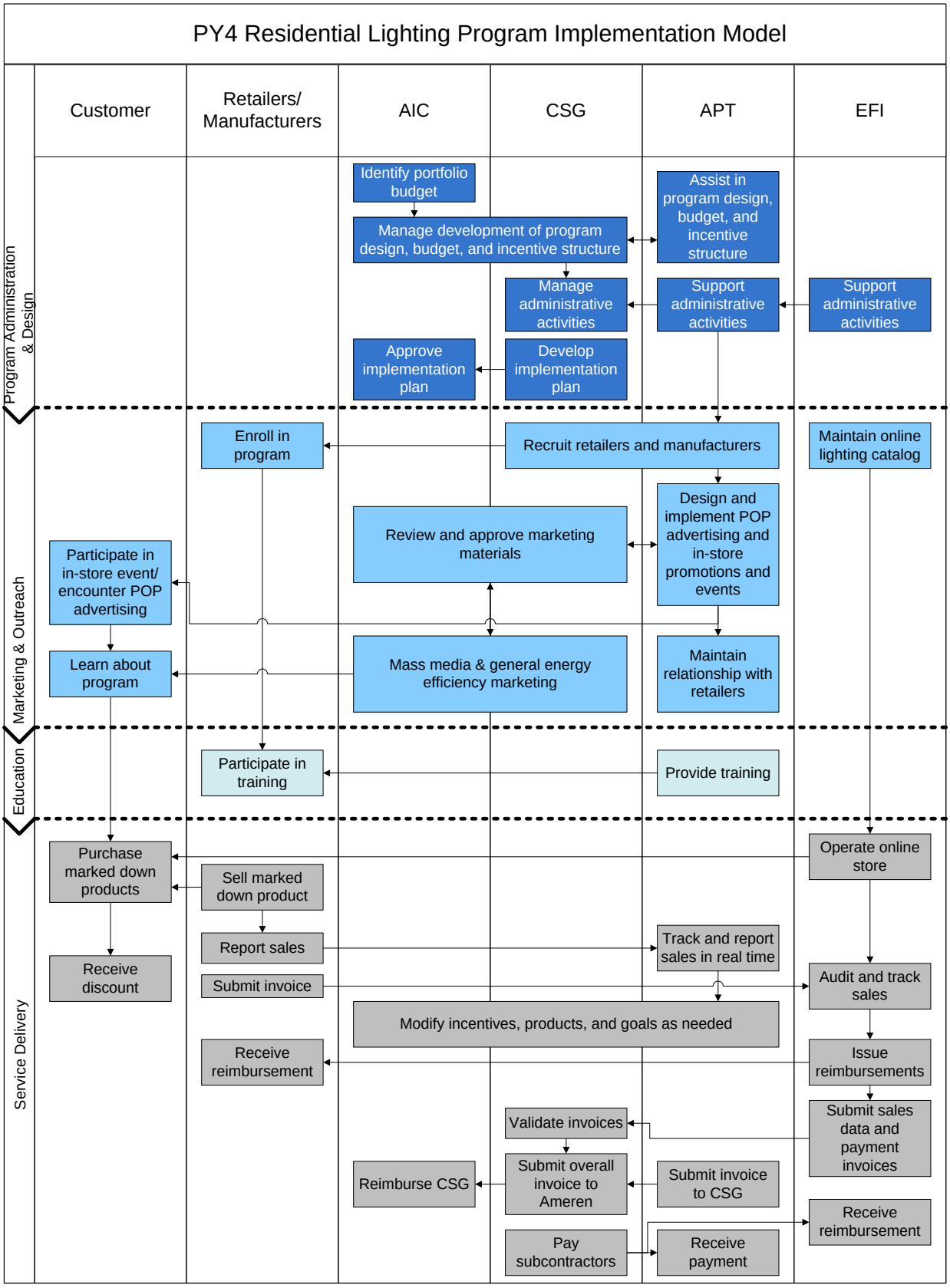
- **Functions** represent the discrete functions inherent to the program. These functions include program administration and design, marketing and outreach, education, service delivery, and evaluation. Service delivery encompasses activities that are directed towards intervention recipients and, for this model, is a catchall for any activity not included in the other functions.
- **Stakeholders** include the various providers who are involved in program delivery or receive program services. Stakeholders include AIC customers, retailers and manufacturers of efficient lighting, Conservation Services Group (CSG), Applied Proactive Technologies (APT), Energy Federation, Inc. (EFI) and AIC.

For the Residential Lighting Program, key program functions include:

- **Program Administration and Design**: CSG and APT work together to establish the program design, budget, and incentive structure, while AIC reviews and accepts proposed program features.
- **Marketing & Outreach**: CSG and APT work together to recruit retailers to participate in the program. APT is the primary provider of marketing and outreach to customers via point of purchase marketing materials. AIC and CSG approve these materials. AIC and CSG also conduct general energy efficiency marketing to AIC customers. EFI maintains an online lighting store where customers can purchase discounted lighting. However, the site is not actively marketed to customers. Customers may come upon the site while visiting the AIC website.
- **Education**: APT is the main driver and implementer of the program's education efforts—training retailers participating in program delivery.
- **Service Delivery (Customer Facing):** For the customer, the service delivery process is very simple—they purchase a marked down product and receive savings at the time of sale, with no further action required.
- **Service Delivery (Rebate Processing)**: Retailers and manufacturers delivering the product to customers track sales and submit data to both APT and EFI. APT receives raw sales data, used to track the program progress in "real time." EFI receives invoices that they review to ensure they are consistent with program requirements and are correct, and then rebate retailers for the markdowns. EFI then invoices CSG, which reviews sales figures and invoices AIC for the final reimbursement.
- **Service Delivery (QA/QC):** Both EFI and CSG review invoices and sales figures as needed

before the final invoice is delivered to AIC. All program parties are in close contact as needed to address issues.

Below we provide the Residential Lighting Program implementation model.


PY4 Residential Lighting Program Implementation Model
Customer
Retailers/ Manufacturers
AIC
CSG
APT
EFI
Program Administration & Design
Marketing & Outreach
Education
Service Delivery
Identify portfolio budget
Assist in program design, budget, and incentive structure
Manage development of program design, budget, and incentive structure
Manage administrative activities
Support administrative activities
Support administrative activities
Approve implementation plan
Develop implementation plan
Enroll in program
Recruit retailers and manufacturers
Maintain online lighting catalog
Design and implement POP advertising and in-store promotions and events
Review and approve marketing materials
Participate in in-store event/ encounter POP advertising
Learn about program
Mass media & general energy efficiency marketing
Maintain relationship with retailers
Participate in training
Provide training
Purchase marked down products
Sell marked down product
Operate online store
Report sales
Track and report sales in real time
Receive discount
Submit invoice
Audit and track sales
Modify incentives, products, and goals as needed
Receive reimbursement
Issue reimbursements
Validate invoices
Submit sales data and payment invoices
Reimburse CSG
Submit overall invoice to Ameren
Submit invoice to CSG
Receive reimbursement
Pay subcontractors
Receive payment