CADMUS

Lighting Impact and Process Evaluation

PROGRAM YEAR 2018

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Prepared for:

Ameren Missouri

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Executive Summary

Ameren Missouri engaged Cadmus to perform annual process and impact evaluations of its Lighting program for a three-year period, from 2016 through 2018. This annual report, prepared by Cadmus and its partner Apex Analytics (the Cadmus team), includes impact and process evaluation findings for Program Year 2018 (PY18). PY18 covered the period from March 1, 2018, through February 28, 2019—the final year of Cycle 2.

Program Description

The Lighting program increased sales of energy-efficient lighting products by offering point-of-sale (POS) discounts on ENERGY STAR®-certified LEDs at major chain retailers and through an online website. ICF served as the program implementer, for the third consecutive year. In addition to reducing prices, ICF worked with participating retailers to place Ameren Missouri signage and marketing materials near discounted products, secure high-visibility placement of discounted products when possible, and host consumer education and retailer staff trainings throughout the year.

Key Impact Evaluation Findings

The following sections describe the Cadmus team's key findings for the PY18 evaluation period.

Program Data Adjustments

The Cadmus team reviewed tracking data against the ENERGY STAR Certified Products List and manufacturer published specifications. The Cadmus team identified errors in the wattage or lumens for about 20% of program bulbs reported. Most of the errors were minor discrepancies. The Cadmus team used corrected values to calculate evaluation inputs.

Gross Impacts

Table 1 summarizes PY18 participation, ex post gross per-unit savings, realization and installation rates, and ex post total gross savings. All realization rates were below 90%, with the exception of the 10.5-watt Downlight and the 12-watt Special Function categories. These categories experienced a significant change in bulb mix that led to changes in the baseline and efficient wattages and resulted in higher than expected per unit savings.

Table 1. PY18 Gross Impact Results Summary

Measure	PY18 Total Participation[1]	Per-Unit Ex Post Savings (kWh/yr)	Realization Rate[2]	Total Ex Post Gross Savings (MWh/yr)	Total Ex Post Gross Demand Reduction (kW/yr)
General Purpose					
10W General Purpose	52,301	28.7	84%	1,504	226
15W General Purpose	25,486	37.8	85%	964	145
20W General Purpose	31,323	52.5	87%	1,644	247
Decorative					
4W Candelabra	19,353	32.4	85%	626	94
8W Globe	11,012	33.5	88%	369	56
Special Function (EISA Exempt)					
12W Special Function	647	71.0	99%	46	7
Reflector					
10.5W Downlight	31,850	39.1	103%	1,246	187
15W Flood (PAR 30)	41,882	47.4	88%	1,984	299
Total[3]	**213,854**			**8,383**	**1,261**

[1] Participation is based on the date of sale rather than the date the discount was invoiced to the program. PY18 total participation includes only sales that occurred prior to March 1, 2019, although some of these sale discounts were invoiced to the program after that date.

[2] Realization rates compare evaluated per-unit gross savings to the estimated gross savings in the 2018 TRM.

[3] Gross savings may not sum to total due to rounding.

Net Savings

As shown in Table 2, the Lighting program achieved net savings of 6,094 MWh, and 928 kW/year in both PY18 and 2023, including nonparticipant spillover (NPSO). The program savings-weighted net-to-gross (NTG) ratio was 72%, excluding NPSO savings. The NTG ratio does not include NPSO because NPSO is added separately to account for its different load profile. The NTG ratio was calculated using a comparison sales model, free ridership was calculated using demand elasticity model, and like spillover is the difference between the two.

Table 2. PY18 Net Impact Results Summary

Measure Group	*Ex Post* Gross Savings (MWh/yr)	Free Ridership	Like Spillover	NTG	Net Savings (MWh/yr)	Net Demand Reduction – First Year (kW/yr)	Net Demand Reduction – Year 2023 (kW/yr)
10W General Purpose	1,504	12%	25%	113%	1,700	256	256
15W General Purpose	964	42%	25%	83%	797	120	120
20W General Purpose	1,644	47%	25%	77%	1,272	191	191
4W Candelabra	626	61%	25%	64%	400	60	60
8W Globe	369	53%	25%	71%	263	40	40
12W Special Function	46	68%	25%	67%	31	5	5
10.5W Downlight	1,246	68%	25%	57%	709	107	107
15W Flood (PAR 30)	1,984	79%	25%	45%	896	135	135
NPSO					27	15	15
Total[1]	**8,383**	**52%**	**25%**	**72%**	**6,094**	**928**	**928**

[1] Totals may not sum to total due to rounding.

Progress toward Goals

As shown in Table 3, the PY18 program achieved 61% of its PY18 net energy savings target and 62% of its PY18 net demand savings target.[1] Appendix A presents the coincidence factors used to calculate the program's demand savings. The Lighting program was deliberately scaled back in PY18, due to higher participation and savings than forecast in previous years.

Table 3. PY18 Lighting Savings Comparisons

Metric	MPSC-Approved Target	*Ex Post* Gross Savings Determined by EM&V[1]	*Ex Post* Net Savings Determined by EM&V[2]	Percent of Goal Achieved[3]
Energy (MWh)	9,943	8,383	6,094	61%
Demand - First Year (kW)	N/A	1,261	928	63%
Demand - Year 2023 (kW)[4]	1,485	1,261	928	63%

[1] MWh calculated by multiplying verified program participation by the Cadmus team's evaluated per-unit savings values; kW calculated by applying coincident factors provided in Appendix A.

[2] Calculated by multiplying the Cadmus team's evaluated gross savings and evaluated NTG ratio and adding the appropriate program-level allocation of NPSO savings.

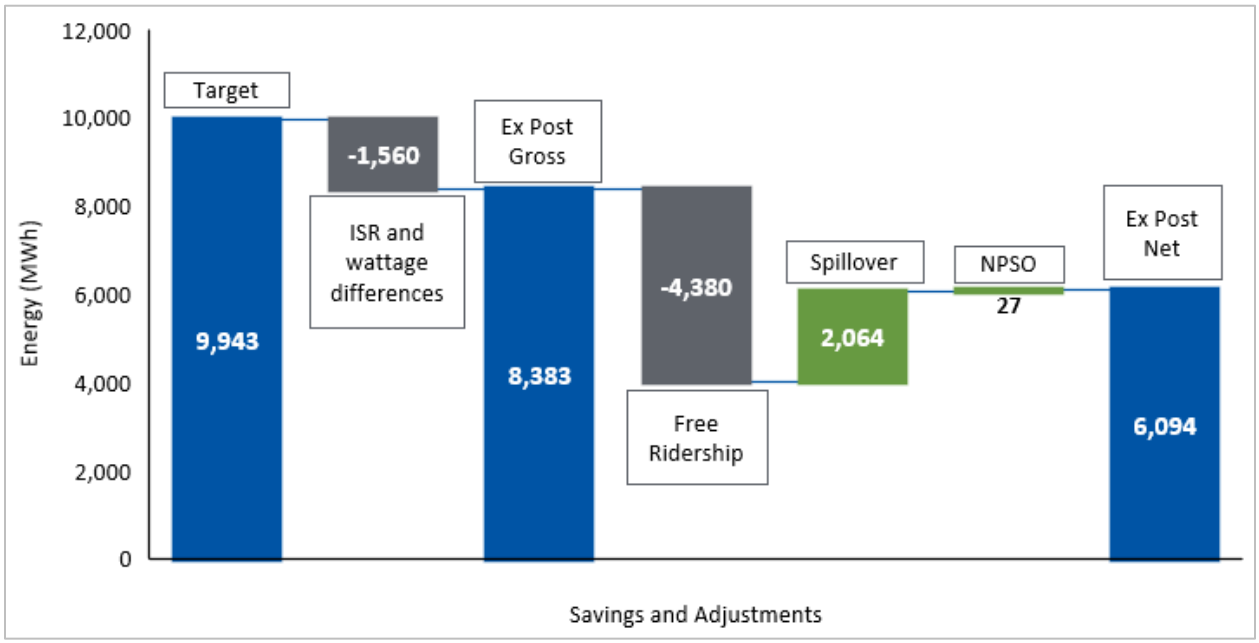
[3] Compares MPSC Approved Target and Ex Post Net Savings Determined by EM&V.

[4] The Non-Unanimous Stipulation and Agreement in File No. EO-2015-0055 states: "Only measures that are expected to deliver energy savings in 2023 and beyond are counted towards the demand goal in the EO included in Appendix A." Cadmus referenced the Ameren Missouri TRM for secondary data on measure EUL in order to assess whether or not measures are sufficiently long-lived to achieve 2023-persistent kW savings.

[1] Ameren Missouri 2016–2018 Energy Efficiency Plan. *Missouri Public Service Commission file number EO-2015-0055, Appendix G.* Available online: https://projects.cadmusgroup.com/sites/6320-P02/phase01/Shared%20Documents/Management/PY17%20Proposed%20Stipulated%20and%20Agreement%20Files/Appendix%20G%20-%20Measure_List_Incentives%20Range_Design.pdf?Web=1

Figure 1 illustrates the program's energy impacts—from the target to the ex post net savings. The blue bars represent total savings (targets, ex ante, etc.), gray bars represent factors that decreased savings, and the green bars represent factors that increased savings.

Figure 1. Waterfall Chart of PY18 Lighting Program Energy Savings



CSR Impact Evaluation Requirements

According to the Missouri Code of State Regulations (CSR), demand-side programs that operate as part of a utility's preferred resource plan are subject to ongoing process and impact evaluations that meet certain criteria. Specifically, the CSR requires that impact evaluations of demand-side programs satisfy the requirements listed in Table 4. The table includes data that the Cadmus team used to satisfy these impact CSR evaluation requirements for the Lighting program. (Table 7 summarizes the process CSR requirements.)

Table 4. Summary Responses to CSR Impact Evaluation Requirements

CSR Requirement[1]	Method Used	Description of Program Method
Approach: The evaluation must use one or both of the following comparisons to determine the program impact:		
Comparisons of pre-adoption and post-adoption loads of program participants, corrected for the effects of weather and other intertemporal differences	x	The program compares the pre-adoption load based on an assumed baseline technology with the post-adoption load based on program technology, and estimates waste-heat impact (based on equipment simulation).
Comparisons between loads for program participants and an appropriate control group over the same period		
Data: The evaluation must use one or more of the following types of data to assess program impact:		
Monthly billing data		
Hourly load data		
Load research data		
End-use load metered data		
Building and equipment simulation models	x	The program uses industry-standard algorithms to conduct an engineering analysis of impacts by measure category.
Survey responses	x	Used PY17 survey data from retailer partners to assess program influence; used PY16 survey data from residential customers on purchasing practices and date of purchase of efficient technology to determine leakage and residential use rates; used general population household survey data from PY17 to determine saturation of LEDs by room (to inform HOU) and installation rates.
Audit and survey data on equipment type/size efficiency	x	Evaluation team conducted an audit of all lighting in a sample of homes in the program area (2017).
Audit and survey data on household or business characteristics	x	Evaluation team collected household characteristics from homes participating in lighting audit (2017)
Audit and survey data on energy-related building characteristics		

[1] State of Missouri. "Administrative Rules: Missouri Code of State Regulations." Missouri 4 CSR 240-22.070(8)(B). Revised May 2011. Available online: https://www.sos.mo.gov/cmsimages/adrules/csr/current/4csr/4c240-22.pdf

Key Process Evaluation Findings

The Cadmus team conducted interviews with the Ameren Missouri program manager, the program implementer, and the Ameren Missouri Marketing Manager to inform the PY18 process evaluation. In addition, the Cadmus team analyzed market and demographic data to characterize the Ameren Missouri territory's lighting market relative to other jurisdictions. Key findings from this research follow.

Ameren Missouri reduced the program budget and sales targets considerably in 2018 relative to previous years, due to exceeding targets in PY16 and PY17. While the program continued to offer the

same bulb types through the same retail channels as in previous years, the proportion of participation across measure categories and across retail channels changed significantly. Table 5 shows that participation in the 10-watt General Purpose measure category decreased substantially in PY18 relative to PY17, while the percentage of 15-watt and 20-watt General Purpose bulbs and 10.5-watt Downlights (small and medium sized reflectors) increased. The reduction in 10W LED bulbs was primarily due to a reduction in sales of this bulb type through big box (large DIY, mass merchandise, and club store) channels. Big box sales of 10W LEDs made up just 13% of sales in this category in PY18, and most of these big box sales actually occurred at the end of PY17. These bulbs are being counted in PY18 because they were invoiced after PY17 accounts were closed.

Table 5. Distribution of Program Sales by Measure Category, PY18 and PY17

Measure	PY18 Percent of Total Sales	*PY17 Percent of Total Sales*
10W General Purpose	24%	*57%*
15W General Purpose	12%	*1%*
20W General Purpose	15%	*7%*
4W Candelabra	9%	*10%*
8W Globe	5%	*5%*
12W Special Function	0%	*0%*
10.5W Downlight	15%	*1%*
15W Flood (PAR 30)	20%	*18%*
Total	**100%**	***100%***

In addition, ICF continued their efforts to direct bulbs toward segments of the market with lower LED saturation by working through stores targeting lower income shoppers. As a result, as shown in Table 6, participation in small chain retailers grew in PY18 relative to PY17, while sales in mass merchandise and club retailers decreased.

Table 6. Distribution of Program Sales by Retail Channel, PY18 and PY17

Retail Channel	PY18 Percent of Total Sales	*PY17 Percent of Total Sales*
Large DIY	31%	*33%*
Large Mass Merchandise	16%	*27%*
Large Club	16%	*21%*
Small Chain	37%	*19%*
Online	1%	*1%*
Total[1]	**100%**	***100%***

[1]May not sum due to rounding

ICF was able to achieve this shift, in part, by working with Ameren Missouri to lower the per-bulb price floor from $2.00 to $1.00 for select models sold through discount retailers. This change was implemented to meet retailer price specifications so that more products could be offered through the

discount retailers such as dollar stores. The change also reflected the ongoing decrease in LED prices since the $2.00 bulb price floor was established at the beginning of MEEIA Cycle 2, in 2016.

CSR Process Evaluation Requirements

As previously discussed, the Missouri CSR requires that demand-side programs, operating as part of a utility's preferred resource plan, are subject to ongoing process and impact evaluations that meet certain criteria. Table 7 lists the process evaluation criteria (key questions) and the evaluation findings for each.

Table 7. Summary Responses to CSR Process Evaluation Requirements

CSR Process Evaluation Requirement Number[1]	CSR Requirement Description	Summary Response
1	What are the primary market imperfections common to the target market segment?	LEDs continue to gain market share, but past survey results show that not all market segments are equally familiar with the technology; low-income, renter and multifamily populations show much lower saturation rates. LEDs also continue to be more expensive than other bulb types, especially for specialty bulb types, although prices have dropped substantially over the past three years.
2	Is the target market segment appropriately defined, or should it be further subdivided or merged with other market segments?	Yes. The program targets the entire residential lighting market, but, in PY18, has concentrated on stocking and incentives for general purpose bulbs in discount retailers. The program continues to work with mainstream big box retailers in addition to specialty retailers to stock and discount specialty bulbs.
3	Does the mix of end-use measures included in the program appropriately reflect the diversity of end-use energy service needs and existing end-use technologies within the target market segment?	Yes. The program continues to offer a diverse array of bulb models that meet most household lighting needs. The program has included an increasing number of reflector bulb types in recent years since saturation is lower for these bulbs, and savings opportunities are greater.
4	Are the communication channels and delivery mechanisms appropriate for the target market segment?	Yes. The program uses in-store and online marketing and makes discounts available in a variety of retail channels, including Do-It-Yourself (DIY), mass merchandise, dollar stores, community retailers (such as Goodwill), grocery stores, and other retailers.
5	What can be done to more effectively overcome the identified market imperfections and to increase the rate of customer acceptance and implementation of each end-use measure included in the program?	Residential survey results from PY17 indicated that income and homeownership served as the strongest predictors of whether a customer uses LEDs. These factors strongly point to price and availability by retailer channel continuing as the primary barriers to LED uptake.

[1] State of Missouri. "Administrative Rules: Missouri Code of State Regulations." Missouri 4 CSR 240-22.070(8)(A) requirements 1 through 5. Revised May 2011. Available online: https://www.sos.mo.gov/cmsimages/adrules/csr/current/4csr/4c240-22.pdf

Key Conclusions and Recommendations

Though operating at a much reduced scale relative to previous years, the Lighting program performed well. The Cadmus team offers the following conclusions and recommendations.

Conclusion 1. Ameren Missouri's efforts to increase delivery through small chain retailers, including substantial discounts on general purpose bulbs sold through discount stores, significantly reduced overall free ridership absent what it would have been without this targeting. Aggressive discounts, averaging 73%, on the 10-watt LED bulbs sold in small chain retailers (86% of all 10-watt LEDs sold, and 21% of program sales overall) led to a 12% free ridership rate for this measure category. For all other measure categories, the majority of bulbs were sold through big box retailers, and the average markdowns ranged from 20% to 55%. The average freeridership for these categories was 61%.

Recommendation 1. The program should continue to grow the share of program sales in small chain retailers, and to offer substantial markdowns through those channels, in order to minimize free ridership and penetrate hard to reach market segments. As the market for LEDs matures, non-program LEDs will make up a larger share of products available in big box retailers. One recent study in Wisconsin found that a nonparticipating big box Do-It-Yourself (DIY) chain had roughly the same number of LED models, at similar prices, as a participating DIY chain.[2] Market characterization data for Missouri showed that 50% of state-wide lighting sales are LEDs which correlates with the higher overall free ridership levels relative to last year. However, the PY17 home inventory study showed that LED penetration (and therefore saturation) was much lower among multifamily and renter populations, which are often correlated with low income areas. The program is likely to have lower free ridership in retail channels with fewer LEDs competing with program LEDs and in channels that target households with lower LED saturation, such as the small chain retailers.

Conclusion 2. The effort to maintain retailer relationships in the face of significantly reduced sales targets may have reduced overall program savings. The program implementer indicated that while it concentrated the program's offering within each retailer by limiting the number of manufacturer partners and eligible models, it also ensured some program budget was available for all historically active retailers to preserve relationships for the next program cycle and ensure lighting discounts are readily available to all residential customers. However, this approach resulted in 62% of program sales moving through big box channels, which, as discussed above, are increasingly saturated with non-program LED products, and demonstrated high free ridership rates in PY18.

Recommendation 2. In future years, Ameren Missouri should reevaluate the expectation that the Lighting program should serve the entire residential customer base. As LEDs become increasingly common – even without expected changes to federal lighting specifications – LED discounts may not be

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[2] Cadmus. Focus on Energy Calendar Year 2018 Evaluation Report, Retail Lighting and Appliance Program. Prepared on behalf of Public Service Commission of Wisconsin, May 17, 2019. Available online: https://www.focusonenergy.com/sites/default/files/WI_FOE_CY_2018_Volume_II.pdf

appropriate in retailers typically serving market segments with already high LED saturations. If the Lighting program is no longer expected to serve all customers, then many big box retail chains may also no longer be appropriate partners, and more program budget can be allocated to small chain retailers. However, if program targets are high enough to require sales in big box stores, the program is cost-effective even with 52% overall free ridership.

PY17 Recommendation Tracking

The Cadmus team requested Ameren Missouri's response to the PY17 evaluation's recommendations to track what has and has not been implemented. Table 8 presents the PY17 recommendations and the reported actions Ameren Missouri took in response.

Table 8. PY17 Evaluation Recommendation Tracking

PY17 Recommendation	Status	Ameren Missouri Response
The Cadmus team supports the program manager's intention to consider lowering the price floor to allow the program to operate in more discount stores and better serve low-income residents. In addition, Ameren Missouri may want to revisit the social marketing distribution strategy, historically used to promote CFLs in lower-income markets, for LEDs. Ameren Missouri also should consider delivery and marketing and outreach strategies that more specifically target renters, especially in multifamily homes.	Completed	Ameren Missouri lowered the price floor from $2/LED to $1/LED in select discount retail outlets. Ameren Missouri included a Low Income Energy Efficiency Grant program as part of its 2019–2021 plan, intended to allow distribution of LEDs in a manner similar to social marketing distribution in previous years. Ameren Missouri partnered with Spire and Ameren Missouri Gas to co-delivery the EE School Kits program. Ameren Missouri included a Multifamily Market Rate program as part of its 2019–2021 plan, which will help increase participation in the multifamily channel.
The program implementer can reduce free ridership on reflectors by maintaining a high markdown (above 50%) and concentrating sales through high elasticity channels (such as mass market and DIY). The implementer should consider specific bulbs, attributes, and competitive options in the specialty market when deciding whether to incentivize a product and to what extent.	Partially Completed	Ameren Missouri continued to market reflectors and specialty LEDs in mass market and DIY retail channels. The average markdowns in big box channels ranged from 30% to 44%, by measure category.
Planning for the next program cycle should anticipate that lighting savings will decline rapidly up to 2021, due to falling prices, reduced elasticity, reduced demand for lighting, and falling HOUs. If the U. S. DOE implements a new definition for general service lamps that includes specialty bulbs, and the backstop provision of 45 lumens per watt goes into effect in 2020, savings from LEDs will likely disappear entirely in 2021 (allowing for some sell-through of older stock). The program should adopt a highly segmented approach, targeting those segments—renters and low-income customers—that offer the most market opportunity as well as individual bulb types.	Completed	Ameren Missouri's 2019–2021 Lighting program will target hard-to-reach and low-income customers. The program also has incorporated anticipated falling prices and the U.S. DOE backstop provision.

Introduction

Ameren Missouri engaged the Cadmus team to perform annual process and impact evaluations of the Lighting program for a three-year period, from 2016 through 2018. This annual report covers the impact and process evaluation findings for Program Year 2018 (PY18), the period from March 1, 2018, through February 28, 2019 (i.e., the final year of the three-year program cycle).

Program Description

Ameren Missouri has offered point-of-sale (POS) discounts on residential lighting since 2009, though the program design details have evolved over the years. The PY18 Lighting program's design seeks to increase sales of highly efficient LEDs through retail channels across Ameren Missouri's territory.

Since 2015, Ameren Missouri has contracted with ICF International (ICF) to implement the Lighting program. ICF recruits retailers and lighting manufacturers to provide per-unit discounts for eligible LEDs sold through participating stores. In PY18, ICF recruited mainstream "big box" retailers as well as smaller discount and local franchise retailers, the majority of which participated in previous years. In addition to providing the retail discount, ICF worked with partners to locate Ameren Missouri signage and marketing materials in prominent locations in-store and near discounted products. ICF also offered discounted bulbs through the Ameren Missouri Marketplace, an online store.

Program Activity

In PY18, the Lighting program delivered a total of 213,854 products to Ameren Missouri participants, as shown in Table 9. Although the measure categories were the same as those used in the PY16 and PY17 programs, the distribution of sales across categories differed in a number of ways. General purpose bulb sales decreased from around 65% of sales in PY16 and PY17 to 51% in PY18, and 15W equivalent and 20W equivalent bulbs made up a much larger percentage of the total of general purpose bulbs (12% and 15%, respectively). The sales share of small reflectors (the 10.5W Downlight category) increased from around 1% of sales to 15% in PY18. The share of decorative bulbs (14% in PY18) was similar to PY17.

Table 9. PY18 Lighting Program Activity

Measure[1]	PY18 Sales[1]	PY18 Percent of Total Sales	*PY17 Percent of Total Sales*	*PY16 Percent of Total Sales*
General Purpose				
10W General Purpose	52,301	24%	*57%*	*59%*
15W General Purpose	25,486	12%	*1%*	*1%*
20W General Purpose	31,323	15%	*7%*	*5%*
Decorative				
4W Candelabra	19,353	9%	*10%*	*9%*
8W Globe	11,012	5%	*5%*	*1%*
Special Function (EISA[2] Exempt)				
12W Special Function	647	0%	*0%*	*1%*
Reflector				
10.5W Downlight	31,850	15%	*1%*	*1%*
15W Flood (PAR 30)	41,882	20%	*18%*	*23%*
Total	**213,854**	**100%**	***100%***	***100%***

[1] Participation is based on the date of sale rather than the date the discount was invoiced to the program. PY18 total participation includes only sales that occurred prior to March 1, 2019, although some of these sale discounts were invoiced to the program after that date.

Evaluation Methodology

The Cadmus team identified the following impact and process evaluation objectives for the PY18 Lighting program.

- Identify any changes in operation or design from the previous year, document reasons for the change, and assess the outcome of the change
- Ensure the evaluation met process and impact requirements set by the state of Missouri[3]
- Determine the appropriate baseline wattage
- Estimate the program's net-to-gross (NTG) ratio, including free ridership and spillover
- Estimate gross and net energy savings
- Assess coincident peak net demand savings using predefined load shapes and estimation methods

Table 10 lists PY18 evaluation activities conducted to achieve these objectives, followed by brief summaries of each activity.

Table 10. PY18 Process and Impact Evaluation Activities and Rationale

Activity	Process	Impact	Rationale
Data Tracking Review	✓	✓	Conducted semiannually to ensure collection of information necessary to inform the impact analysis, provide ongoing support to ensure all necessary program data are tracked accurately, and identify gaps for EM&V purposes.
Stakeholder Interviews	✓		Interview utility staff and implementer staff to provide insights into program design, delivery, satisfaction, and marketing effectiveness.
Engineering Analysis		✓	Determine PY18 gross savings using engineering algorithms and estimated and evaluated inputs.
Demand Elasticity Modeling		✓	Assess impacts from price changes, marketing, and product placement on PY18 sales to estimate free ridership.
Missouri Lighting Sales Data Analysis		✓	Determine the lighting spillover level resulting from PY18 program activity by comparing Ameren Missouri's program sales, service territory characteristics, total lighting sales to similar data from other regions, calculating an overall NTG ratio.
Benchmarking	✓		Compare program metrics to similar programs to identify the potential for program improvements.
Track Key Progress Indicators	✓	✓	Update on key progress indicators developed in PY16 to track progress in subsequent program years.
Cost-Effectiveness Review		✓	Determine the Lighting program's cost-effectiveness.

[3] State of Missouri. "Administrative Rules: Missouri Code of State Regulations." Missouri 4 CSR 240-22.070(8)(A) and (B). Revised May 2011. Available online: https://www.sos.mo.gov/cmsimages/adrules/csr/current/4csr/4c240-22.pdf

Data Tracking Review

On a semiannual basis, the Cadmus team reviewed the Lighting tracking database for completeness and accuracy by spot-checking records from each bulb type and retailer. The Cadmus team performed a complete review of year-end data against the ENERGY STAR®-certified product list and the manufacturers' published specifications.

Stakeholder Interviews

In February and March 2019, the Cadmus team interviewed key Lighting program stakeholders, to collect information on the following subjects:

- Utility and implementer roles, and changes in assigned staff or staff roles
- Updates to the program's marketing and education strategy, and their outcomes
- Implementation obstacles and solutions over the year
- Intent and outcome of any midyear implementation changes
- Program strengths and weaknesses over the year

As shown in Table 11, The Cadmus team spoke with Ameren Missouri's Program Manager and with an ICF representative. Appendix E provides the stakeholder interview guide.

Table 11. PY18 Completed Stakeholder Interviews

Stakeholder Group	Interviews Conducted
Ameren Missouri Program Management	1
ICF Program Management	1
Total	**2**

Additionally, Cadmus conducted an interview with Ameren Missouri's Marketing Manager that addressed marketing strategies and messaging for all programs, including Lighting. Throughout PY18, The Cadmus team regularly spoke with Ameren Missouri program staff to discuss program operations and to coordinate evaluation activities.

Engineering Analysis

The Cadmus team estimated gross per-unit savings using the industry-standard algorithms recommended in the Uniform Methods Project (UMP):[4]

$$\Delta kWh_{RES} = \frac{\left[\left(Watt_{Base} - Watt_{EE}\right) * Hours_{RES} * WHF_{RES}\right] * \%RES * ISR * (1 - LKG)}{1{,}000}$$

[4] Dimetrosky, S., K. Parkinson, N. Lieb. *Uniform Methods Project, Chapter 21: Residential Lighting Evaluation Protocol.* National Renewable Energy Laboratory. October 2017. Available online: https://www.nrel.gov/docs/fy17osti/68562.pdf

$$\Delta kWh_{NRES} = \frac{\left[\left(Watt_{Base} - Watt_{EE}\right) * Hours_{NRES} * WHF_{NRES}\right] * (1 - \%RES) * ISR * (1 - LKG)}{1{,}000}$$

Where:

$Watts_{EE}$	=	The average program bulb wattage
$Watts_{Base}$	=	The lumen-equivalent wattage of replaced bulbs
$Hours_{RES/NRES}$	=	Average daily HOUs for residential or nonresidential applications
%Res	=	The percentage of program bulbs installed in residential applications
ISR	=	The installation rate (with NRES assumed to be the same as RES)
LKG	=	The leakage rate (bulbs sold to customers outside of Ameren Missouri's service area)
$WHF_{RES/NRES}$	=	HVAC interaction factors (adjustments for HVAC interactive effects)

For PY18, the Cadmus team updated the $Watts_{EE}$ and $Watts_{Base}$ values using program tracking data. For all other inputs, The Cadmus team relied on values used in PY17. This report's Measure-Specific Gross Savings Section presents the results and further explains the methodology used.

Demand Elasticity Model

As in prior evaluations, in PY18 the Cadmus team used a demand elasticity model to analyze pricing impacts on sales and to determine free ridership levels for the lighting program. Demand elasticity modeling uses sales from all program distribution channels to:

- Quantify relationships of prices to sales;
- Determine the likely level of sales without the program's intervention (baseline sales); and
- Estimate free ridership by comparing modeled baseline sales with actual sales.

After estimating variable coefficients, The Cadmus team used the resulting model to predict sales that would have occurred *without* the program's price impact and promotional activity and sales that would have occurred *with* the program (and which should be close to actual sales with a representative model). The Cadmus team then calculated free ridership using the following formula:

$$FR\ Ratio = \left(\frac{Sales\ with\ Program - Model\ Predicted\ Sales\ without\ Program}{Sales\ with\ Program}\right)$$

Missouri Lighting Sales Data Analysis

The Cadmus team developed a national lighting sales model to estimate the net sales impact and net lighting savings percentage in Ameren Missouri service territory from Ameren Missouri's program activity.[5] The model quantified the relationship between the program spending per household (program intensity) and the percentage of light bulb sales that are LEDs (market share of LEDs) to output a comprehensive NTG estimate that accounted for free ridership and lighting spillover. The model also provided a detailed characterization of the Missouri market for LEDs, relative to those in other states and regions.

The underlying theory behind the national lighting sales data NTG model is that states with strong upstream lighting program activity, relative to those with little to no program activity, should have a higher market share of efficient lighting, as a percentage of total sales. The model used full category (across all lamp technologies and distribution channels) lighting sales data to estimate market lift as a function of program activity, while controlling for other factors (such as demographic characteristics and retailer composition in the service territory) that may also affect efficient lighting sales.

Multivariate Regression Model

The following equation presents the basic model. See the Net Lighting Sales Percentage Estimates section for a more detailed description of each input and how the model was applied:

$$LED\ Market\ Share_i = \beta_0 + \beta_1 * \sum Program\ Intensity\ Var + \beta_2 * \sum Channel\ Var + \beta_3 * \sum Demographic\ Var + \epsilon_i$$

Data Sources

The Cadmus team leveraged a variety of data sources for the analysis, though it relied primarily on sales data prepared by the Consortium for Retail Energy Efficiency Data (CREED).[6] CREED serves as a consortium of program administrators, retailers, and manufacturers working together to collect the data necessary for better planning and evaluation of energy efficiency programs. LightTracker is CREED's first initiative, focused on acquiring full-category lighting data (including incandescent, halogen, CFL, and LED bulb types) for all distribution channels in the United States. As a consortium, CREED speaks as one voice for program administrators nationwide in requesting, collecting, and reporting on the sales data required by the energy efficiency community.

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[5] This result does not include non-lighting spillover, referred to as "nonparticipant spillover" or NPSO. (See this report's Nonparticipant Spillover section for a detailed discussion of NPSO, which does not include lighting-based savings.)

[6] CREED. "Consortium for Retail Energy Efficiency Data." www.creedlighttracker.com

The sales data primarily derived from two sources: POS state sales data (representing grocery, drug, dollar, discount, mass merchandiser, and selected club stores) and National Consumer Panel (NCP) state sales data (representing home improvement, hardware, online, and selected club stores). The NCP data is also referred to as "non-POS" because it is data obtained from a panel, not direct sales data. The Cadmus team then cleaned and processed the data for analysis.[7,8]

Besides the sales data made available through LightTracker, the model inputs drew upon a combination of program data collected by The Cadmus team and on household and demographic data collected through various publicly available websites.

In total, the primary data sources for model inputs included:

LightTracker Data

- National bulb sales
  - POS data
  - NCP data
- U.S. Census Bureau Import data (CFL and LED imports)

Additional Model Inputs

- ENERGY STAR Lighting Program data (utility lighting program budgets)
- ENERGY STAR shipment data (released by the U.S. Environmental Protection Agency)
- North American Electrical Manufacturers Association shipment data
- American Community Survey (ACS) data (household characteristics and demographic data)
- Retailer square footage per state (based on the two primary retailer channel data sources)

Lighting Sales

The LightTracker POS data includes lighting sales data for grocery, drug, dollar, club, and mass market distribution channels. These data represent actual sales scanned at the cash register for participating retailers.

The NCP represents a panel of approximately 100,000 residential households nationwide that have been provided with a handheld scanner for their homes and have been instructed to scan a bar code for every

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[7] The information contained in this report is based in part on data that IRI reported through its Advantage service, as interpreted solely by LightTracker, Inc. Any opinions expressed reflect the judgment of LightTracker, Inc., and are subject to change. IRI disclaims liability of any kind arising from use of this information.

[8] Data presented include LightTracker calculations based partly on data reported by Nielsen through its Strategic Planner and Homescan Services for the lighting category, addressing the 52-week period ending approximately on December 31, 2018, for available state-level markets and Expanded All Outlets Combined (xAOC) and Total Market Channels. Copyright © 2018, Nielsen.

purchase they make. Using a scanner avoids potential recall bias, a prevalent factor in evaluation methods that use self-reported data. For Missouri, the NCP included approximately 1,500 households in 2018. Approximately 60% of the Missouri panel households purchased at least one light bulb in 2018, and 49% purchased at least one LED.

Although the POS dataset included detailed records of lighting data purchases, The Cadmus team had to expend considerable effort to ensure the data's integrity and inclusion of all necessary bulb attributes. For example, not all records included critical variables, such as bulb types, styles, wattages, and some included clearly erroneous values (for example, 60-Watt LEDs).

After a thorough review and quality control of the dataset, the Cadmus team reclassified, standardized, and populated missing variables; created additional variables; and performed general data enhancements. To populate missing variables, validate existing records, and include additional bulb attributes, The Cadmus team created a proprietary Universal Product Code (UPC) database with approximately 40,000 bulbs from five sources:

1. Manufacturer product databases provided to LightTracker.
2. Product catalogs downloaded from manufacturer and retailer websites via web scraping.
3. Product offerings downloaded from retailer websites.
4. Automated lookups of online UPC databases (such as www.upcitemdb.com).
5. ENERGY STAR databases (e.g., https://www.energystar.gov/productfinder/product/certified-light-bulbs).

The Cadmus team then then merged this bulb database with POS and NCP data and populated fields based on a hierarchy of the data sources that The Cadmus team considered most reliable. The LightTracker analysis typically prioritized sources using the following order: manufacturer specifications, UPC lookups, and original data provider (IRI and Nielsen) database values. The Cadmus team verified assignments by manually checking high-volume bulbs and outlier per-unit prices.

The final model included 45 observations, each representing a state. The model did not include Alaska, Hawaii, Iowa, North Dakota, Montana, or the District of Columbia as one or more data sources did not offer state-level data for the state. The lighting dataset included 2018 sales volumes and pricing for CFLs, LEDs, halogens, and incandescent bulbs for all channels combined, broken out by POS and non-POS channels.

As detailed below, the model's dependent variable used the percentage of LED sales (rather than total LED sales) to normalize for states with more or fewer bulb sales (LED or standard) due to differences in the number of households or sockets, existing saturations of efficient versus inefficient lamps, and other factors driving lighting sales.

Program Activity

To research program activity, the Cadmus team used internal resources and conducted a literature review of publicly available reports found on the Internet or provided by program administrators or their evaluators. When reports with the relevant information were not available, The Cadmus team

contacted local utilities in each given area. In some cases, actual 2018 values were not available in time for this analysis; so the Cadmus team utilized planning values filed by program administrators.

The Cadmus team collected the following program data:

- The total number of claimed LED upstream program bulbs reported by each program
  - Where available, the split between general purpose (A-line) and specialty (reflector, globe, candelabra) LEDs
- Upstream LED incentives
- Total upstream program budgets, including administrative costs

Where available, the Cadmus team used actual program expenditures. If these were not available, the Cadmus team used ENERGY STAR-reported expenditures, planning values, or prior program spending as a proxy.[9]

To determine Ameren Missouri Lighting Program activity and costs, the analysis team used Ameren Missouri's tracking data and general ledger accounting data. The Cadmus team used estimates for program activity and costs in other Missouri utility territories.

Presence and Absence of Retailers (Channel Variables)

The Cadmus team conducted secondary Internet research to determine the number and total square footage of store locations in each state, and in Ameren Missouri's territory, for five primary energy-efficient bulb retailers: Home Depot, Lowes, Walmart, Costco, and Menards. The Cadmus team used these data as explanatory variables in the model as these retailers sold a large quantity of energy-efficient bulbs; as such, the percentage of efficient bulbs could differ in states with more or fewer of these retailers.

State-Level Household and Demographic Characteristics

The Cadmus team gathered state-level demographic data from the ACS, including annual state-level data for the population, the total number of households, household tenures (own versus rent), home age, education, and income. As discussed below, the Cadmus team combined these data with other potential explanatory variables, including a political index, average costs of living, and average electric retail rates.

Net Lighting Sales Percentage Estimates

Using the regression models' results, LED sales data, and program-tracking databases, the Cadmus team estimated the net lighting sales percentage for PY18. The Cadmus team derived net lighting sales rate by first using the model to predict the share of LEDs with the program (modeling actual program spending,

[9] As the ENERGY STAR report only included expenditure ranges, the Cadmus team used midpoints of the ranges to represent expenditures.

as well as the actual program age) and without the program (the counterfactual of "no program" reflecting market share as if no program activity occurred in the current year).

This change in share represented the lift or net increase in the share of LED sales resulting from program activities. The Cadmus team then multiplied the change in share by the total number of bulbs (for all bulb types) sold in Ameren Missouri's territory in 2018 (as determined by the sales data analysis described above, with additional adjustments discussed below). This number represented the program's net impact on sales (that is, the total lift in the number of LEDs sold), which the Cadmus team divided by the total number of program bulbs sold (i.e., the gross number of bulbs) to determine the net sales rate:

$$Net\ Lighting\ Sales\ Rate\ = \frac{(\#\ bulbs\ sold\ with\ program - \#\ bulbs\ sold\ with\ no\ program)}{\#\ of\ program\ incented\ bulbs\ sold}$$

Determining Lighting Spillover

The Cadmus team used the net lighting sales rate from the Lighting Sales Data Analysis and the free ridership estimate from the Demand Elasticity Model to reverse-calculate lighting-based ("like") spillover from the PY18 program. Using free rider rates and this spillover calculation facilitated providing evaluation results in the same format as in previous years (and hence comparable to previous years). To calculate lighting spillover, the Cadmus team applied the following algorithm:

$$Like\ SO = Net\ Lighting\ Sales\ Rate - 1 + FR$$

Key Progress Indicators and Benchmarking

The Cadmus team continued to track the following key progress indicators for the Lighting program:

- Program-year electric savings
- Number of program bulbs sold
- Free ridership
- Net kWh savings per bulb

The Cadmus team also updated results for other Lighting program performance metrics benchmarked in the PY16 evaluation.

Nonparticipant Surveys

In PY18, Cadmus conducted 2,323 online and 57 phone surveys with Ameren Missouri customers who did not participate in any Ameren Missouri energy efficiency programs in PY17 or PY18. Cadmus conducted the surveys to calculate nonparticipant spillover (NPSO). The evaluation team drew a random sample of 60,000 Ameren Missouri customers, fielding the survey until reaching the quota of at least 2,250 nonparticipant customers. The Cadmus team asked respondents if they had adopted measures and about the influence of Ameren Missouri's efficiency program's marketing campaign on their decisions to adopt the measures.

Cost-Effectiveness Analysis

Using the final PY18 Lighting program participation and implementation data as well as *ex post* gross and net savings estimates presented in this report, the Cadmus team determined the program's cost-effectiveness using DSMore (a financial analysis tool designed to evaluate the costs, benefits, and risks of demand-side management [DSM] programs and services). As shown in the Cost-Effectiveness Findings section, the Cadmus team assessed cost-effectiveness using all five of the standard perspectives produced by DSMore:

- Total Resource Cost (TRC)
- Utility Cost Test (UCT)
- Societal Cost Test (SCT)
- Participant Cost Test (PART)
- Ratepayer Impact Test (RIM)

Process Evaluation Findings

As in PY17, the program implementer made only minor changes to the program design in PY18. The program partners, eligible measures, and marketing activities remained largely consistent with the prior two years. Given the program's mature design, the Cadmus team conducted a limited process evaluation of the Lighting program in PY18. This section presents the Cadmus team's findings on the program's design and operations in PY18, based on tracking data and stakeholder interviews.

The Lighting program is designed to achieve energy savings by increasing use of high-efficiency LED light bulbs over lower-efficiency baseline options. In doing so, the program provided POS discounts through major retail chains for high-efficiency, ENERGY STAR-certified LED light bulbs; the program also provided promotional events and literature that educated customers about different lighting technologies and conducted training with retail floor staff. PY18 was the third year that ICF implemented the program.

ICF reported that it managed the program to address two primary issues in PY18: controlling free ridership and avoiding overspending the program budget while maintaining a retail presence. To control free ridership, ICF limited the general-purpose bulbs available in big box stores, while increasing the number of lower-cost, general-purpose, and specialty options available through discount channels. To maintain the program's retail footprint, ICF signed at least one memorandum of understanding (MOU) with each retailer that participated in PY17 and wanted to continue in PY18. However, it did not sign MOUs with all manufacturers from PY17 in order to concentrate the amount of funds it was able to allocate to each retailer-manufacturer partnership. .

Ameren Missouri's program manager reported that Ameren Missouri was pleased with ICF's performance, and, while its performance last year was satisfactory, in PY18, it showed improvement in terms of streamlined operation and quality control. According to the program manager, ICF met Ameren's key performance indicators.

Partners

As the program nearly reached its expected total savings for the MEEIA 2 cycle in PY17, ICF wanted to limit early spending in PY18 as much as possible. At the same time, ICF wanted to preserve the program's market presence and relationships with retailers, to allow it to continue uninterrupted into the MEEIA 3 cycle. To achieve these opposing goals, ICF limited the proportion of the program budget that it allocated to MOUs signed early in the year. In addition, while it signed at least one MOU with each PY17 participating retailer that wanted to continue with the program, ICF limited offerings from big box retailers to fewer products and manufacturer partners than in past years.

While a similar number of partners participated in PY18 compared to PY17 (15 retailers and 14 manufacturers in PY18, compared to 14 retailers and 12 manufacturers in PY17), the partner mix changed somewhat. Two PY17 DIY big box retail partners did not participate in PY18, while a grocery chain, a dollar store chain, and a small hardware chain joined the program. Retailers offered program

discounts through 287 storefront locations and through Ameren Missouri's online store (operated by AMCG). Retailers represented five basic market channels:

1. Large DIY
2. Large mass-merchandise
3. Large club (membership) stores
4. Small chain (including specialty electronics, small DIY, and discount stores)
5. Online

Continuing the trend started in PY17, the program implementer shifted a greater percentage of the available budget to small chain retailers in PY18. Table 12 compares sales by delivery channel across all three years of Cycle 2.

Table 12. Program Sales by Channel[1]

Retail Channel	PY18 Sales	*PY17 Sales*	*PY16 Sales*
Large DIY	31%	*33%*	*53%*
Large Mass Merchandise	16%	*27%*	*22%*
Large Club	16%	*21%*	*21%*
Small Chain	37%	*19%*	*4%*
Online	1%	*1%*	*0%*
TOTAL	**100%**	***100%***	***100%***

[1]Percentages may not sum to 100% due to rounding.

Measures

In PY18, Ameren Missouri offered discounts on eight LED bulb measure categories in four usage categories: general purpose, EISA-exempt special-function bulbs (e.g., three-way bulbs), decorative bulbs, and reflectors. Table 13 shows each measure category's name, the associated bulb type, and the definition of bulbs assigned to that category.

Table 13. Lighting Program PY18 Eligible Measure Categories

Measure Category	Bulb Type	Category Specification
10W General Purpose	General Purpose	60-watt equivalent or less, determined by lumen output
15W General Purpose	General Purpose	75-watt equivalent, determined by lumen output
20W General Purpose	General Purpose	100-watt equivalent, determined by lumen output
4W Candelabra	Decorative	Small- and medium-base candle-shaped bulbs, all wattages
8W Globe	Decorative	Small- and medium-base globe-shaped bulbs, all wattages
12W Special Function	EISA Exempt	Bulbs otherwise subject to EISA as general purpose bulbs, but exempt due to special features (e.g., three-way)
10.5W Downlight	Reflector	Bulb diameters of 20 eighths of an inch or less (2.5 inches or less)
15W Flood (PAR 30)	Reflector	Bulb diameters more than 20 eighths of an inch, at 1,789 lumens or below

The PY17 evaluation found a high risk of increased free ridership for general purpose bulbs sold through big box retailers in future years, given that the rapid transition in the lighting market was happening

faster for general purpose bulbs than for specialty and reflector models. The PY17 evaluation also found, however, that a high percentage of renters and multifamily households were more likely than other household types to have never used any LEDs, regardless of bulb type.

Therefore, in PY18, ICF mostly approved specialty bulbs for big box retailer partners, but allowed more general-purpose bulbs in discount retail chains serving the market's lower-income segments, which were expected to include more renters and multifamily residents.

Incentives

In PY18, Ameren Missouri approved reducing the price floor from $2.00 to $1.00 for certain stores targeting lower-income customers. Reducing the price floor allowed ICF greater flexibility in product selection, including offering more lower-cost products through the program.

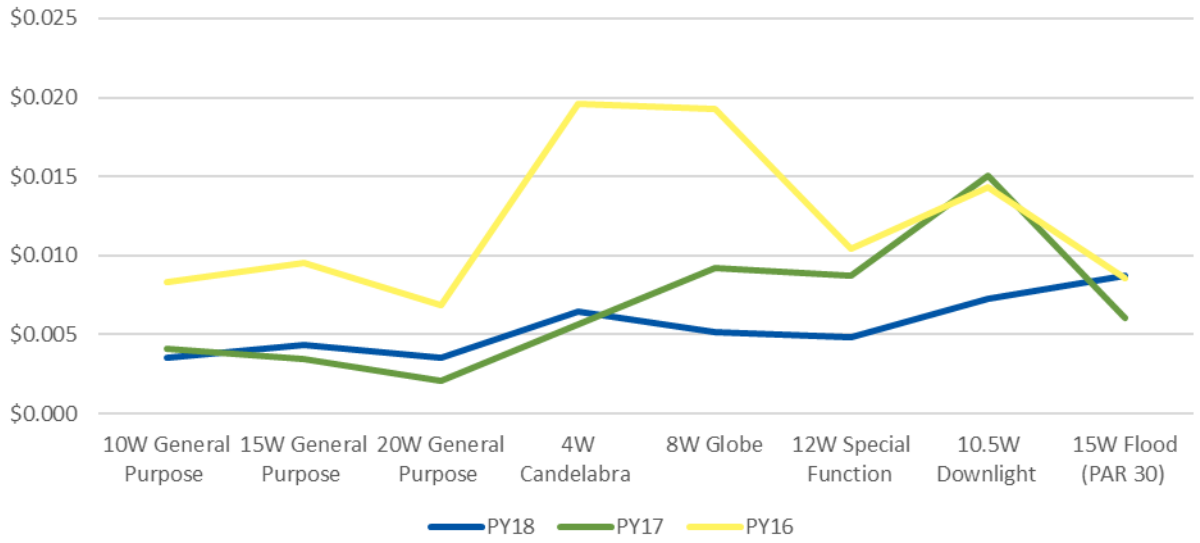
Table 14 shows average per-bulb discounts for each measure in 2018 (by quarter). The program implementer reported that LED retail prices remained more stable in PY18 than in previous years, allowing incentives rates to correspondingly become more stable. Over the year, the average incentive varied $0.30 or less for most measure categories. Incentives for several measure categories decreased over the year, to slow participation and avoid exceeding the program budget.

Table 14. PY18 Lighting Program Incentives by Product and Quarter

Bulb Type	Measure	Average Per-Unit Incentive				
		Q1	Q2	Q3	Q4	Year
General Purpose	10W General Purpose	$1.69	$1.56	$1.55	$1.57	$1.57
	15W General Purpose	$1.69	$1.65	$1.69	$1.65	$1.67
	20W General Purpose	$2.00	$1.82	$1.82	$1.87	$1.85
Decorative	4W Candelabra	$1.24	$1.04	$1.98	$1.74	$1.69
	8W Globe	$1.55	$1.53	$1.59	$2.00	$1.58
Special Function (EISA Exempt)	12W Special Function	$2.50	$2.50	$2.50	$2.50	$2.50
Reflector	10.5W Downlight	$2.81	$2.12	$2.05	$1.89	$2.10
	15W Flood (PAR 30)	$2.65	$2.09	$2.32	$2.43	$2.34

As shown in Figure 2, the average incentive dollars spent per net kWh was similar in PY18 to dollars spent in PY17 for most measure categories, after having dropped considerably in PY16. The only measure category not decreasing in PY17 was the 10.5W Downlight category, which saw reductions to levels similar to other measures in PY18. This category accounted for 15% of participation in PY18, an increase from 1% in PY17, making the decrease in cost per net kWh a significant reduction in the program's incentive costs.

Figure 2. Incentive Dollars Per Unit Energy Saved ($/Lifetime Net kWh)*



*This figure uses the present value of net kWh savings, not including NPSO, over the measure's EUL. Each measure's EUL was derived from the average of residential and nonresidential EUL values in Ameren Missouri's TRM, weighted by the percentage of bulbs in residential applications, as determined in the PY18 evaluation.

Marketing

ICF worked collaboratively with Ameren Missouri's corporate communications department to develop and implement marketing campaigns to support the Lighting program. In PY18, Ameren Missouri's Marketing Manager reported that the program used social media, in-store signage, billing statement messages, and a smart phone application.

Messaging

For PY18, Ameren Missouri developed a series of advertisements for social media and other platforms that included program-specific messages and more general conservation messages. All advertisements were designed to drive traffic to the website. Ameren Missouri issued the program-specific messaging earlier in the year to avoid overspending. As the programs approached their participation goals, Ameren Missouri switched to more general energy conservation messaging. This approach was designed to maintain a sense of importance around energy efficiency behavior, without overwhelming program budgets. For Lighting, LED messaging was issued throughout the year, targeting zip codes with lower incomes.

Figure 3 shows a messaging example specific to the Lighting program. In July 2018, the ad was posted to Facebook and Twitter.

Figure 3. Example of Lighting Ad

Source: Ameren Missouri.

Market Characterization

In addition to calculating an overall NTG, the Lighting Sales Data Analysis assessed some key drivers behind Missouri's LED market share. By accessing not only national sales data, but also the largest-known compilation of state program activity (e.g., incentives, overall expenditures, bulb volumes), the Cadmus team analyzed and compared Missouri's lighting program activity with other states' program activity. The following sections present findings derived from analyzing descriptive data statistics and employing the multivariate regression model.

The Cadmus team developed the following key attributes:

- **Market share distribution:** LEDs' market share distribution for the United States as a whole, Missouri versus the United States, and across each state and retail channel
- **Program intensity:** LEDs' lighting market share relative to overall program expenditures per household (binned by three tiers of spending magnitudes)
- **Program incentives:** Average LED lighting programs' incentives per bulb
- **ENERGY STAR market share distribution:** LEDs' market share distribution in Missouri compared to non-program states

Figure 4 shows market share of four bulb types (i.e., incandescent, halogen, CFL, and LED) across four years. LEDs, continuing to gain substantial market share, began cutting into 2018's inefficient lighting market. In fact, 2018 marks the first year in which efficient lighting (LEDs and CFLs) represents a majority of the U.S. lighting market; in the three years prior to 2018, efficient lighting shares largely held steady.

Figure 4. Year-Over-Year Total U.S. Market Share by Type

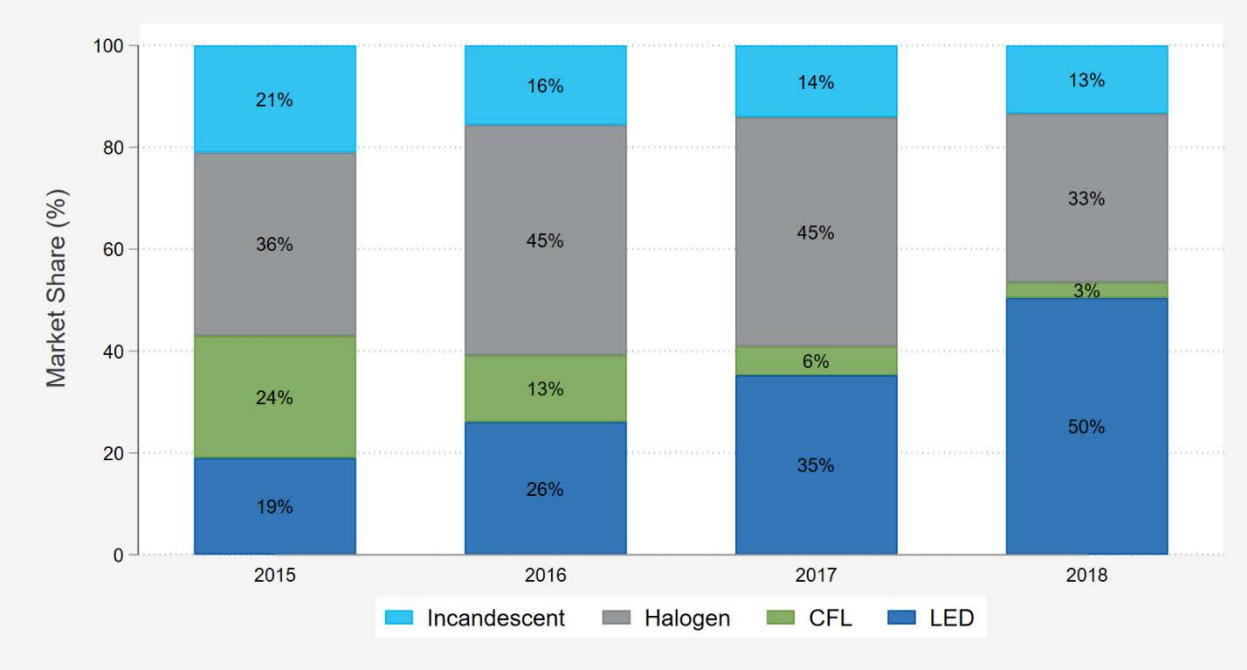


Figure 5 compares the above data to Missouri market shares, which were similar to national LED market shares in 2016 and 2017. Missouri, however, began distancing itself from national LED market shares in 2018 (54.2% in Missouri compared to 50.4% nationally).

Figure 5. Missouri and Total U.S. (TUS) Year-Over-Year Market Share by Bulb Type

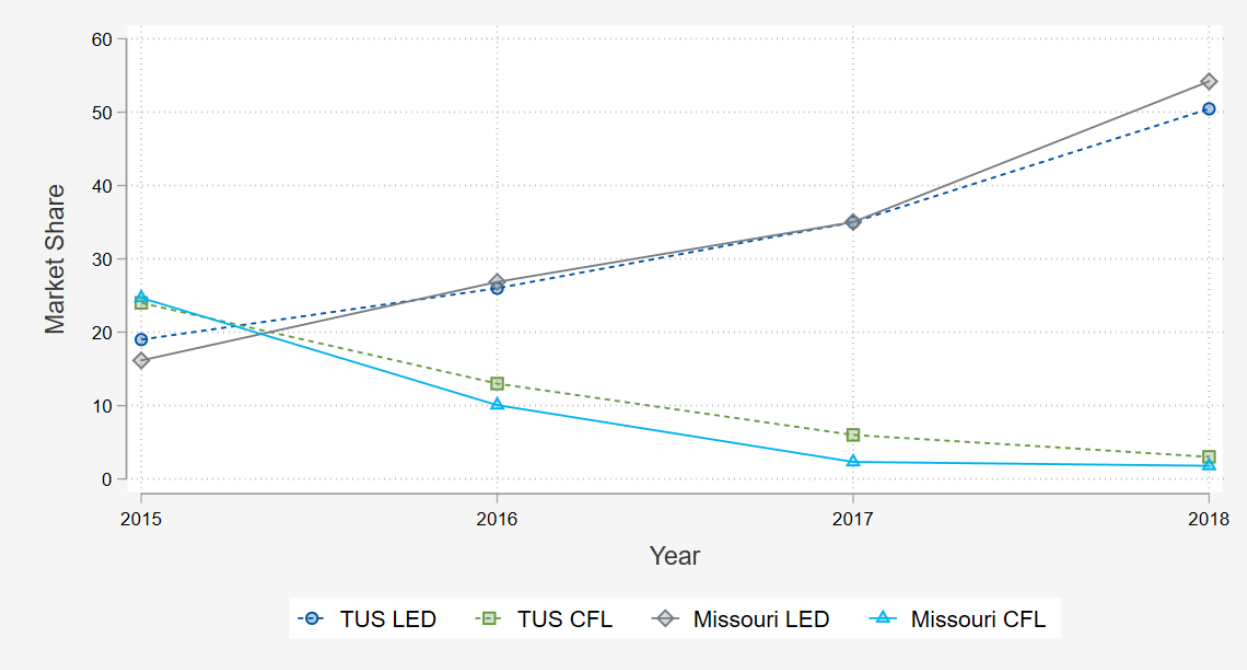


Figure 6 shows LED shares as a function of state-level program spending. As LEDs' market share increased, program spending increased. In the 2018 program activity dataset, 11 states did not run an upstream lighting program.[10] On average, 45% of bulb sales were LEDs in non-program states. Missouri, with approximate average spending of $1.17 per home, fell into the low end of moderate program activity category in the upstream lighting program, with LEDs accounting for 50% of total 2018 bulbs sales.

[10] The 11 states with no upstream lighting program (and hence $0 program spending) and included in the model are Alabama, Delaware, Kansas, Kentucky, Louisiana, Mississippi, Nebraska, Nevada, Tennessee, Virginia, and Wyoming.

Figure 6. Relationship Between Program Spending and LED Sales (Total U.S.)

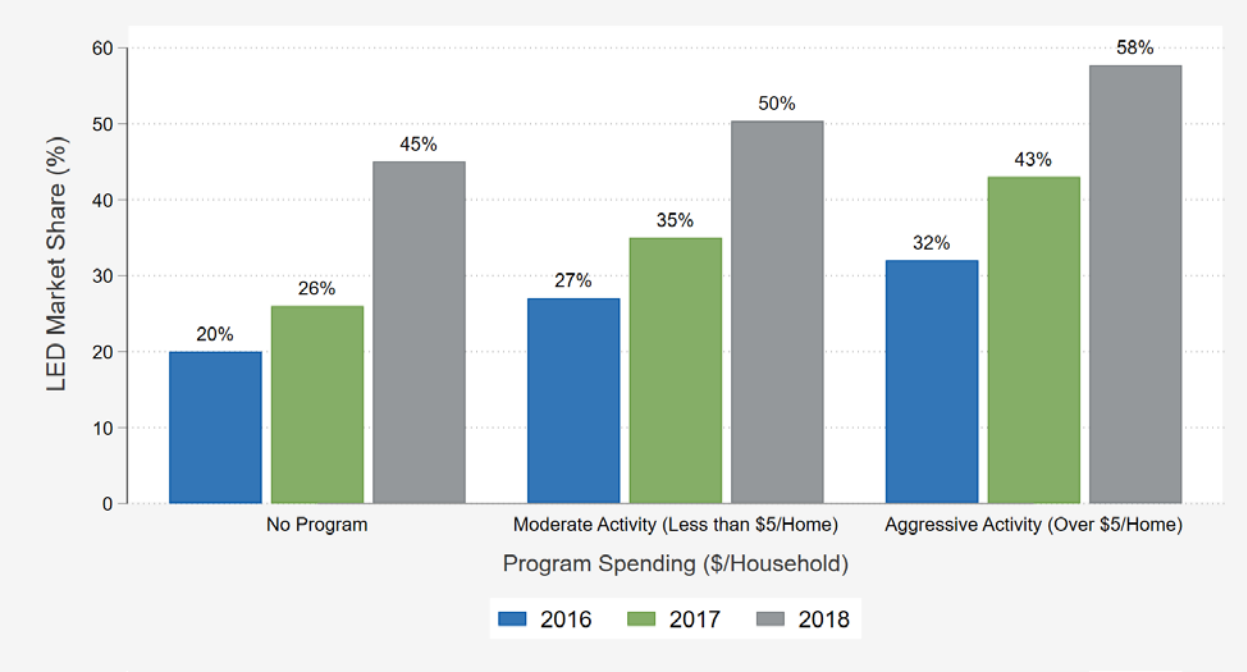
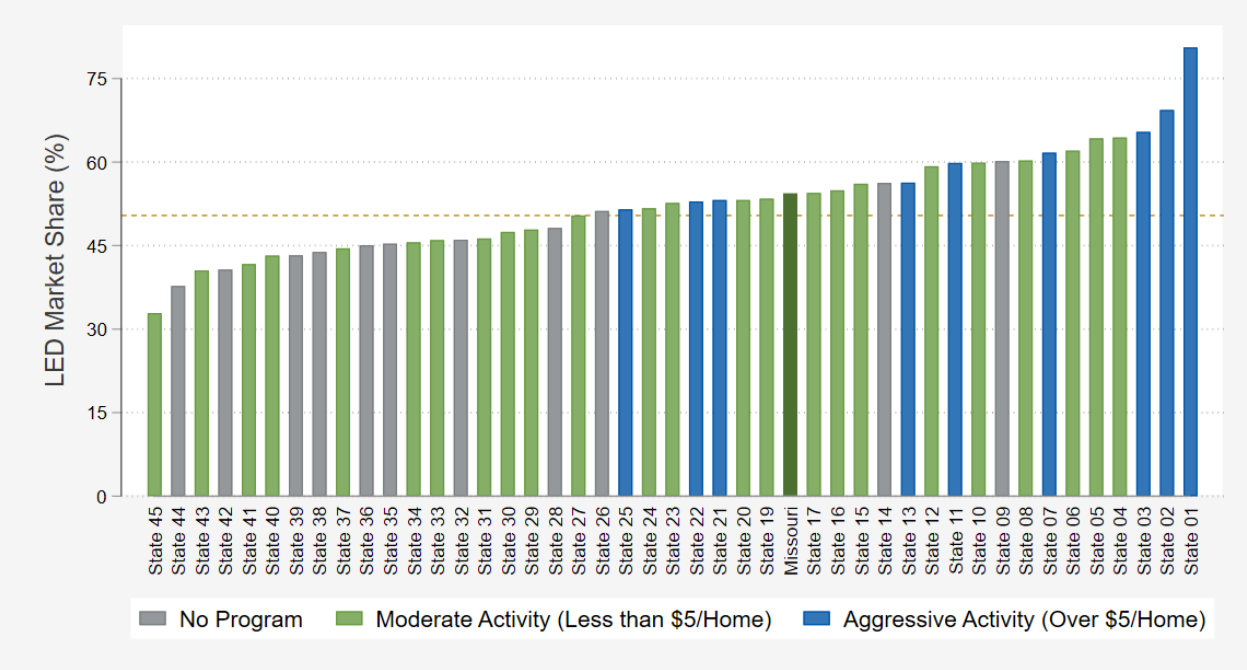


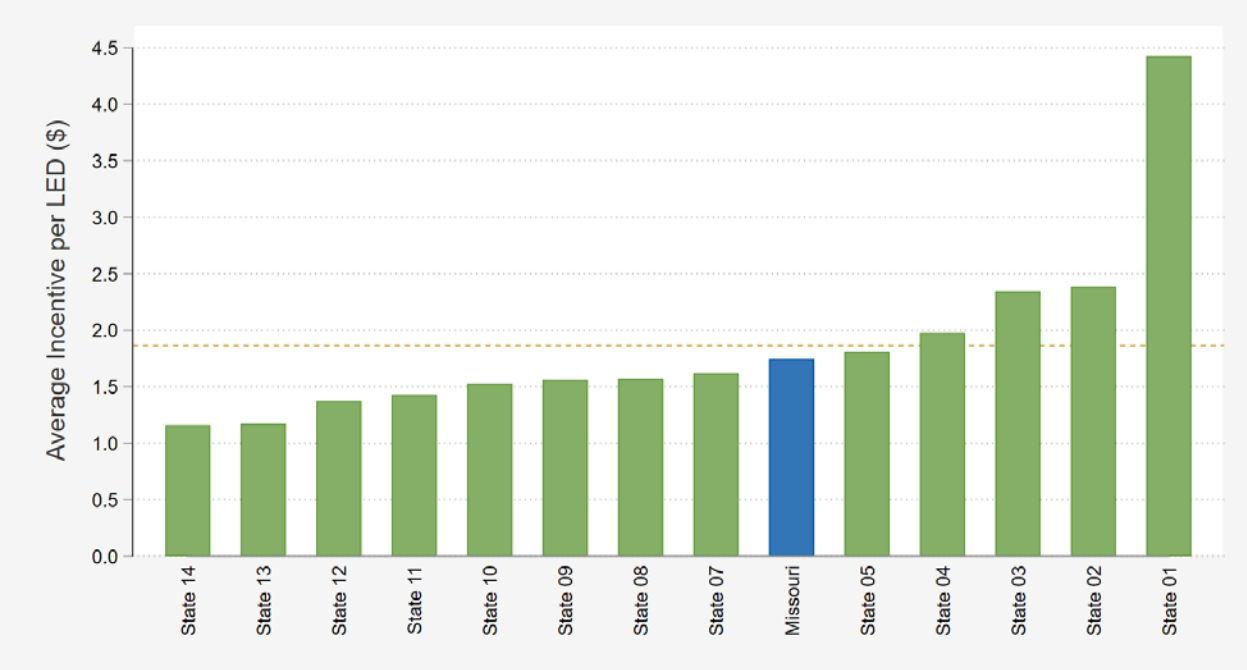
Figure 7 shows Missouri's positioning in comparison with modeled states when examining LED market shares. In Missouri the LED market share ranked 18th highest out of 45 states in the combined dataset. Blue bars represent states with aggressive programs, spending more than $5 per household. Programs in states with green bars spent less than $5 per household. Gray bars represent states that did not offer a lighting program. Note one of the non-program states with market share exceeding 50% actually offered aggressive programs until recently, so shows up as a non-program state in terms of 2018 spending.

Figure 7. LED Sales Distribution Across States (2018)



The Cadmus team also compared the average incentive offered per LED across states that collected LED incentive information. A simple calculation of incentive dollars divided by bulb units yielded average incentives per state. As shown in Figure 8, LED incentives ranged from about $1.00 per bulb to about $4.50 per bulb in the 14 states with relevant data that Cadmus could access. Missouri ($1.74) ranked near these states' average ($1.86), as indicated by a dotted yellow reference line. The median incentive per LED was $1.60—approximately $0.15 less than Missouri.

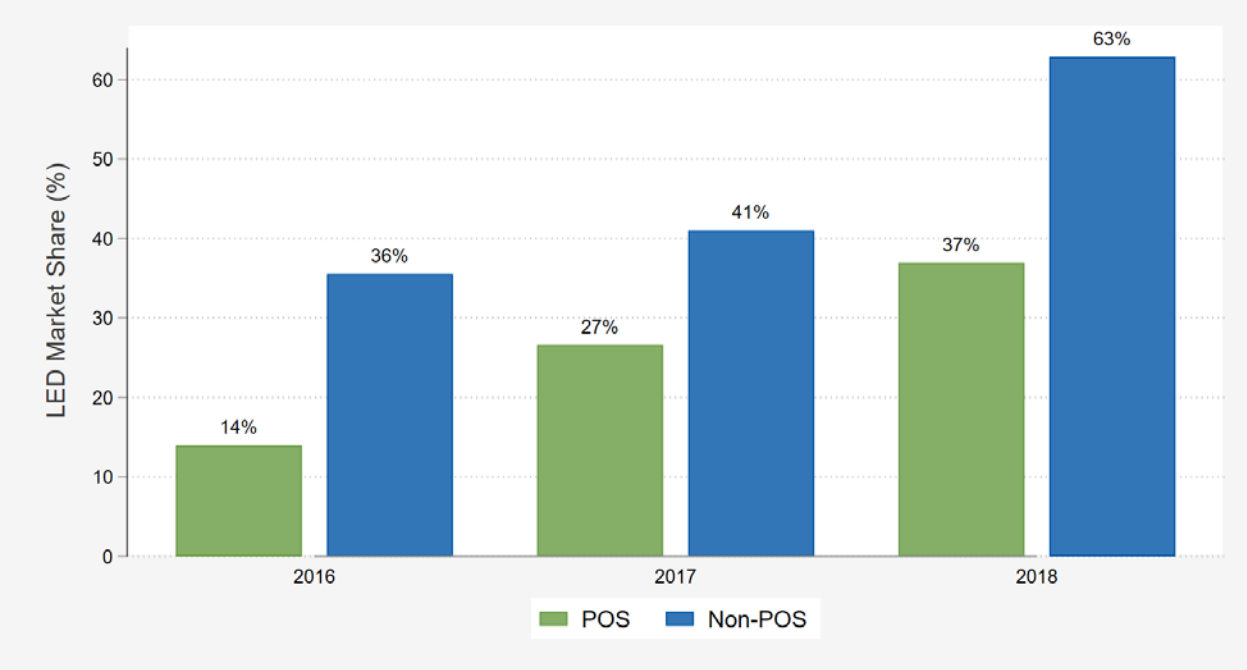
Figure 8. Average Upstream Lighting Incentive per LED



Analysis of sales data indicated that Missouri LEDs' market share was greater in non-POS retail channels than in POS retail channels.[11] In 2018, more than one-half (63%) of Missouri lighting purchases made in non-POS channels were LEDs, compared to 37% in the POS channel (shown in Figure 9). Since 2016, LED market shares have increased in both retail channels.

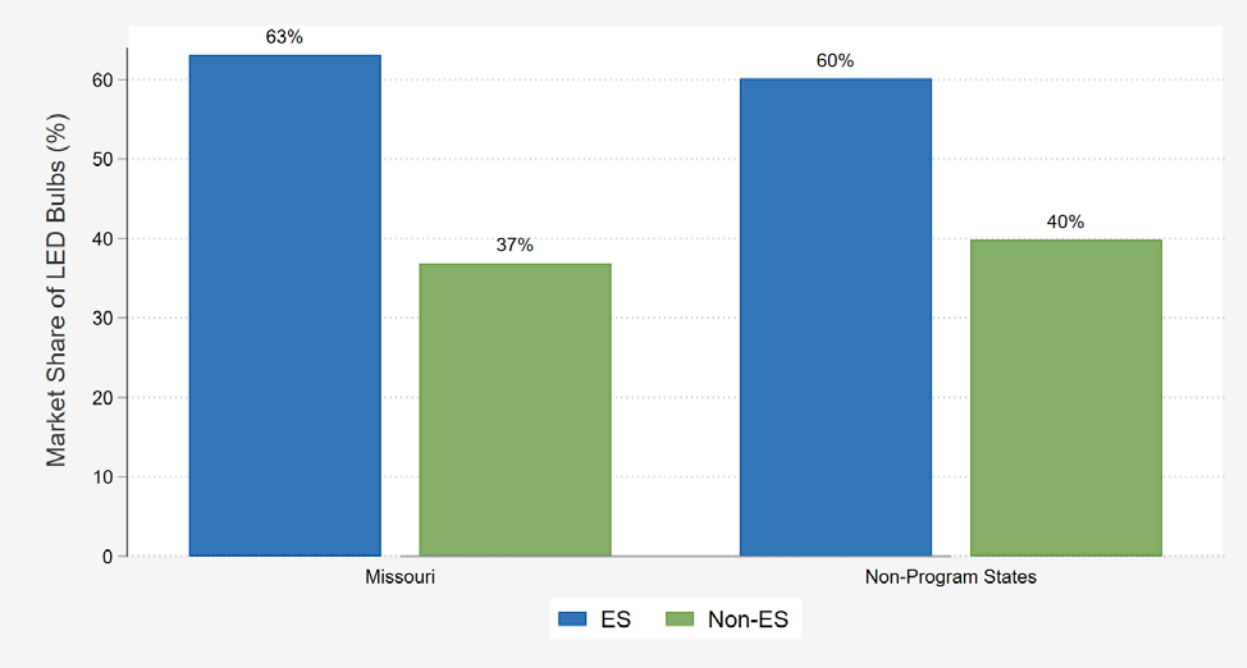
[11] In total, approximately 77% of Missouri's 2018 LED bulbs were purchased in non-POS channels, while approximately 32% were purchased in POS channels.

Figure 9. Missouri LED Market Share by Retail Channel Year-Over-Year



The Cadmus team reviewed ENERGY STAR LEDs' distribution within the POS channel. As shown in Figure 10, 63% of Missouri LED purchases in the POS retail channel were ENERGY STAR LEDs, whereas only 60% of LED purchases in non-program states were ENERGY STAR LEDs.

Figure 10. ENERGY STAR LED Market Share (2018 POS Channels)



Gross Impact Evaluation Results

The Cadmus team used engineering analysis to calculate gross savings per unit for each measure and total gross savings for the Lighting program.

Tracking Data Review

Mid-year, the Cadmus team conducted a limited review of tracking data to assess completeness and accuracy. Specifically, the Cadmus team verified that measure details—including measure descriptions, reported lumens, and reported wattages—remained consistent with the measure category[12] and reviewed information on manufacturers' or retailers' websites to verify models or SKU numbers. The Cadmus team did not identify significant errors in the first two quarters.

At year-end, the Cadmus team performed a comprehensive review of each reported transaction, confirming that measure details matched those reported in the ENERGY STAR-qualified product list or on the manufacturers' website. Through this review, the Cadmus team identified discrepancies in reported wattages or lumens for approximately 20% of reported bulbs. The great majority of these discrepancies were minor differences. For example, one bulb in the 10.5W Downlight category was reported as having 5.2 watts, while the ENERGY STAR database indicated the bulb had 4.8 watts. The Cadmus team used the ENERGY STAR database values, or manufacturer's published specifications if the bulb was not included in the ENERGY STAR database, for all instances where there was a discrepancy with the tracking data.

Measure-Specific Gross Savings

The Cadmus team estimated gross per-unit savings using the industry standard algorithm and protocols recommended in the UMP.[13] The Cadmus team calculated the savings value for each measure category as the sum of the following two equations:

$$\Delta kWh_{RES} = \frac{(Watt_{Base} - Watt_{EE}) * \%RES * ISR * (1 - LKG) * (Hours_{RES} * Days * WHF_{RES})}{1{,}000}$$

$$\Delta kWh_{NRES} = \frac{(Watt_{Base} - Watt_{EE}) * (1 - \%RES) * ISR * (1 - LKG) * (Hours_{NRES} * Days * WHF_{NRES})}{1{,}000}$$

[12] The program used the same measure categories and category definitions established in PY16. Appendix H provides the measure category specifications, which assign bulbs to categories based on function, size, wattage and lumens.

[13] Dimetrosky, S., K. Parkinson, N. Lieb. *Uniform Methods Project, Chapter 21: Residential Lighting Evaluation Protocol.* National Renewable Energy Laboratory. October 2017. Available online: https://www.nrel.gov/docs/fy17osti/68562.pdf

Where:

$Watt_{Base}$	=	Wattage of the baseline alternative bulb displaced by program bulb
$Watt_{EE}$	=	Wattage of program bulb
%Res	=	Percentage of program bulbs installed in residential applications as opposed to nonresidential applications
ISR	=	In-service rate
LKG	=	Leakage rate (program bulbs installed outside Ameren Missouri's service area)
$Hours_{RES}$	=	Average HOU per day for bulbs installed in residential applications
$Hours_{NRES}$	=	Average HOU per day for bulbs installed in nonresidential applications
Days	=	Days used per year
WHF_{RES}	=	HVAC interaction factors (adjustments for HVAC interactive effects) for bulbs installed in residential applications
WHF_{NRES}	=	HVAC interaction factors (adjustments for HVAC interactive effects) for bulbs installed in nonresidential applications
1,000	=	Conversion factor from Wh to kWh

Table 15 shows the source for each input value required in the PY18 evaluation.

Table 15. Source for PY18 Lighting Energy Savings Input Values

Data Required	Data Source for PY17 Evaluation
$Watts_{Base}$	Sales-weighted average of baselines for each model in the measure category, using complete PY18 sales data. The baseline wattage was determined by the lumen-per-watt output, using the ENERGY STAR reference database or, if the bulb was not included in the ENERGY STAR database, the manufacturer's stated equivalent baseline.
$Watts_{EE}$	Sales-weighted average of program bulb wattages in each measure category, using complete PY18 sales data.
%RES	PY16 store intercept study: survey of 458 shoppers in 29 participating retailer locations.
ISR	PY17 home inventory study from a sample of 200 homes, comparing stored bulbs to installed bulbs. Installation projected over four years, as recommended by the UMP.
LKG	PY16 store intercept study: survey of 458 shoppers in 29 participating retailer locations.
$Hours_{RES}$	HOU estimates by room from the *Illinois Statewide Residential LED Hours of Use Study Results* (2017),[2] adjusted based on the distribution of LEDs by room types from the Cadmus PY17 home inventory study for Ameren Missouri.
$Hours_{NRES}$	Illinois TRM v6.0, Lighting Reference Tables (Sec. 4.5); "unknown" building type, screw-based bulb annual operating hours.[1]
WHF_{RES}	Cadmus' PY13 modeling analysis was updated to reflect demographics and program-specific saturations of heating systems, cooling systems, and fuels used, as determined from Heating and Cooling participant surveys conducted in 2016–2017.
WHF_{NRES}	California Database for Energy Efficiency Resources, 2008: average HOU for screw-based bulbs, using nonresidential miscellaneous interior space values.[3]

[1]Illinois Statewide Technical Reference Manual, Version 6.0, Vol. 2 Commercial and Industrial Measures. Available online: http://www.ilsag.info/il_trm_version_6.html

[2]Opinion Dynamics, *Illinois Statewide Residential LED Hours of Use Study Results*, on behalf of Commonwealth Edison and Ameren Illinois Company. 2017.

[3]Summit Blue Consulting. California Database for Energy Efficient Resources. 2008. Available online: http://www.deeresources.com/index.php/23-deer-versions

$Watts_{EE}$ and $Watts_{Base}$

The Cadmus team determined the efficient wattage ($Watts_{EE}$) for each measure category by averaging the wattage of all bulbs sold in that measure category. For example, bulbs sold in the 15-watt Flood (PAR30) measure category in PY18 ranged from 7 watts to 17 watts. Table 16 shows $Watts_{EE}$ for each measure category in PY18 as well as for the PY17 and PY16. For most categories, efficient watts values changed very little from PY17 to PY18. Since the $Watts_{EE}$ category is the weighted average of the program bulbs sold in each category, any changes in the $Watts_{EE}$ are due to a change in the mix of products included in the program. For the 10.5W Downlights, the relatively large increase in $Watts_{EE}$, from 6.5 watts in PY17 to 10.7 watts in PY18, is related to the overall jump in the sales of this type of bulb. Sales increased from just over 8,000 bulbs in PY17 to over 30,000 bulbs in PY18, and most of the increase were bulbs with a wattage of 8 or higher. Bulbs of 8 or more watts were 80% of this category in PY18, compared to 3% in PY17. The 12W Special Function also showed a notable increase in $Watts_{EE}$, but the value is very sensitive changes in bulb mix due to the category's limited sales (628 in PY18).

Table 16. PY18 Evaluated Efficient Wattages by Measure Category

Measure Category	PY18 $Watts_{EE}$	PY17 $Watts_{EE}$	PY16 $Watts_{EE}$
10W General Purpose	8.4	*9.0*	*9.2*
15W General Purpose	12.1	*11.6*	*10.8*
20W General Purpose	15.2	*14.9*	*15.0*
4W Candelabra	4.0	*4.6*	*4.5*
8W Globe	5.2	*5.8*	*5.9*
12W Special Function	15.4	*8.8*	*9.5*
10.5W Downlight	10.7	*6.5*	*7.0*
15W Flood PAR 30	10.0	*10.6*	*11.2*

The Cadmus team determined the baseline wattage ($Watts_{Base}$) for all reflectors and specialty bulbs, using the baseline wattage for each program bulb defined in the ENERGY STAR Qualified Product List or using manufacturers' stated equivalent wattage. Baseline values for general-purpose bulb measure categories (10-watt, 15-watt, and 20-watt General Purpose) conformed to EISA regulations.

Table 17 shows baseline wattage values for PY18 and corresponding values for previous program years. In most categories, PY18 values were similar to PY17 values. Similarly to the $Watts_{EE}$ values, only the 10.5-watt Downlight and the 12-watt Special Function categories showed a substantial change from PY17. As noted, this change resulted from a greater proportion of 10.5-watt bulbs having higher wattages, and thus higher lumens and correspondingly higher lumens than in previous years, and to a general shift in bulb type distributions in the 12-watt Special Function category.

Table 17. PY18 Evaluated Baseline Wattages by Measure Category

Measure Category	PY18 $Watts_{Base}$	*PY17 $Watts_{Base}$*	*PY16 $Watts_{Base}$*
10W General Purpose	39.5	*41.1*	*41.3*
15W General Purpose	53.0	*53.0*	*53.0*
20W General Purpose	72.0	*71.7*	*72.0*
4W Candelabra	39.0	*41.0*	*40.4*
8W Globe	41.4	*40.6*	*42.0*
12W Special Function	92.2	*60.0*	*76.3*
10.5W Downlight	53.0	*34.2*	*43.1*
15W Flood PAR 30	61.3	*60.9*	*62.1*

HOU ($Hours_{Res}$ and $Hours_{Nres}$)

For the PY18 evaluation, the Cadmus team used the residential HOU (HoursRes) estimate calculated in PY17. At that time, the Cadmus team updated the HoursRes using LED-specific, room-level HOU estimates from the *Illinois Statewide Residential LED Hours of Use Study*,[14] weighted with LED distributions by room type derived from the PY17 home inventory study.

As in PY17, the Cadmus team sourced the nonresidential HOU (HoursNres) from the Illinois Technical Resource Manual, Version 6.0, approved in January 2018. As a result, the Cadmus team's estimate for HoursNres remains unchanged from PY17.

Table 18 shows residential and nonresidential HOU values used in the PY18 impact analysis.

Table 18. PY18 HOU Values

End Use	HOU
HOURes	2.73
HOUNRes	9.90

In-Service Rate

In PY18, the Cadmus team used the same in-service rate (ISR) calculated for the PY17 evaluation. The PY17 ISR represented the present value of cumulative installations over a four-year period. The Cadmus team first calculated the cumulative installation rate, as proscribed in the UMP,[15] beginning with the

[14] Opinion Dynamics. *Illinois Statewide Residential LED Hours of Use Study Results.* On behalf of Commonwealth Edison and Ameren Illinois Company. 2017.

[15] Dimetrosky, S., K. Parkinson, N. Lieb. *Uniform Methods Project, Chapter 21: Residential Lighting Evaluation Protocol.* National Renewable Energy Laboratory. October 2017. Available online: https://www.nrel.gov/docs/fy17osti/68562.pdf

first-year install rate from the PY17 home inventory study, and progressing by 24% of remaining uninstalled bulbs for three more years.

To account for time delays incorporated in this approach, the Cadmus team determined the net present value of savings from the cumulative number of installed bulbs, dividing that by the savings from the same number of bulbs, had they all been installed in Year 1.

Table 19 shows the ISR used in the PY18 evaluation.

Table 19. PY18 ISR

Measure Category	ISR
All Measures	91.9%

WHFRes and WHFNRes

The Cadmus team used the waste heat factors (WHF) for residential (WHF_{Res}) and nonresidential use (WHF_{NRes}) applied in the PY16 evaluation. To estimate the WHF_{Res}, the Cadmus team used a model populated with typical home characteristics (identified from Ameren Missouri's 2012 potential study) to simulate how heating and cooling needs changed when converting incandescent lights to efficient LEDs. Specifically, the Cadmus team used BEopt™ Version 2.0 to model energy simulations needed for estimating WHF_e (energy) in residential homes. The PY13 Lighting program evaluation presented details on the original WHF_{Res} analysis.[16] The Cadmus team used the WHF_{NRes}, developed in collaboration with Ameren Missouri's nonresidential evaluation contractor in PY15.

Table 20 shows PY18 values for WHF_{Res} and WHF_{NRes}.

Table 20. WHF by Sector

Sector	WHF
Residential	0.99
Nonresidential	1.10

Leakage and Residential Percentage

The Cadmus team applied the PY17 Leakage and Residential Percentage values for the PY18 evaluation. In 2016, the Cadmus team conducted an in-store customer survey (known as an intercept survey) to determine the percentage of bulbs purchased through the Lighting program in large national brand

[16] Cadmus and Nexant. *Ameren Missouri LightSavers Process and Impact Evaluation: Program Year 2013*. Presented to Ameren Corporation. June 2014.

retail stores and installed outside of Ameren Missouri's territory (i.e., leakage) as well as the percentage of program bulbs installed in residential (versus nonresidential) applications (i.e., the residential percentage).[17]

To update these values for PY17, the Cadmus team weighted results according to each store's contribution to total PY17 sales (from stores in the sample), and weighted results back to the total population by adjusting for each retail channel's total contribution to PY17 sales from large national brand stores. In PY18, retailer mix changes and an increased percentages of small chain stores not well-represented in the original sample prohibited comprehensively updating of analysis weights. As the program delivery model did not substantially change relative to the previous year, the Cadmus team considered the PY17 estimate representative of the PY18 program.

Table 21 shows the leakage and nonresidential percentages used for the PY18 evaluation.

Table 21. PY16 - PY18 Program-Level Leakage

Value	PY18	*PY17*	*PY16*
Leakage	0.22%	*0.22%*	*1.65%*
Residential %	99.24%	*99.24%*	*99.15%*

Demand Savings

The Cadmus team determined the program's gross demand savings by applying the following algorithm:

$$kW = (\Delta kWhRes * CPDFRes * \%Res) + (\Delta kWhNRES * CPDFNRES * (1 - \%Res))$$

Where:

- kWhRes = Evaluated gross energy savings for program measures installed in a residential setting
- CPDFRes = Coincident Peak Demand Factor for residential lighting
- %Res = Percentage of program bulbs installed in residential applications as opposed to nonresidential applications
- kWhNres = Evaluated gross energy savings for program measures installed in a nonresidential setting
- CPDFNres = Coincident Peak Demand Factor for nonresidential lighting

Gross Savings Summary

Table 22 lists *ex ante* and *ex post,* gross, per-unit energy savings and realization rates by measure for PY18. Differences between the Ameren Missouri TRM and the evaluated values primarily resulted from

[17] Cadmus and Nexant. Ameren Missouri PY16 Lighting Evaluation. Presented to Ameren Corporation. July 2017.

updated HOU and ISR values in PY17, and, for the 10.5-watt downlight and Special Function categories, changes in the bulb mix within the category.

Table 22. PY18 Gross Per Unit Energy Savings

Measure Category	*Ex Ante* Savings/ Unit (kWh)*	*Ex Post* Savings/ Unit (kWh)	Realization Rate
10W General Purpose	34.0	28.7	84%
15W General Purpose	44.6	37.8	85%
20W General Purpose	60.3	52.5	87%
4W Candelabra	38.0	32.4	85%
8W Globe	38.2	33.5	88%
12W Special Function	71.5	71.0	99%
10.5W Downlight	38.1	39.1	103%
15W Flood (PAR 30)	53.8	47.4	88%

*Source: Ameren Missouri 2018 TRM.

Table 23 presents gross, per-unit demand savings for PY17. *Ex ante* savings values were sourced from the Ameren Missouri TRM.

Table 23. PY18 Gross Per Unit Demand Savings

Measure Category	*Ex Ante* Savings/Unit (kW)*	*Ex Post* Savings/Unit (kW)	Realization Rate
10W General Purpose	0.005081	0.004326	85%
15W General Purpose	0.006663	0.005692	85%
20W General Purpose	0.009019	0.007899	88%
4W Candelabra	0.005674	0.004870	86%
8W Globe	0.005695	0.005045	89%
12W Special Function	0.010723	0.010686	100%
10.5W Downlight	0.005689	0.005886	103%
15W Flood (PAR 30)	0.008034	0.007128	89%

*Source: Ameren Missouri 2018 TRM

Net Impact Evaluation Results

The Cadmus team determined Lighting program direct net impacts through the Missouri Lighting Sales Data Analysis. This analysis provides a holistic measure of net sales and does not disaggregate to show freeridership or lighting ("like") spillover. To facilitate reporting and comparison with previous years, the Cadmus team used additional analyses to isolate the individual components of the NTG. The Cadmus team used a demand elasticity model to determine freeridership, and then used the NTG and the FR values to calculate the like spillover rate, according to the following algorithm:

$$\textbf{\textit{Like Spillover}}(\%) = \textbf{\textit{NTG}} - 1 + \textbf{\textit{Freeridership}}$$

Finally, the Cadmus team allocated a portion of the portfolio nonparticipant spillover (NPSO) to determine total Lighting program net impact. The Cadmus team added the NPSO savings attributable to the Lighting program as a lump sum, rather than calculated based on a given amount per unit. The Cadmus team did not incorporate NPSO savings into the program NTG ratio because the NPSO savings have a different load shape and cost-effectiveness needs to be assessed separately.

Free Ridership Results

To estimate free ridership in PY18, the Cadmus team developed an econometric model that uses demand for program LEDs as a function of price. Demand elasticity modeling draws upon the same economic principle driving the program design: changes in price and promotion generate changes in quantities sold (i.e., the upstream buy-down approach). For this analysis, the Cadmus team analyzed sales through two major retailer types: big box (which represented large DIY, mass merchandise, and club stores) and small chain (which represented grocery, small hardware, discount, dollar and small electronics stores). Cadmus analyzed only sales that took place between March 2018 through February 2019. Additionally, online sales, bulbs in the 12W Special Function category, and 1,285 bulbs that were added to the tracking data in June 2019 (together representing 1.7% of PY18 sales) were not included in the model. Overall, the model included sales of 134,811 bulbs suitable for analysis. Table 24 presents the distribution of modeled bulb sales across the two retailer types, by measure category.

Table 24. Percentage of Program Sales by Retailer Group and Measure Category[a]

Measure	Big Box Sales	Small Chain Sales	Total Sales
10W General Purpose	2%	16%	18%
15W General Purpose	10%	3%	13%
20W General Purpose	16%	0%	16%
4W Candelabra	6%	3%	8%
8W Globe	7%	0%	7%
12W Special Function	N/A	N/A	N/A
10.5W Downlight	17%	1%	19%
15W Flood (PAR 30)	13%	6%	19%
Program Total	**71%**	**29%**	**100%**

Sales of products that incurred price changes within the program period represented 60% of total program sales available for analysis. Sales of products with no variation in price are excluded from the model as they provide no information regarding changes in demand when prices change. The majority of 60-watt equivalent A-line LEDs sold at retailers had little or no variation in price and only 29% of these sales were included in the model. However, the model included 66% of 75-watt and 77% of 100-watt equivalent A-line LEDs. Together, these accounted for more than half of A-line LED bulbs sold through the program.

Due to reduced sales volumes and fewer program-supported products within participating retailers, the number of days between sales reports varied greatly and several calendar months had a small number of days with reported sales. Once the Cadmus team allocated the sales reported within the invoice periods to calendar months it was apparent there were a substantial number of calendar months where sales were reported for only a fraction of days within a given month. For example, August was the only month for which Costco stores reported sales for all 31 days. Other months had as few as five days with reported sales. Monthly sales were highly correlated with the number of invoice period days that fell within a specific calendar month. Rather than modeling monthly sales within a given retailer, the Cadmus team modeled average daily sales within each month for each product type and retailer's store based on invoice dates and quantities in the tracking data.

The Cadmus team modeled program sales as a panel, with the price-per-bulb averaged across all comparable products within each of the retailer's unique store locations each month (e.g., all 10-watt General Purpose bulbs sold at store location *X*). Appendix G describes the model developed in PY18.

Combining sales and prices this way (rather than observing price and sales changes for each individual model number) allowed the analysis to capture substitutions between comparable products (e.g., a decrease in the average price per-bulb, and a corresponding increase in total program sales, when adding a three-pack of an existing bulb to the product mix).

Similarly, when an updated version of a bulb (with a different model number) replaced an original bulb model, the first model's sales dropped as the retailer sold off back stock, while the second model's sales increased. Aggregating prices and sales captured variations across both products rather than controlling for sales impacts from factors unrelated to price (i.e., products phased out and replaced).

Elasticities

The price elasticity of demand measures the percentage of change in a quantity demanded, given a percentage change in price. In previous similar analyses, the Cadmus team has seen elasticities range from -1 to -3, meaning a 10% drop in price leads to a 10% to 30% increase in the quantity sold.

Table 25 shows elasticity estimates from PY18. These price elasticities represent the percentage change in demand when prices change by 1%. For example, general purpose bulbs at big box stores have an elasticity of 1.47, meaning a 1% decrease in price leads to increased sales of 1.47% at big box stores.

The Chain store retailer elasticity was not broken out by bulb type. No reflectors were sold through the Chain retailers in the model data, and no statistically significant difference emerged between GS and

decorative elasticities within Chain stores. Rather, the chain store elasticity is the average across all bulbs and applied equally to sales of all bulbs within that channel.

Table 25. Price Elasticity Estimates by Retail Channel and Bulb Type

Retail Channel	Type	Elasticity
Big Box	General Purpose	-1.47
	Decorative	-1.06
	Reflector	-0.45
Small Chain	All	-1.97
Incremental Slope Adjustments		
Club Store 1	All	-1.73

The model data contained no price variation for reflector sales from small chain retailers, therefore program-level freeridership estimates are based solely on elasticity estimates of reflectors at big box stores. Given small chain retailers accounted for only 18% of reflector sales the big box reflector elasticities are largely representative of program reflector sales.

Decorative bulbs accounted for only 10% of sales at chain store retailers and the Cadmus team found no statistically significant difference between general purpose and decorative elasticities within small chain stores.

The model identified a significant difference between price elasticities at Club Store 1 (for all bulb types) and other big box retailers. Therefore, the big box store model included an incremental slope adjustment when those sales took place at Club Store 1. For example, bulbs sold at Club Store 1 had a base elasticity of 1.73. For decorative sales at Club Store 1, the Cadmus team added the decorative elasticity to the incremental slope for Club Store 1, hence 1.73 plus 1.06 resulted in an elasticity of 2.79.

Program Price Impacts

Table 26 shows sales-weighted, average sale prices, original prices, and markdowns within the program, broken out by retail channels and bulb types. The table also shows markdowns as a share of original prices. The average markdown for most store type and measure combinations ranged from 20% to 44%. General purpose bulbs in small chain stores had both the highest and lowest percentage markdowns. The 10-watt and 15-watt categories had the highest markdown, at 73% and 55%, respectively, while the 20-watt category had the lowest markdown, at 20% (though very few 20-watt bulbs were sold through the small chain stores).

Table 26. Mean Prices and Markdown by Retail Channel and Bulb Type

Store Type	Bulb Type	Mean Regular Price/Bulb	Mean Final Price/Bulb	% Markdown
Big Box	10W_LED	$6.25	$3.47	44%
	15W_LED	$4.27	$2.56	40%
	20W_LED	$4.96	$3.07	38%
	4W_LED_Candelabra	$3.72	$2.58	30%
	8W_LED_Globe_Light	$5.26	$3.26	38%
	10.5W_LED_Downlight	$5.52	$3.15	43%
	15W_LED_Flood_Light_PAR30	$5.77	$3.53	39%
Chain	10W_LED	$6.92	$1.83	73%
	15W_LED	$7.59	$3.39	55%
	20W_LED	$9.99	$7.99	20%
	4W_LED_Candelabra	$6.29	$3.85	39%
	8W_LED_Globe_Light	$6.45	$4.45	31%

LED markdown levels remained relatively stable between PY17 and PY18, ranging from 38% to 68% in PY17.

Free Ridership

Free ridership varied by bulb type, based on estimated price elasticity and average discounts by bulb types. Table 27 provides PY18 free ridership estimates by bulb type, with free ridership estimates from PY17 and PY16 for comparison.

Table 27. Lighting Free Ridership Results

Measure Category	Bulb Type	PY18 Free Ridership	PY17 Free Ridership	PY16 Free Ridership
10W General Purpose	A-Line	33%	37%	41%
15W General Purpose				
20W General Purpose				
4W Candelabra	Specialty	58%	66%	58%
8W Globe				
12W Special Function				
10.5W Downlight	Reflector	75%	68%	35%
15W Flood (PAR 30)				
Total Program		**52%**	**49%**	**41%**

Weighted by gross savings, overall freeridership was 52% in PY18, slightly higher than 49% in PY17. The low free ridership in the A-line bulb category was significantly driven by the heavy discounts on 10-watt General Purpose bulbs sold through small chain stores. The reflector categories, which made up a higher percentage of program sales in PY18 relative to PY17, continued their trend of increasing free ridership (75% in PY18) at the program level.

Precision

To calculate the precision of the freeridership estimate, the Cadmus team used a block-bootstrap analysis to simulate uncertainty around the freeridership estimate. A bootstrap analysis resamples data randomly, with replacement, from the data used to estimate the elasticity model. The block bootstrap resamples each cross-section rather than individual observations, thereby preserving the retailer and bulb type mix used to estimate the model.

The Team resampled 1,000 times for both the chain store model and the big box store model, estimating elasticities and predicting baseline and program sales for each iteration. The Team then combined predicted baseline and program sales for both retail channels to get program sales for each iteration and calculated the freeridership for each iteration as described above.

The 95% and 5% quantiles of the resulting distribution of freeridership estimates provide the absolute precision. The relative precision is then calculated as the difference between the 95% quantile and the median divided by the mean freeridership estimate. The results are presented in Table 28.

Table 28. Relative Precision of Freeridership Estimate

	Mean Estimate	Relative Precision at 90% Confidence
Freeridership	52%	9%

Net Lighting Savings

The Cadmus Team developed the lighting sales data regression model to quantify program activity impacts on state-level LED sales. Clearly, other factors influenced LED sales, and, as discussed, the Cadmus team considered a number of demographic household characteristics and retail channel variables to capture and control for each state's unique characteristics that could potentially affect uptake of efficient lighting products. (The Market Characterization section presents these variables in greater detail.)

Once the model was defined, the Cadmus team applied the model algorithm to inputs specific to Ameren Missouri's territory to calculate the net lighting sales percentage.

The Cadmus team met with the statewide auditor on June 27, 2019 and July 9, 2019 to review the draft lighting sales model, and based on these meetings responded to all the auditor's major concerns by making a number of substantial changes from the initial model and results presented in the April 29, 2019 draft report. Key changes include:

- Model specification: The cross-validation exercise discussed in the Model Selection section was updated using a logit model, and the logit model deemed "best" via the cross-validation exercise was used to develop the NTG ratio rather than the OLS model.

- Impact of program age: In the NTG ratio calculation, the counterfactual uses "Program Age = Program Age" rather than "Program Age = Program Age – 1" so that program age has no impact on the NTG.
- Number of lamps purchased per household: Based on concern that the number of lamps per household in MO appeared high, to be conservative, the Cadmus team applied the national average number of lamps per household rather than the Missouri average to calculate NTG.

In addition to the agreed-upon changes to the sales data model, the Cadmus team updated the total number of lamps claimed by the program as well as total program spending to reflect the final values for the Lighting program.

Model Specification

The model's general form is specified below, followed by a more detailed discussion of data sources for each variable. The variable list outlined below covers the comprehensive set of variables considered by the Cadmus team. The final model, shown in Table 32, lists the set of variables ultimately selected for inclusion in the model, based on their predictive ability, statistical significance, and ability to improve the model's specification:

$$LED\ Market\ Share_i = \beta_0 + \beta_1 * \sum Program\ Intensity\ Var + \beta_2 * \sum Channel\ Var + \beta_3 * \sum Demographic\ Var + \epsilon_i$$

Where:

LED Market Share$_i$	=	Proportion of total lamp sales in state 'i' that are LED. Equal to [LED sales/total bulb sales]
β_0	=	The model intercept
β_1	=	The primary coefficients of interest. This represents the marginal effect of program intensity, or the expected increase in the market share of LEDs for each unit of additional program spending per household or year of program age
Program Intensity Variables	=	Numeric variables summarizing state-level spending and program age (Table 29 lists additional detail)
B_2 and β_3	=	Array of regression coefficients for the channel variables and demographic variables
Channel Variables	=	Numeric variables summarizing state-level retailer characteristics (additional detail is provided in Table 29)
Demographic Variables	=	Numeric variables that summarize state-level population, housing, and economic attributes in (additional detail is provided in Table 29)
ϵ_i	=	Error term

Table 29. Variable Descriptions

Type of Variable	Description
Program Intensity Variables	
Program Spending per Household	Total upstream program budget in state 'i' divided by the number of households in state 'i'.
SQRT (Program Spending per Household)	The square root of the program spending per household.
Program Age	The number of years program administrators in state 'i' have operated upstream lighting programs (CFL or LED).
Channel Variables	
Sqft NonPOS per HH_i	The average non-POS retail square footage per household in state 'i'. Equal to non-POS square footage divided by the number of households in state 'i'.
Percent Sqft $NonPOS_i$	The percentage of total retail square footage belonging to non-POS retailers in state 'i'. Equal to non-POS square footage divided by (POS sqft + non-POS sqft).
Sqft POS per HH_i	The average POS retail square footage per household in state 'i'. Equal to POS square footage divided by the number of households in state 'i'.
Demographic Variables	
Political $Index_i$	A state-level partisan voter index developed by Gallup[1] using presidential election voting results as a state-level partisan proxy. A higher than 1.0 value represents greater democratic influence and a value less than 1.0 indicates greater republican influence.
Average Electricity $Cost_I$	The state-level average residential retail rate of electricity sourced directly from the Energy Information Agency.[2]
Cost of $Living_i$	State-level cost of living indices developed by the Missouri Economic Research and Information Center.[3]
Percentage of Renters Paying $Utilities_i$	All state-level demographic and household variables were derived from the most current U.S. Census ACS.[4]
Median $Income_i$	
Percentage Owner $Occupied_i$	
Percentage of Population with College $Degree_i$	

[1] Gallup. "State of the States." news.gallup.com/poll/125066/state-states.aspx

[2] U.S. Electricity Information Association. "Electricity." eia.gov/electricity/data/state/

[3] Missouri Economic Research and Information Center. "Cost of Living Data Series 2018 Annual Average." missourieconomy.org/indicators/cost_of_living/

[4] U.S. Census Bureau. "American Fact Finder." factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t

Correlation of the Independent (Explanatory) Variables

Table 30 shows the correlation between the dependent variable (LED market share) and 12 potential channel and demographic or household variables. Ten of the variables positively correlated with the LED market share, and two negatively correlated. Correlation coefficients can range from -1 to 1, and the magnitude of the absolute value indicates the degree of correlation. This means program spending per household was the variable most correlated with LEDs' market share (that is, higher LED market shares typically occurred in states with more aggressive programs), followed closely by program age.

Table 30. Independent Variable Correlation Table

Possible Explanatory Varible	LED Market Share
Program Spending per Household	0.54
Sqft NonPOS per HH	0.03
Sqft POS per HH	-0.18
Percent Sqft NonPOS	0.17
Political Index	0.17
Median Income	0.02
Average Electricity Price	0.08
Cost of Living	0.10
Percentage of Renters Paying Utilities	-0.44
Percentage Owner Occupied	0.26
Percentage of Population with College Degree	0.08
Program Age	0.39

Table 31 (below) shows a correlation matrix among potential independent variables. While the political index and the cost of living both positively correlate with the LED market share, they highly correlate with one another (correlation coefficient=0.76).

When multiple independent variables correlating with one another are included in a model specification, a regression model will have difficulty precisely estimating either term's effect. This issue is compounded by the relatively low number of observations in the data set. Due to the complexity of the relationships and numerous options of these channel, demographic, and household characteristic variables, the Cadmus team initially developed and tested different model options, before ultimately selecting the best-fit model option.

Table 31. Covariance Table of Potential Independent Variables

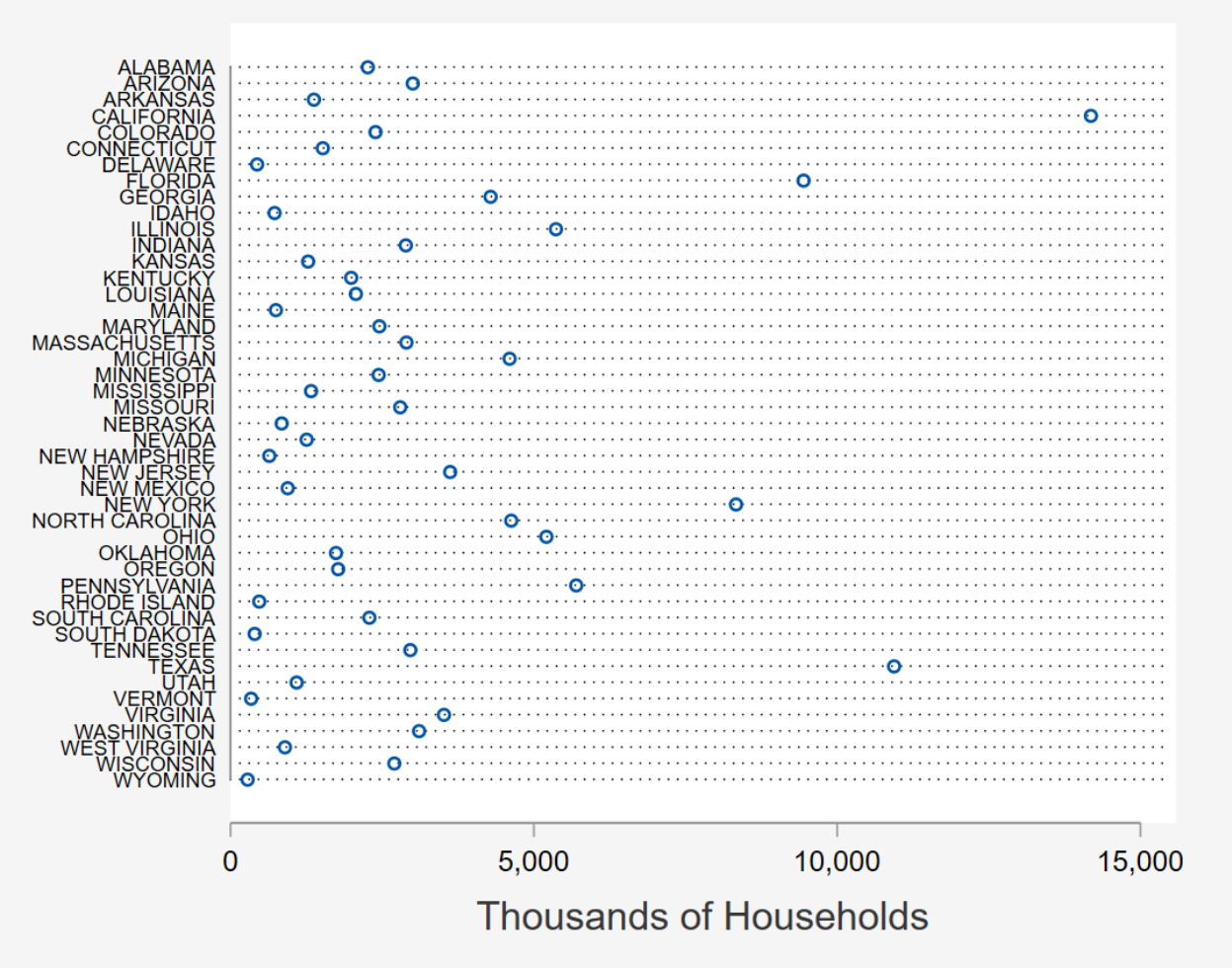
	Program Spending per HH	Sqft NonPOS per HH	Sqft POS per HH	Percent Sqft NonPOS	Political Index	Median Income	Average Electricity Price	Cost of Living	% of Renters Paying Utilities	% Owner Occupied	% of Population with College Degree	Program Age
Program Spending per Household	1.00											
Sqft NonPOS per HH	-0.18	1.00										
Sqft POS per HH	-0.48	0.07	1.00									
Percent Sqft NonPOS	0.45	0.27	-0.92	1.00								
Political Index	0.43	-0.18	-0.75	0.66	1.00							
Median Income	0.31	0.29	-0.65	0.76	0.55	1.00						
Average Electricity Price	0.48	-0.12	-0.65	0.62	0.63	0.58	1.00					
Cost of Living	0.46	-0.21	-0.79	0.72	0.76	0.70	0.85	1.00				
Percentage of Renters Paying Utilities	-0.60	0.03	0.43	-0.41	-0.31	-0.36	-0.53	-0.52	1.00			
Percentage Owner Occupied	-0.03	0.32	0.33	-0.22	-0.32	-0.26	-0.29	-0.44	-0.14	1.00		
Percentage of Population with College Degree	0.45	0.15	-0.66	0.71	0.63	0.89	0.61	0.69	-0.45	-0.19	1.00	
Program Age	0.53	-0.03	-0.65	0.63	0.56	0.56	0.67	0.72	-0.49	-0.27	0.57	1.00

Model Weighting

Another key consideration in developing the model was how to weight each of the states. Each state is a single observation in the model, but the data for that state is comprised of summarized observations from sales and panel data. Weighting each state equally would not have accounted for larger states having larger sample sizes in the panel data and bigger impacts on the lighting market as a whole. To capture these differences, the Cadmus team considered using either the number of households or total bulb sales as the weight. The Cadmus team determined that using total bulb sales as analytic weights in the model was inappropriate because sales are correlated with the dependent variable. Specifically, states with high LED market share tend to have lower total lamp sales because efficient lamps have longer measure lives than inefficient lamps so the sockets turn over less frequently. In the NCP data, the sample size was generally proportional to number of households, and large states represented a larger share of the overall U.S. lighting market than smaller states. Given the difference in panel sizes, the average lighting share value in large states was based on more measurements than small states , with a commensurate increase in aggregate measurement precision. Therefore, the Cadmus team used number of households per state as the weight.

Figure 11 shows the number of households for each of the 45 states included in the model.

Figure 11. Number of Households by State



Model Functional Form

Another critical decision in the modeling process was the selection of the model's functional form. A key input in this decision was the distribution of the dependent variable. LED market share is constrained by 0 and 1; it cannot be less than 0% and it cannot be greater than 100%. as a result, the Cadmus team utilized a functional form that imposed these limits to produce an S-curve. The fractional regression procedure used was a beta regression which used a logit function for the conditional mean.

The Cadmus team also explored transformations of independent variables, including the square root of spending as the program intensity variable. Ultimately, transformations of program spending did not improve the model fit or predictions, so the level terms were used.

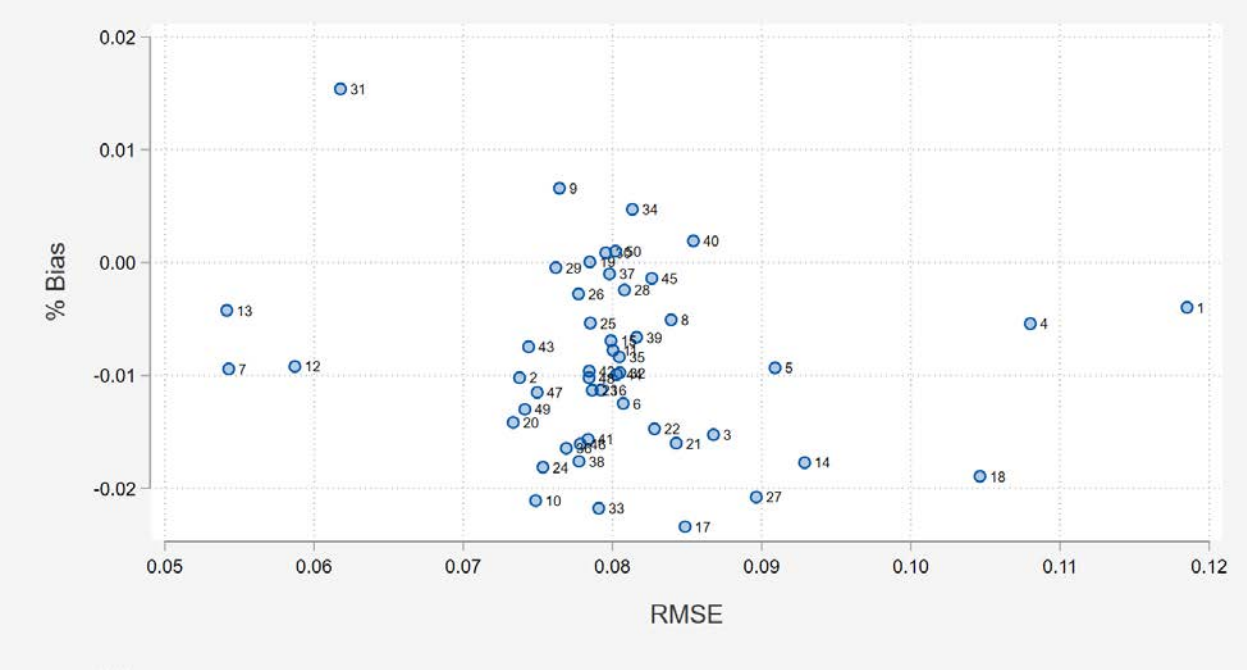
Model Selection

The final model was selected on through an empirical process known as out-of-sample testing. This process consisted of the following steps:

1. Identify a large number of candidate models with different combinations of independent variables.
2. For each model, loop through the 45 states, and estimate the frctional logit regression model holding one state out.
3. Use the model coefficients to predict the LED market share for the excluded state.
4. Store the model prediction errors and aggregate across states. Although regression is weighted, the errors are not weighted.
5. Compare the candidate models on the basis of bias and precision.
6. Identify the three models with the lowest absolute value of percent bias.
7. Of those three models, select the one with the lowest root mean square error (RMSE).

Figure 12 shows the results. Models 19, 29, and 30 had the lowest absolute values of percent bias. Of these three, model 29 had the lowest RMSE. Some of the more accurate models included LED market shares or program intensity from prior years, but these tended to have issues with negative bias.

Figure 12: Model Validation—Percent Bias vs. RMSE



Multivariate Regression Model Outputs

The regression coefficients for the program intensity variables, and the subsequent estimates of the net lighting sales percentage, proved relatively stable across a number of model specifications. The Cadmus team explored different combinations of independent variables to enter and exit the model, and, in general, the models produced similar results. Table 32 lists relevant statistics and outcomes from the final model specification.[18] For independent variables included in the model, the table includes the regression coefficient and its associated p-value. Because beta regression was used rather than OLS, the model coefficients in Table 32 cannot be interpreted in the same way that model coefficients from a linear regression model would be interpreted. The coefficient of the program spending term (0.047) implies a one dollar increase in program spending per household is associated with an increase in LED market share of approximately 1.1%.[19] The p-value of each independent variable was statistically significant. As shown, the final set of explanatory variables included program spending per household, non-POS square footage per household, program age, and the percentage of the population with a college degree.

Table 32. Model Summary Statistics (n=45 States)

Independent Variables	Model Coefficient (dy/dx at conditional mean)	P-Value of Coefficient
Intercept	0.377367	0.330
Program Spending Per Household	0.0468882	0.004
Non-POS sq ft Per Household	0.1063013	0.004
Program Age	0.0210739	0.012
Percent of Population with a College Degree	-3.367117	0.012

The negative coefficient for the percentage of the population with a college degree seemed counter-intuitive at first. The Cadmus team noticed similar coefficients when testing other demographic variables, such as the political index, median income, and cost of living. States at the upper end of the distribution of these variables tended to have the most mature and aggressive programs. The data indicated that the LED market share in these states was beginning to plateau despite high per-capita spending.

Total lighting sales per household in these states also tended to be the lowest. It may be that past program success has effectively captured many sockets with long-lasting, efficient lighting, and the remaining lighting market consists of a disproportionate number of sockets consumers wish to fill with inefficient lighting for technical or aesthetic reasons.

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[18] As noted, the Cadmus team selected to use an OLS model and weight by the number of homes for each state.

[19] The beta regression model does not assume a linear relationship between program spending and LED market share – the effect of increasing program spending per household from $1 to $2 is not the same as the effect of increasing from $10 to $11 or $20 to $21. The rate of change quoted (1.1%) represents an average effect size.

Modelling Ameren Missouri Territory

Although the regression model was estimated using state-level data, the analysis objective was to estimate net lighting sales percentage for Ameren Missouri's program. To implement net lighting sales calculations specific to Ameren Missouri, the Cadmus team customized the key calculation elements as follows:

- Program spending per household was calculated using Ameren Missouri's total spending and the number of residential customers, according to FERC Form 861[20] (n=1,053,890)
- Non-POS square footage per household was calculated specifically for Ameren's service territory
- Based on concerns raised by the state auditor that the lighting sales per household for Ameren appeared high, the lighting sales per household for Ameren service territory was assumed to equal the national average of 10.28 lamps per household. This value is lower than the average lamps per household for the state of Missouri in the national sales data, which results in a more conservative NTG estimate than using Missouri data.

The Cadmus team estimated the net lighting sales rate using a "modeled:modeled" calculation (rather than a "modeled:actual"). This means the counterfactual scenario (which can only be modeled) was compared to a *modeled* LED market share for Ameren Missouri's service territory. This also was necessary as the data set did not include an LED market share specific to Ameren Missouri's service territory.

In assessing net lighting sales, the Cadmus team created the counterfactual scenario by changing program spending from $1.27 per household (the actual amount per household that Ameren spent on the program in 2018) to $0.00 per household (i.e., as if the program did not exist at all). Program age was held constant at ten years for both the program and counterfactual runs, so has no impact on the NTG. This provides the most conservative value in terms of calculated NTG. For instance program age differences between program and counterfactual of 2 years or more accounts for market effects from earlier program years in addition to spillover. Assuming a program age difference of zero is more conservative than than the one program year difference used in the draft analysis, which already excluded market effects. Table 33 shows the net lighting sales calculations and results. The model estimated a 1.4% increase in the LED market share due to program activity, translating to a lift of 154,763LEDs. This net impact was 72.4% of the lamps claimed by the Ameren Missouri program in 2018.

[20] https://www.eia.gov/electricity/data/eia861/zip/f8612017.zip

Table 33. Ameren 2018 NTG Calculations

Parameter	Calculation Term	Value
A	Total Ameren Missouri Bulbs	10,827,745
B	Program $ per HH Actual	$1.27
C	Program $ per HH Counterfactual	$0.00
D	Program Age Actual	10
E	Program Age Counterfactual	10
F	LED Market Share Counterfactual	59.2%
G	LED Market Share Modeled	60.6%
H	LED Qty. Modeled (H=A*G)	6,559,925
I	LED Qty. Counterfactual (I= A*F)	6,405,162
J	Net LEDs Modeled (J=H-I)	154,763
K	Program LEDs	213,854
L	NTGR Modeled (L=J/K)	72.4%

Nonparticipant Spillover

Effective program marketing and outreach generates program participation *and* increases general energy-efficiency awareness among customers. Sustained utility program and general marketing can affect customers' perceptions of their energy usage, and, in some cases, motivate them to take efficiency actions outside of the utility's program. The energy savings caused by—but not rebated through—a utility's DSM activities are designated as NPSO.

During PY18, Ameren Missouri spent $726,844 to market individual residential efficiency programs (excluding the Low Income and Home Energy Report programs).[21] To understand whether these program-specific marketing efforts generated energy-efficiency improvements outside of the incentive programs, Cadmus implemented a large online survey of PY18 nonparticipating residential customers.

Compared to the PY17 version, the PY18 survey added measures from the Heating and Cooling program to the list of measures considered for NPSO. Moreover, for questions asking how respondents knew the installed product was efficient and why respondents took efficiency actions, the PY18 survey included more predefined responses for respondents to select, reducing uncertainty around the interpretation of responses.

[21] The Home Energy Report program is evaluated using billing analysis, which accounts for program savings and spillover savings. Consequently, this NPSO excludes it.

Methodology

Survey Sampling and Disposition

Similar to the approach in PY17, Cadmus administered an online survey (see Appendix F) to efficiently obtain a significant number of survey completes. The sample design relied on analysis of PY17 survey results to determine sample sizes necessary to achieve 90/10 confidence/precision in PY18 survey results.

Out of 2,431 survey respondents in PY17, 77 (3%) reported measures that qualified for NPSO. Based on this result, Cadmus estimated that 3% of all nonparticipants in the population adopted measures with ±0.58% absolute precision at 90% confidence. Additionally, the Cadmus team analyzed confidence/ precision around NPSO savings for each type of measure. The absolute precision—with 90% confidence—for each of nine qualified measure types was within ±10%. To increase the likelihood of achieving similar precision at the measure level for the PY18 survey, Cadmus estimated a sample size of approximately 2,250.

From Ameren Missouri's entire residential customer base, Cadmus selected customers who did not participate in any Ameren Missouri programs in PY17 or PY18 (including the Home Energy Report program); these 777,931 customers served as the nonparticipant survey population.[22] From this population, the evaluation team excluded customers who were contacted for the PY17 NPSO survey and randomly selected 60,000 customers to serve as the PY18 survey sample. Cadmus assumed a conservative response rate of 3.75% would achieve a quota of 2,250 completes.

Cadmus mailed postcard invitations, asking customers to enter a web address that would take them to the online survey administered through Qualtrics (an online survey software vendor). To thank customers for completing the survey, the Cadmus team entered them into a drawing for one of five $100 Visa gift cards. If customers expressed interest in completing the survey but did not have access to a computer linked with the Internet, the Cadmus team arranged for them to complete the survey over the phone with a Cadmus employee. Within a four-week fielding period, Cadmus achieved the target quota with 2,323 online and 57 phone completes.[23]

NPSO Measures

The survey asked respondents if they adopted any of 18 energy-efficiency measures offered through Ameren Missouri programs (i.e., the measures shown in Table 34). In prior evaluations, we excluded all

[22] Cadmus removed invalid or duplicate phone numbers from the sample frame as well as Home Energy Report participants.

[23] About 7% of respondents completing the survey (n=167) self-reported that they participated in an Ameren Missouri program in PY18; so were not counted as part of the 2,380 nonparticipant completes.

products in the Lighting program and most products in the Heating and Cooling program to avoid double-counting NPSO savings captured through those programs' NPSO analyses (described in those programs' reports). Because the PY18 evaluation did not conduct a separate NPSO analysis for the Heating and Cooling program (in contrast to prior evaluations), the previously excluded Heating and Cooling products (denoted by an asterisk in Table 34) were added to the list of PY18 measures.

Table 34. PY18 Measures

Like Measure	Like Measure
Room air conditioner	Heat pump water heater
Room air purifier	Learning or "smart" thermostat
Pool pump	Air-source heat pump*
Showerhead	Ductless or mini-split heat pump*
Kitchen faucet aerator	Duel-fuel heat pump*
Bathroom faucet aerator	Ground-source or geothermal heat pump*
Hot water pipe insulation	Central air conditioner*
Furnace fan with ECM (Electronically Commutated Motor)	Air conditioner tune-up
Filter whistle	Heat pump tune up

Customers also could adopt energy-efficiency measures or perform energy-saving actions outside of Ameren Missouri's PY18 program offerings (i.e., "non-like" NPSO). These were not considered as part of the NPSO estimate.[24]

NPSO Qualification Criteria

To confirm a relationship between Ameren Missouri's energy efficiency programs and measures adopted by nonparticipants, Cadmus created a set of selection criteria and operationalized these into survey questions. To qualify for NPSO savings, respondents had to meet all following criteria (see Appendix C) for the NPSO qualification flow charts):

a) Familiarity with at least one Ameren Missouri program, rebate, or discount.

b) At least one element of Ameren Missouri's program marketing and outreach motivated them to adopt the measure.

c) They had a valid reason for considering the adopted measure energy-efficient.

d) They had not received a rebate from Ameren Missouri, had not tried to receive a rebate from Ameren Missouri, and stated a valid reason for not applying for an Ameren Missouri measure rebate.

e) They had a valid reason for deciding to install the measure.

[24] In PY16, the Cadmus team estimated that non-like NPSO savings equated to 15.1% of the total portfolio evaluated savings. However, in subsequent discussions with stakeholders, Ameren Missouri agreed not to count these savings toward overall spillover estimates in PY17 or future years.

f) The adopted measure generated electric savings, not gas savings.

For criterion a, respondents had to have seen or heard of Ameren Missouri's energy efficiency programs or be aware that Ameren Missouri offered rebates and discounts for energy-saving equipment in customers' homes.

For criterion b, the Cadmus team asked respondents to rate the importance of several Ameren Missouri program marketing and outreach elements (shown in Table 35) in motivating them to adopt the measure, rating these "very important," "important," "not important," or "not important at all." For measures, the measure in question met criterion b if the respondent found at least one element "very important" or "important" in deciding to adopt the measure.

Table 35. Ameren Missouri Marketing and Outreach Elements for Criterion B

Statement
Information about energy savings from Ameren Missouri's marketing or bill-inserts
Ameren Missouri's marketing information from a contractor or retailer
Information from colleagues or friends who installed energy-efficient equipment and received a rebate from Ameren Missouri
If applicable, past participation in an Ameren Missouri rebate program
If applicable, information from a home energy assessment conducted through Ameren Missouri

Criterion c helped ensure that measures actually generated energy savings. For all measures except air conditioning and heat pump tune ups, the Cadmus team asked respondents how they knew their product was energy-efficient. Responses passing criterion c included: "It's ENERGY STAR rated" or "the retailer/dealer/contractor told me it was." Responses such as "personal knowledge" or "new unit" did not pass the criterion.

The Cadmus team asked whether respondents received a rebate from Ameren Missouri (to double-check that respondents truly did not participate in the program). The Cadmus team then asked why respondents or their contractor did not apply for a rebate through Ameren Missouri. If respondents reported that they applied for a rebate but did not receive it or that their product or tune up did not qualify, their adopted measure did not pass criterion d. Responses such as "did not know about rebate" or "not worth the trouble" passed the criterion.

For criterion e, the Cadmus team asked respondents why they decided to adopt the measure. If the response did not relate to saving energy or saving money, the measure did not pass criterion e. For example, one respondent reported installing a "learning or 'smart' thermostat" because it could be "[controlled] remotely." As this response did not relate to energy efficiency, the measure did not qualify as NPSO.

As the PY18 evaluation covered only electric savings generated by Ameren Missouri's programs, the Cadmus team asked respondents for their water heater and heating system fuel types. Reported

measures with water heating and heating end uses satisfied criterion f if the measures had a corresponding electric water heater or electric heat.

Results

Of 2,380 verified nonparticipant respondents, 29 respondents adopted a total of 36 measures that were not incentivized and passed all six NPSO criteria (see Appendix D). None of these 29 respondents received an incentive from Ameren Missouri for any measure. They were influenced by Ameren Missouri program marketing and outreach and adopted NPSO measures on their own.

NPSO Measures

Table 36 shows measures and gross evaluated kWh savings attributed to Ameren Missouri, achieving average savings of 242 kWh per measure (Variable A).

Table 36. PY18 NPSO Response Summary

Individual Reported Measures	Importance of Ameren Missouri Influence on Adoption	Measure Savings (kWh)*	Allocated Savings	Quantity	Total Allocated kWh Savings	Avg kWh Per Spillover Measure
Bathroom faucet aerator	Somewhat	36	50%	2	36	Variable A
Bathroom faucet aerator	Very	36	100%	2	72	
Central air conditioner	Somewhat	321	50%	3	482	
Central air conditioner	Very	321	100%	2	642	
Furnace fan with ECM (Electronically Commutated Motor)	Very	574	100%	1	574	
Hot water pipe insulation	Very	15	100%	8	120	
Kitchen faucet aerator	Somewhat	171	50%	1	86	
Kitchen faucet aerator	Very	171	100%	1	171	
Learning or "smart" thermostat	Somewhat	326	50%	3	488	
Pool pump	Very	2,029	100%	1	2,029	
Room air conditioner	Very	50	100%	1	50	
Room air purifier	Somewhat	608	50%	2	608	
Room air purifier	Very	608	100%	1	608	
Showerhead	Somewhat	276	50%	3	414	
Showerhead	Very	276	100%	1	276	
Air conditioner tune up	Somewhat	244	50%	3	365	
Air conditioner tune up	Very	244	100%	7	1,705	
Total (n=36)					**8,726**	**242**

NPSO Confidence Precision Analysis

As shown in Table 37, the absolute precision—with 90% confidence—for nine of 11 qualified measure types was within ±10%. With 90% confidence. The absolute precision for central air conditioners and for

air conditioner tune-ups was ±12% and ±15%, respectively. For some measure types where the percentage of respondents adopting the measure was 3% or less, Cadmus could not accurately estimate the incidence of these measures within the population. However, we are confident with the proportion of nonparticipants reporting some type of measure (1.22% or 29/2,380), which has an absolute precision of ±0.37% with 90% confidence.

Table 37. PY18 Confidence/Precision Results for Measures

Like Measure	Number of respondents	Percentage of respondents	Absolute Precision with 90% confidence
Bathroom faucet aerator	2	7%	8%
Central air conditioner	5	17%	12%
Furnace fan with ECM (Electronically Commutated Motor)	1	3%	6%
Hot water pipe insulation for your hot water heater	2	7%	8%
Kitchen faucet aerator	2	7%	8%
Learning or "smart" thermostat	3	10%	10%
Pool pump	1	3%	6%
Room air conditioner	1	3%	6%
Room air purifier	3	10%	10%
Showerhead	3	10%	10%
Air conditioner Tune-Up	10	34%	15%
Total of Respondents Who Reported Measures	**29**	**1.22%**	**0.37%**

*Note that 1.22% is the proportion of all survey respondents (n = 2,380) who reported measures, whereas the proportions for the measure types are out of the respondents who reported measures (n = 29).

NPSO Extrapolation to Nonparticipant Population

To determine total NPSO generated by Ameren Missouri's marketing in PY18, Cadmus extrapolated like NPSO savings per measure (Table 36) to the entire PY18 residential nonparticipant population. Table 38 presents the NPSO analysis, resulting in NPSO total evaluated savings of 2,852 MWh portfolio level.

Table 38. PY18 NPSO Analysis

Variable	Metric	Value	Source
A	Average kWh Savings per Measure	218	Survey Data; PY18 Impact Evaluation
B	Number of Measures	36	Survey Data
C	Number of Nonparticipant Respondents	2,380	Survey Disposition
D	Total Residential Population Minus PY18 Participants	777,931	Customer Database
E	Total NPSO MWh Savings Applied to Population	2,852	(((B ÷ C) × A) × D)/1000

NPSO savings in PY18 (2,852 MWh) are less than savings reported in PY17 (6,212 MWh). This is primarily due to the average measure per nonparticipant decreased from 0.035 in PY17 to 0.015 in PY18.

NPSO Allocation to Individual Programs

The observed 2,852 MWh of NPSO equates to 3.6% of the total portfolio evaluated gross savings. As in previous years, the Cadmus team allocated the NPSO based on marketing budget and savings for each program. This approach remained consistent with the theory that NPSO resulted from the cumulative effects of energy conservation marketing, program-specific marketing, and program activity over a period—not necessarily by a single, program-specific marketing effort. In addition, while NPSO was most commonly associated with mass media marketing campaigns, the scale of program activity also counted as a factor.

For example, even without a significant marketing campaign, a program's size can drive NPSO through word-of-mouth and in-store program messaging. The Cadmus team found this approach accurately reflected and attributed NSPO to programs, ensuring those total costs (including marketing) and total benefits (net savings including NPSO) were properly accounted for when assessing overall program cost-effectiveness.

The allocation approach is based on the combined savings and marketing budget and illustrated in Table 39.

Table 39. PY18 Combined Savings and Marketing Allocation

Program	Program *Ex Post* Gross Savings (MWh)	Percentage of Portfolio Savings	Program Marketing	Percentage of Total Marketing	Combined Savings & Marketing (AxB)	Percentage of Combined Savings & Marketing
Lighting	**8,383**	**11.15%**	**$40,316**	**5.55%**	**0.62%**	**0.95%**
Efficient Products	4,270	5.68%	$18,434	2.54%	0.14%	0.22%
Heating and Cooling	54,444	72.42%	$643,897	88.59%	64.16%	98.65%
Smart Thermostats	2,163	2.88%	$21,574	2.97%	0.09%	0.13%
Energy Efficiency Kits	5,915	7.87%	$2,624	0.36%	0.03%	0.04%
Total	**75,175**	**100%**	**$726,844**	**100%**	**65%**	**100%**

Using the allocation method based on marketing budget and program size, the Cadmus team distributed the portfolio-level result of 2,852 MWh NPSO to each of Ameren Missouri's residential programs. As shown in Table 40, the results of this approach reflected each program's impact on the nonparticipant population, proxied by the combined effect of marketing expenditures and program savings. The Lighting program achieved 0.95% of the total NPSO, at about 27 MWh.

Table 40. PY18 NPSO by Program

Program	Program Gross Savings (MWh)	Total NPSO (MWH)	Percentage of Combined Savings/ Marketing	Program-Specific NPSO (MWh)
Lighting	**8,383**	2,852	**0.95%**	**27**
Efficient Products	4,270		0.22%	6
Heating and Cooling	54,444		98.65%	2,814
Smart Thermostats	2,163		0.13%	4
Energy Efficiency Kits	5,915		0.04%	1
Total	**75,175**		**100%**	**2,852**

NTG Summary

Table 41 shows PY18 program net energy savings impacts.

Table 41. PY18 Net Impact Results Summary

Measure Category	*Ex Post* Gross Savings (MWh/yr)	Free Ridership	Spillover	NTG	Net Energy (MWh/yr)	Net Demand (kW/yr)
10W General Purpose	1,504	12%	25%	113%	1,700	256
15W General Purpose	964	42%	25%	83%	797	120
20W General Purpose	1,644	47%	25%	77%	1,272	191
4W Candelabra	626	61%	25%	64%	400	60
8W Globe	369	53%	25%	71%	263	40
12W Special Function	46	58%	25%	67%	31	5
10.5W Downlight	1,246	68%	25%	57%	709	107
15W Flood (PAR 30)	1,984	79%	25%	45%	896	135
NPSO – First Year					**27**	**15**
NPSO – 2023						**15**
Total – First Year	**8,383**				**6,094**	**928**
Total – 2023						**928**

Figure 13 and Figure 14 compares the Lighting program's energy and demand savings summaries—MPSC-approved target, ex post gross, and ex post net—in PY16, PY17, and PY18 (note that there was no demand savings target in PY18).

Figure 13. PY16-PY18 Lighting Program Energy Savings Summary

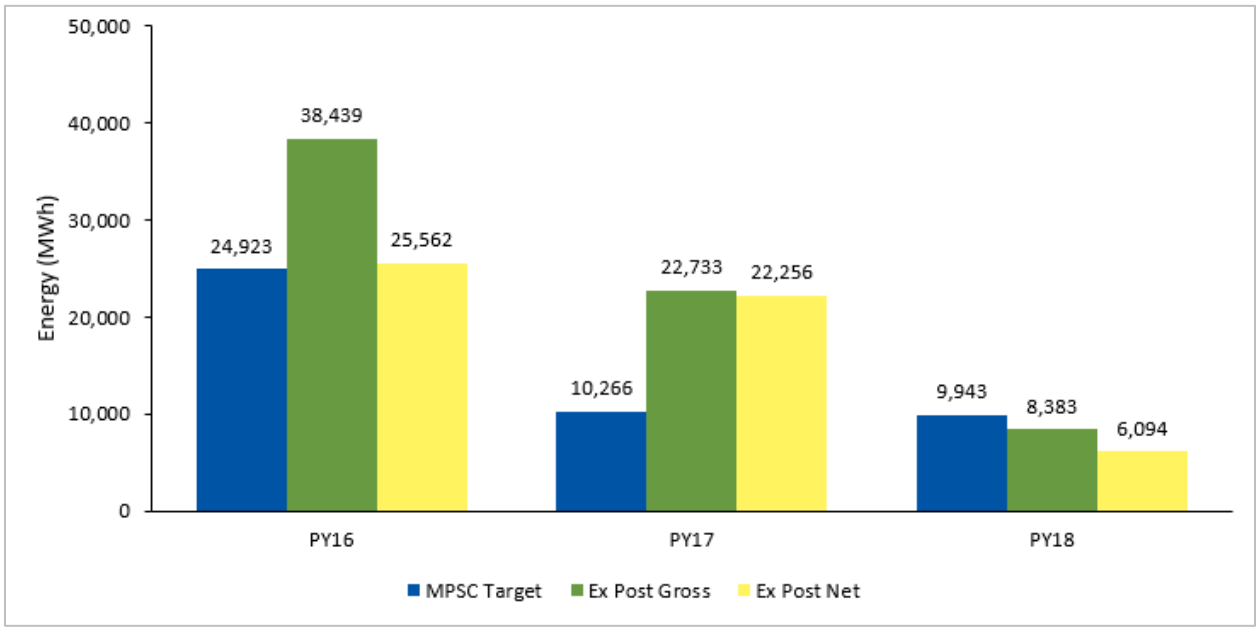
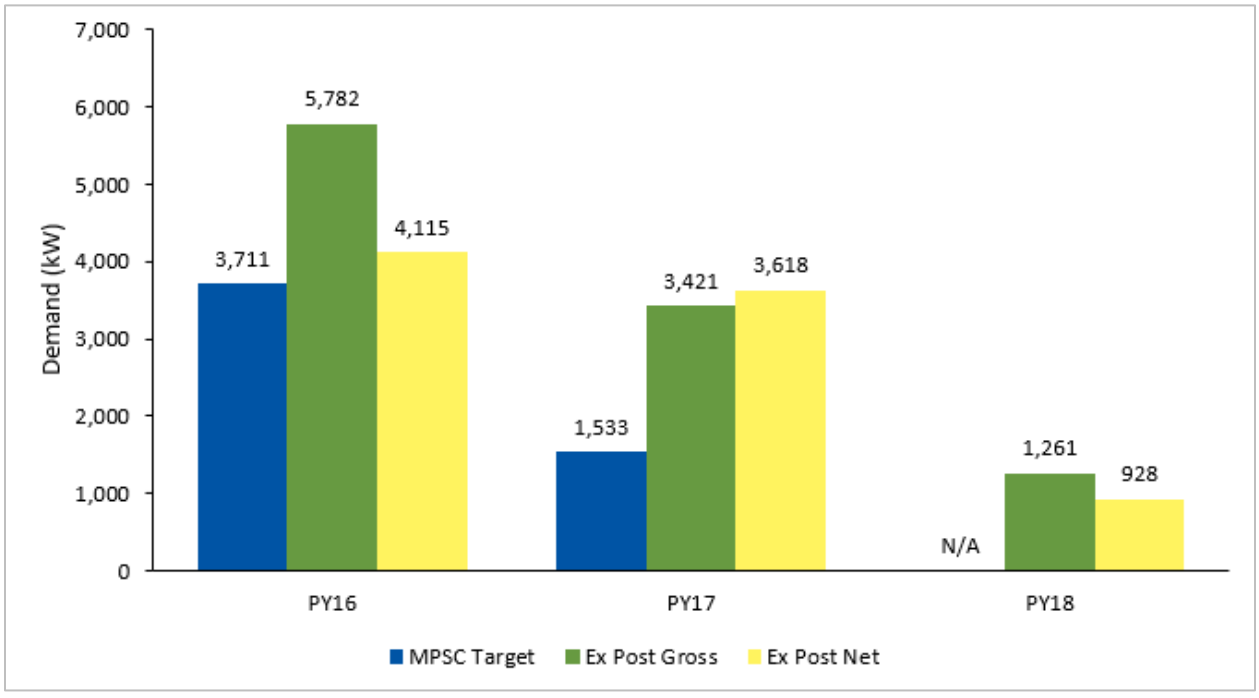


Figure 14. PY16-PY18 Lighting Program Demand Savings Summary



Key Progress Indicators and Benchmarking

The Cadmus team continued to track the following key progress indicators for the Lighting program in PY18:

- Number of program bulbs sold
- Program net electric savings (excluding NPSO)
- Free ridership by measure category
- Net electric savings (kWh) per bulb (not accounting for NPSO)

Table 42 shows evaluated results for each program-level indicator in PY18. For comparison, the table includes prior year results.

Table 42. Lighting Program-level Key Progress Indicators

Key Progress Indicators	PY18	PY17	PY16
Number of program bulbs sold	213,854	650,344	917,013
Program-year electric savings (net MWh)	6,094	22,256	25,562
Free ridership	52%	49%	41%

Table 43 shows the PY18 evaluated results for the measure-level net savings per unit, with prior year values for comparison. Changes in per unit savings mostly resulted from changes in the distribution of different, specific models within the measure category.

Table 43. Net Electricity Savings by Measure Category

Measure Category	Net Electricity Savings Per Unit (kWh)		
	PY18	*PY17*	*PY16*
10W General Purpose	30.0	*33.3*	*22.2*
15W General Purpose	28.0	*43.0*	*29.2*
20W General Purpose	36.0	*58.9*	*39.3*
4W Candelabra	17.8	*27.6*	*18.1*
8W Globe	21.0	*26.4*	*18.2*
12W Special Function	34.2	*38.9*	*33.7*
10.5W Downlight	18.8	*20.5*	*27.2*
15W Flood (PAR 30)	17.3	*37.2*	*38.4*

The Cadmus team also updated the benchmarking analysis for several key program metrics related to free ridership (see Appendix B for sources):

- Free ridership by bulb type
- Average incentive levels
- Incentives as a share of retail price

Table 44 compares free ridership estimates specific to LED sales for several programs from 2015 to 2016, all of which applied a demand elasticity model. Ameren Missouri's LED free ridership rate has

climbed over time and was higher in 2018 than it was for similar programs in 2015 and 2016, when LEDs were first being introduced. The free ridership increase was expected as LEDs have become more common in the marketplace, there are more non-program LED options at similar prices to program bulbs, and the program reduced incentive levels to maintain participation levels within the allocated budget. Although the free ridership rate increased, the program exceeded its anticipated Cycle 2 savings.

Table 44. Elasticity Model Free Ridership Estimates for LEDs

Evaluation	Free Ridership
Ameren Missouri (2018)	**52%**
Ameren Missouri (2017)	**49%**
Ameren Missouri (2016)	**41%**
PPL Electric (2016)	39%
Focus on Energy Wisconsin (2016)	28%
KCPL (2016)	14%
Rocky Mountain Power (Utah) 2015-2016	24%
Ameren Missouri – LEDs only (2015)	**28%**

Table 45 shows the average incentive amount per LED, broken out by bulb type (where available). In 2015 and 2016, average incentives ranged from $2.26 per bulb to as much as $6.62 per bulb. By PY18, Ameren Missouri's incentives were well below the incentive levels of two or three years ago, reflecting primarily the overall drop in LED prices.

Table 45. Average Incentive Levels Per Bulb

State or Utility	Retail Channel	Standard LEDs	Decorative LED	Reflector LEDs
Ameren Missouri (2018)	**All**	**$1.64**	**$1.65**	**$2.24**
Ameren Missouri (2017)	**All**	**$1.67**	**$2.48**	**$3.31**
Ameren Missouri (2016)	**All**	**$2.26**	**$4.13**	**$3.86**
Ameren Missouri (2015)	**All**	**N/A**	**$5.00**	**$5.28**
IPL (2015)	All	$2.31	$2.20	$2.48
NIPSCO (2015)	All	$3.59	$3.83	$3.83
SWEPCO (2015)	DIY	$2.91	$3.00	$4.29
	Mass Market	$2.92	$3.00	$3.00
Vectren Indiana (2015)	All	$3.50	$3.50	$3.50
Entergy Arkansas (2015)	DIY	$3.62	$3.16	$5.33
	Discount	$4.68	$3.71	$6.23
	Mass Market	$3.84	$3.46	$4.98
PPL Electric (2015)	All	$4.81	$6.62	$6.62

As free ridership closely correlates to the program discount as a percentage of retail price, net of free ridership tends to increase as discounts increase, as a percentage of the retail price. Table 46 compares the incentives as a share of retail prices for different utilities, bulb types, and retail channels, and for Ameren Missouri's Lighting Program in PY16, PY17, and PY18. Although the relationship is not perfectly linear, utilities with incentives that function as a low percentage of the retail price tend to have lower

net of free ridership rates. Ameren Missouri's average incentive as a percentage of the retail price and as a net of free ridership percentage have stayed relatively stable over the three years. The incentive has increased slightly as a percentage of the retail cost, and the net of free ridership rate has decreased slightly.

Table 46. PY18 Benchmarking Results: Incentives as Share of Retail Price

State or Utility	Bulb Type	Incentive as a Share of Retail Price (Avg)	Net of Free Ridership
Ameren Missouri 2018	**LED**	**46%**	**48%**
Ameren Missouri 2017	**LED**	**41%**	**51%**
Ameren Missouri 2016	**LED**	**41%**	**59%**
SWEPCO 2015	LED	27%	27%
Entergy Arkansas 2015	LED	42%	52%
Entergy Arkansas 2015	Standard CFL	57%	80%
SWEPCO 2015	CFL	58%	55%
PPL 2015	LED	N/A	61%

Cost-Effectiveness Findings

The Cadmus Team assessed cost-effectiveness using the following five tests, as defined by the California Standard Practice Manual (except where modified as noted in this report):[25]

- Total Resource Cost Test (TRC)
- Utility Cost Test (UCT)
- Ratepayer Impact Measure Test (RIM)
- Participant Cost Test (PART)
- Societal Cost Test (SCT)

DSMore takes hourly prices and hourly energy savings from specific measures installed through the Lighting program and correlates them to 33 years of historic weather data. Using long-term weather ensures that the model captures low-probability, high-consequence weather events, and appropriately values these. As a result, the model produces an accurate evaluation of the demand-side efficiency measure relative to other alternative supply options.

Key assumptions include the following:

- Discount Rate of 6.46% for all tests except the SCT, which used a 3.0% discount rate
- Line Losses of 5.72% for residential customers and 4.84% for business customers
- Summer peak occurring during the 16th hour of a July weekday, on average
- Avoided costs from the 2017 IRP, filed October 1, 2017
- Escalation rates for different costs occurring at the component level, with separate escalation rates for fuel, capacity, generation, T&D, and customer rates carried out over 25 years

The Cadmus team used evaluation results as model inputs (e.g., PY18-specific Lighting program participation counts, per-unit gross savings, NTG, NPSO). All PY18 inputs were entered into the model as "Year 3" values, and the model discounted all costs back to 2016 values; so results are comparable across program years.

The Cadmus team used measure-specific load shapes provided by Ameren Missouri to inform the model when to apply savings for each measure over any given day. This ensured that the load shape for an end use matched the system peak impacts of that end use, and provided the correct summer coincident savings. The Cadmus team used measure lifetime assumptions and incremental costs from the Ameren Missouri TRM or from the original Batch Tool provided with the Cycle 2 MEEIA filing.

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[25] *California Standard Practice Manual: Economic Analysis of Demand-Side Programs and Projects*. October 2001.

The model also applied actual PY18 Ameren Missouri program costs. For the PY18 Lighting program, Ameren Missouri's costs included direct expenses for Lighting program administration and incentives, in addition to a percentage of portfolio-level costs. Portfolio costs—including research and development, EM&V, Educational Outreach, Portfolio Administration, Potential Study, and Data Tracking—were allocated to each program based on the relative program benefits. The Cadmus team used cost data through March 2019, as provided by Ameren Missouri.

Because the incremental costs of LEDs are negative (LEDs save money over their lifetime, relative to inefficient alternatives), the Cadmus team incorporated the incentives for lighting measures as a miscellaneous administrative cost and set the incremental costs to 0. For all programs, the team included NPSO savings on a measure-by-measure basis (instead of as a percentage incorporated in the NTG) which allowed DSMore to apply the correct load shape, incremental cost, and useful life to each spillover measure.

Table 47 summarizes cost-effectiveness findings by test. Any benefit-cost score above 1.0 passed the test as cost-effective. As shown, the Lighting program passed the UCT, TRC, and Societal tests. Because the lifetime costs for participants are actually negative, the PART does not apply to this program.

Table 47. Cost-Effectiveness Results (PY18)

Program	UCT	TRC	RIM	SCT	PART
Lighting					N/A

List of Appendices

Following are the Appendices for the Lighting program evaluation.

Appendix A. End-Use Load Shapes and Coincidence Factors

Appendix E

End-Use Category Energy Load Shapes

% Energy by Month

	Residential End-Use Category Load Shape								
Month	**Building Shell**	**Cooling**	**Freezer**	**HVAC**	**Lighting**	**Miscellaneous**	**Pool Spa**	**Refrigeration**	**Water Heating**
January	11.1297%	0.1200%	7.9579%	11.1297%	10.1182%	8.4893%	8.6451%	7.7053%	10.3527%
February	9.3077%	0.1100%	7.2518%	9.3077%	8.8441%	7.7366%	7.1145%	7.2169%	9.0720%
March	7.0042%	0.3130%	8.1080%	7.0042%	9.2879%	8.4863%	8.6052%	8.0272%	9.5543%
April	3.7116%	1.5047%	7.9918%	3.7116%	8.4645%	8.2144%	8.0702%	7.8752%	8.4799%
May	4.0888%	6.5410%	8.4083%	4.0888%	7.9393%	8.4847%	8.6052%	8.5646%	8.3600%
June	10.3973%	21.0823%	8.5730%	10.3973%	6.8508%	8.2122%	8.0702%	8.9112%	7.7065%
July	14.0100%	28.4780%	9.6095%	14.0100%	6.7864%	8.4883%	8.6451%	9.4239%	6.7712%
August	13.3207%	27.0766%	9.6095%	13.3207%	7.0565%	8.4840%	8.5653%	9.4212%	6.3688%
September	6.6759%	12.6605%	8.4277%	6.6759%	7.3792%	8.2136%	8.3032%	8.4971%	6.9373%
October	3.7011%	1.8472%	8.2582%	3.7011%	8.4539%	8.4869%	8.6052%	8.5653%	7.9644%
November	5.9593%	0.1444%	7.8465%	5.9593%	8.9880%	8.2122%	8.1088%	7.8717%	8.4752%
December	10.6937%	0.1222%	7.9579%	10.6937%	9.8312%	8.4915%	8.6619%	7.9204%	9.9577%

End-Use Category Energy to Coincident Peak Demand Factors

	Building Shell	**Cooling**	**Freezer**	**HVAC**	**Lighting**	**Miscellaneous**	**Pool Spa**	**Refrigeration**	**Water Heating**
	0.0004660805	0.0009474181	0.0001685722	0.0004660805	0.0001492529	0.0001148238	0.0002354459	0.0001285253	0.0000887318

Source: Ameren Missouri 2016-2018 Energy Efficiency Plan. MPSC file number EO-2015-0055 Appendix E

Appendix B. Benchmarking Sources

Cadmus. *Focus on Energy Calendar Year 2016 Evaluation Report, Volume II*. Presented to Public Service Commission of Wisconsin, 2017.

Cadmus. *2015-2016 Utah Home Energy Savings Program Evaluation.* Presented to Rocky Mountain Power. 2017.

Cadmus. *2015 Demand-side Management Portfolio Evaluation Report*. Presented to Indianapolis Power and Light. 2016

Cadmus. *2015 Demand-side Management Portfolio Evaluation Report*. Presented to Vectren Energy Delivery of Indiana. 2016.

Cadmus. *2015 Demand-side Management Programs Evaluation Report.* Presented to NIPSCO. 2016.

Cadmus. *Annual Report to the Pennsylvania Public Utility Commission, Program Year 7.* Presented to PPL Electric Utilities. 2017

Cadmus. *Annual Report to the Pennsylvania Public Utility Commission, Program Year 6*. Presented to PPL Electric Utilities. 2016

Cadmus. *Energy Efficiency Portfolio Evaluation Report 2015 Program Year*. Presented to Southwestern Electric Power Company. 2016.

Cadmus. *Entergy Final Energy Efficiency Portfolio Evaluation Report 2015 Program Year*. Prepared for Entergy Arkansas, Inc. 2016.

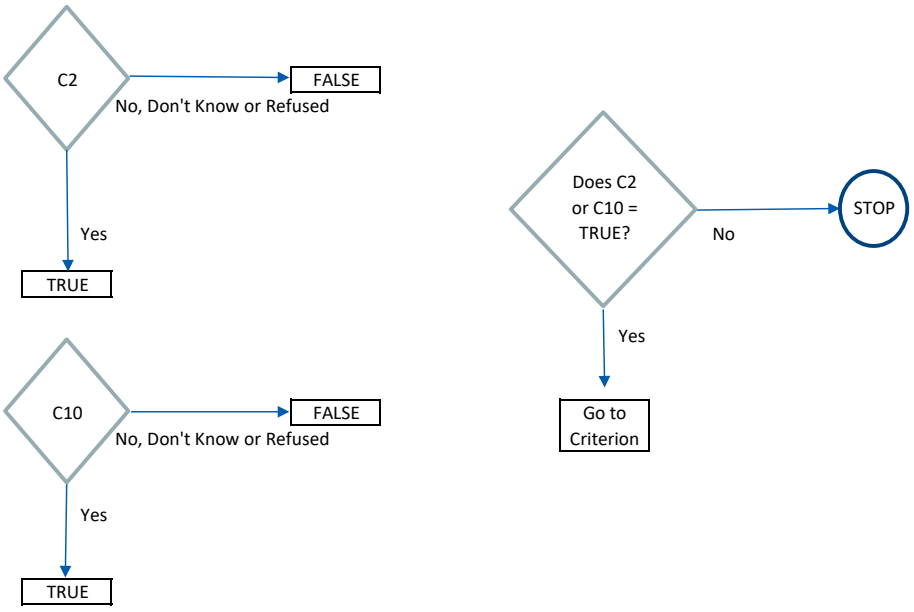
Navigant. *GMO Evaluation, Measurement, and Verification Report: Program Year 2016*. Presented to KCP&L Greater Missouri Operations. 2017.

Appendix C. Nonparticipant Spillover Qualification Flow Charts

FLOWCHARTS FOR DETERMINING LIKE NPSO

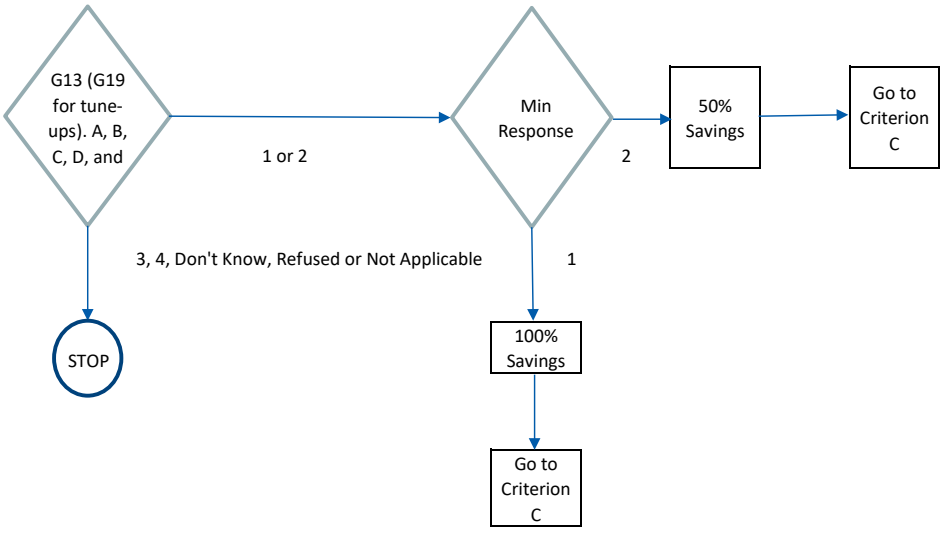
Criterion A: Familiarity with at least one Ameren Missouri program, rebate, or discount

C2. Have you ever seen or heard of the Ameren Missouri's energy efficiency programs?
C10. Are you aware that Ameren Missouri offers rebates and discounts for energy-saving equipment in your home?



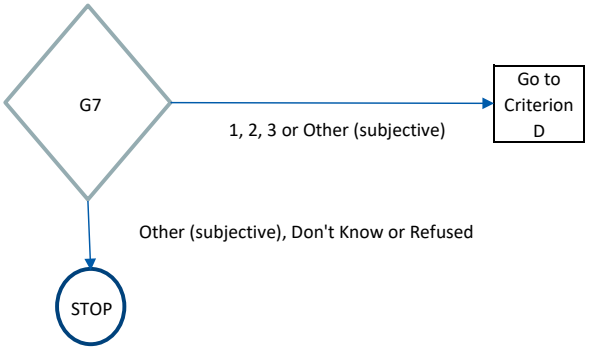
Criterion B: At least one element of Ameren Missouri's program marketing and outreach motivated them to adopt the measure

G13 (G19 for tune-ups). On a 1 to 4 scale, with 1 meaning "very important", and 4 meaning "not at all important", how important was each of the following elements in your decision to purchase and install the measure?
A. Information about energy savings from Ameren Missouri's marketing or bill insert
B. Ameren Missouri's marketing information from a contractor or retailer
C. Information from colleagues or friends who installed energy efficient equipment and received a rebate from Ameren Missouri
D. Past participation in an Ameren Missouri energy efficiency program
E. Information from the energy assessment conducted at your home through Ameren Missouri



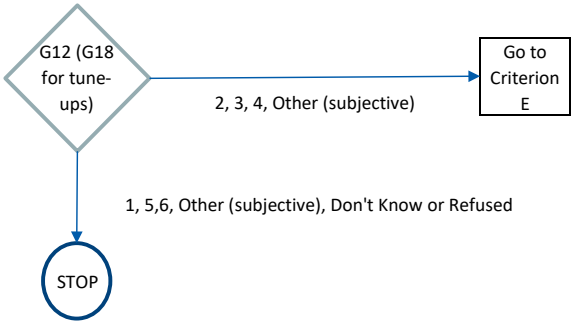
Criterion C: They had a valid reason for considering the adopted measure energy efficient (not for tune-ups)

G7. How do you know the measure is energy efficient?
1 = It's ENERGY STAR-certified, 2 = The retailer/dealer/contractor told me it was, 3 = Information about the product from packaging, websites, etc., 4 = Other (please specify)



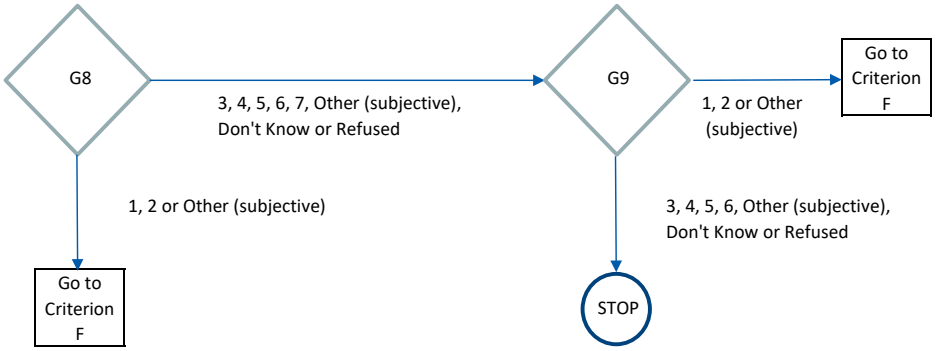
Criterion D: They had not received a rebate from Ameren Missouri, had not tried to receive a rebate from Ameren Missouri, and stated a valid reason for not applying for an Ameren Missouri measure rebate.

G12 (G18 for tune-ups). Why didn't you or your contractor apply for a rebate through Ameren Missouri for the measure?
1 = I am still planning to apply, 2 = It was confusing, 3 = Just forgot about it, 4 = I wasn't sure my equipment qualified, 5 = I wanted a different model that did not qualify, 6 = I applied but I did not receive a rebate, 7 = Other (please specify)

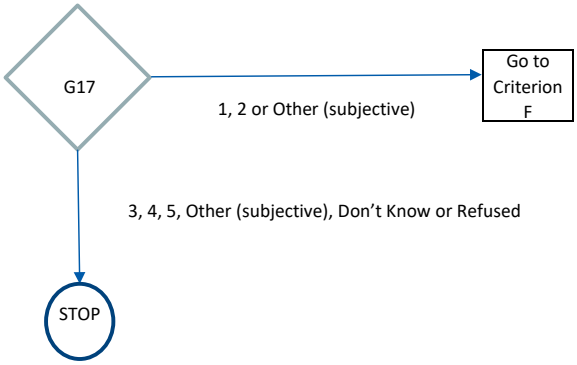


Criterion E: They had a valid reason for deciding to install the measure

G8. Which of the following reasons best describe why you decided to install the measure?
1 = To save energy, 2 = To save money, 3 = To replace failing equipment, 4 = Needed to replace anyway, 5 = Liked the style, 6 = Was ready to update,
G9. Which of the following reasons best describe why you chose an energy efficient version of the measure?
1 = To save energy, 2 = To save money, 3 = Liked the style, 4 = It had other features that I liked, 5 = It was the cheapest product available, 6 = It was the only option available, 7 = Other (please specify)

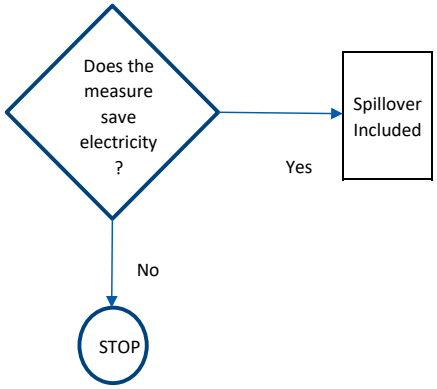


G17 (for tune-ups). Which of the following reasons best describe why you decided to install have the tune-up?
1 = To save energy, 2 = To save money, 3 = To improve home comfort, 4 = It was part of routine maintenance, 5 = To make repairs or replacements, 6 = Other (please specify)



Criterion F: The adopted measure generated electric savings, not gas savings

F1. What type of heating equipment do you have in your home?
F4. Is your home heating electric or gas?
G1. Is your hot water heater electric or gas?



Appendix D. Nonparticipant Spillover Data

Measure Information				Criterion A: Familiarity with at least one Ameren Missouri program, rebate, or discount			Criterion B: At least one element of Ameren's program marketing and outreach motivated them to adopt the measure								Criterion C: They had a valid reason for considering the adopted measure energy efficient		Criterion D: They had not received a rebate from Ameren, and had not already tried to receive a rebate from Ameren, and they stated a valid reason for not applying for an Ameren rebate			Criterion E: They had a valid reason for deciding to install the measure			Criterion F: The adopted measure generated electric savings, not gas savings				Meeting all criteria	
Account	Cadmus Disposition	Measure	Measure Number	C2. Have you ever seen or heard of Ameren Missouri's energy efficiency programs?	C10. Are you aware that Ameren Missouri offers rebates and discounts for energy-saving equipment in your home ?	Criterion A met? (Yes to C2 or C10)	a) Information about energy savings from Ameren Missouri's marking or bill insert	b) Ameren Missouri's marketing information from a contractor or retailer	c) Information from colleagues or friends who installed energy efficient equipment and received a rebate from Ameren Missouri	d) Past participation in an Ameren Missouri energy efficiency program	e) Information from the energy assessment conducted at your home through Ameren Missouri	Criterion B met for 50% savings? (Max rating was 2)	Criterion B met for 100% savings? (Max rating was 1)	C7. How do you know the [measure] is energy efficient?	Criterion C met? (qualitative assessment)	G10. Did you receive a rebate, discount, or tax credit for installing the [measure]?	G11. Did you get a rebate from Ameren Missouri?	G12. Why didn't you or your contractor apply for a rebate through Ameren Missouri for the [measure]?	Criterion D met? (qualitative assessment)	G8. Which of the following reasons best describe why you decided to install a [measure]?	Which of the following reasons best describe why you chose an energy efficient version of a [measure]?	Criterion E met? (qualitative assessment)	Cooling System	Heating System	Water Heating Fuel	Criterion F met? (depends on the measure)	Criterion B met for 50% savings? (Max rating was 2)	Criterion B met for 100% savings? (Max rating was 1)	
GP220	Eligible Complete	Bathroom faucet aerator	19	Yes	No	TRUE	1	1	1	N	1	FALSE	TRUE	Information about the product from packaging, websites, etc.	TRUE	No	0	Didn't know you had rebate	TRUE	To replace failing equipment	To save energy	TRUE	Window or wall air conditioner	Electric furnace	Electric	TRUE	FALSE	TRUE	
HQ319	Eligible Complete	Room air purifier	2	Yes	Yes	TRUE	1	1	2	1	2	FALSE	TRUE	It's a™s ENERGY STAR-certified	TRUE	No	0	Just forgot about it	TRUE	To improve comfort	health	FALSE	Central air conditioner	Gas furnace/boiler	Gas	TRUE	FALSE	FALSE	
HQ319	Eligible Complete	Furnace fan with ECM (Electronically Commutated Motor)	9	Yes	Yes	TRUE	1	2	3	1	2	FALSE	TRUE	It's a™s ENERGY STAR-certified	TRUE	Yes	Yes	0	FALSE	To replace failing equioment	To save enerev	TRUE	Central air conditioner	Gas furnace/boiler	Gas	TRUE	FALSE	FALSE	
HQ319	Eligible Complete	Learning or "smart" thermostat	12	Yes	Yes	TRUE	1	2	3	2	2	FALSE	TRUE	The retailer/dealer/contractor told me it was	TRUE	Yes	Yes	0	FALSE	Needed to replace anyway	To save money	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE	
HZ948	Eligible Complete	Learning or "smart" thermostat	12	No	Yes	TRUE	1	3	4	N	2	FALSE	TRUE	It's a™s ENERGY STAR-certified	TRUE	No	0	Was not aware	TRUE	To save enerev	0	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE	
LS526	Eligible Complete	Ground-source or geothermal heat pump	24	Yes	Yes	TRUE	3	3	1	4	4	FALSE	TRUE	Information about the product from packaging, websites, etc.	TRUE	No	0	I have tried for rebate but have been told I didn't use a certified contractor to install my system	FALSE	To save money	0	TRUE	Ground-source or geothermal heat pump	Ground-source or geothermal heat pump	Electric	TRUE	FALSE	FALSE	
DD775	Eligible Complete	Room air purifier	2	Yes	Yes	TRUE	1	0	2	2	0	FALSE	TRUE	Information about the product from packaging, websites, etc.	TRUE	No	0	Don't know	FALSE	Wife has copd	To save money	TRUE	Central air conditioner	Gas furnace/boiler	Gas	TRUE	FALSE	FALSE	
DD775	Eligible Complete	Showerhead	17	Yes	Yes	TRUE	2	0	2	N	2	TRUE	FALSE	Information about the product from packaging, websites. etc.	TRUE	No	0	Don't know	FALSE	To improve comfort	To save money	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE	
DD775	Eligible Complete	Learning or "smart" thermostat	12	Yes	Yes	TRUE	2	2	2	2	N	TRUE	FALSE	It's a™s ENERGY STAR-certified	TRUE	No	0	Don't know	FALSE	To save enerev	0	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE	
LG594	Eligible Complete	Showerhead	17	Yes	Yes	TRUE	2	2	3	2	N	TRUE	FALSE	The retailer/dealer/contractor told me it was	TRUE	No	0	I wasn't sure my equipment qualified	TRUE	Was ready to update	To save enerev	TRUE	Central air conditioner	Electric furnace	Electric	TRUE	TRUE	FALSE	
LG594	Eligible Complete	Bathroom faucet aerator	19	Yes	Yes	TRUE	2	3	4	2	N	TRUE	FALSE	It's a™s ENERGY STAR-certified	TRUE	No	0	Just forgot about it	TRUE	Was ready to update	Liked the style	FALSE	Central air conditioner	Electric furnace	Electric	TRUE	FALSE	FALSE	
LG594	Eligible Complete	Learning or "smart" thermostat	12	Yes	Yes	TRUE	2	2	3	N	2	TRUE	FALSE	The retailer/dealer/contractor told me it was	TRUE	No	0	I wasn't sure my equipment qualified	TRUE	To save enerev	0	TRUE	Central air conditioner	Electric furnace	Electric	TRUE	TRUE	FALSE	
ME113	Eligible Complete	Learning or "smart" thermostat	12	Yes	Yes	TRUE	1	1	1	N	1	FALSE	TRUE	Information about the product from packaging, websites, etc.	TRUE	No	0	I wasn't sure my equipment qualified	TRUE	Was ready to update	It had other features that I liked	FALSE	Central air conditioner	Electric furnace	Electric	TRUE	FALSE	FALSE	
KR706	Eligible Complete	Central air conditioner	25	No	Yes	TRUE	1	1	2	2	1	FALSE	TRUE	It's a™s ENERGY STAR-certified	TRUE	Yes	No	out of state	FALSE	new construction	new construction	FALSE	Central air conditioner	Gas furnace/boiler	Gas	TRUE	FALSE	FALSE	
HH866	Eligible Complete	Hot water pipe insulation for your hot water heater	20	No	Yes	TRUE	2	2	1	0	0	FALSE	TRUE	It's a™s ENERGY STAR-certified	TRUE	No	0	It was confusing	TRUE	To replace failing equioment	To save enerev	TRUE	Central air conditioner	Air-source heat pump	Electric	TRUE	FALSE	TRUE	
HH866	Eligible Complete	Heat pump water heater	11	No	Yes	TRUE	1	N	2	N	0	FALSE	TRUE	It's a™s ENERGY STAR-certified	TRUE	No	0	It was confusing	TRUE	Needed to replace anyway	It had other features that I liked	FALSE	Central air conditioner	Air-source heat pump	Electric	TRUE	FALSE	FALSE	
HE892	Eligible Complete	Central air conditioner	25	No	Yes	TRUE	1	1	1	1	1	FALSE	TRUE	The retailer/dealer/contractor told me it was	TRUE	No	0	Don't know	FALSE	To replace failing equipment	To save money	TRUE	Central air conditioner	Don't know Electric	Gas	TRUE	FALSE	FALSE	
LV388	Eligible Complete	Showerhead	17	Yes	Yes	TRUE	2	2	N	N	N	TRUE	FALSE	Information about the product from packaging, websites. etc.	TRUE	No	0	I wasn't sure my equipment qualified	TRUE	Was ready to update	Liked the style	FALSE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE	
CN474	Eligible Complete	Room air purifier	2	Yes	Yes	TRUE	1	1	1	2	4	FALSE	TRUE	It's a™s ENERGY STAR-certified	TRUE	No	0	Just forgot about it	TRUE	To improve comfort	It had other features that I liked	FALSE	Central air conditioner	None	Gas	TRUE	FALSE	FALSE	
CN474	Eligible Complete	Showerhead	17	Yes	Yes	TRUE	2	2	1	4	1	FALSE	TRUE	It's a™s ENERGY STAR-certified	TRUE	No	0	Just forgot about it	TRUE	To replace failing equioment	To save money	TRUE	Central air conditioner	None	Gas	FALSE	FALSE	FALSE	
MB566	Eligible Complete	Pool pump	3	Yes	Yes	TRUE	3	2	2	1	2	FALSE	TRUE	It's a™s ENERGY STAR-certified	TRUE	Yes	No	I wasn't sure my equipment qualified	TRUE	Was ready to update	To save enerev	TRUE	Central air conditioner,Air-source heat pump	Air-source heat pump ,Electric furnace	Electric	TRUE	FALSE	TRUE	
MB566	Eligible Complete	Kitchen faucet aerator	18	Yes	Yes	TRUE	2	2	2	2	2	TRUE	FALSE	Information about the product from packaging, websites, etc.	TRUE	No	0	I wasn't sure my equipment qualified	TRUE	To save energy	0	TRUE	Central air conditioner,Air-source heat pump	Air-source heat pump ,Electric furnace	Electric	TRUE	TRUE	FALSE	
MB566	Eligible Complete	Furnace fan with ECM (Electronically Commutated Motor)	9	Yes	Yes	TRUE	2	2	2	2	2	TRUE	FALSE	It's a™s ENERGY STAR-certified	TRUE	Yes	Don't know	0	FALSE	To save money	0	TRUE	Central air conditioner,Air-source heat pump	Air-source heat pump ,Electric furnace	Electric	TRUE	FALSE	FALSE	
KC540	Eligible Complete	Furnace fan with ECM (Electronically Commutated Motor)	9	Don't know	Yes	TRUE	2	2	2	3	2	TRUE	FALSE	The retailer/dealer/contractor told me it was	TRUE	Don't know	0	0	FALSE	Needed to replace anyway	To save enerev	TRUE	Central air conditioner,Other (please specify): attic fan for mild days	Gas furnace/boiler	Gas	TRUE	FALSE	FALSE	
LG156	Eligible Complete	Bathroom faucet aerator	19	Yes	Yes	TRUE	2	2	N	3	N	TRUE	FALSE	It's a™s ENERGY STAR-certified	TRUE	No	0	Didn't know I could	TRUE	To save money	0	TRUE	Central air conditioner,Air-source heat pump	Air-source heat pump ,Electric Baseboard heating system	Electric	TRUE	TRUE	FALSE	
LG156	Eligible Complete	Air-source heat pump	21	Yes	Yes	TRUE	3	3	2	3	N	TRUE	FALSE	It's a™s ENERGY STAR-certified	TRUE	Don't know	0	0	FALSE	To save money	0	TRUE	Central air conditioner,Air-source heat pump	Air-source heat pump ,Electric Baseboard heating system	Electric	TRUE	FALSE	FALSE	
AM582	Eligible Complete	Learning or "smart" thermostat	12	Don't know	Yes	TRUE	2	3	1	3	2	FALSE	TRUE	Historical energy bills compared to current	TRUE	Yes	Yes	0	FALSE	To save money	0	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE	
KN880	Eligible Complete	Central air conditioner	25	Don't know	Yes	TRUE	2	4	N	4	N	TRUE	FALSE	Don't know	FALSE	No	0	I applied, but I did not receive a rebate	FALSE	To replace failing equipment	Don't know	FALSE	Central air conditioner	Electric furnace	Gas	TRUE	FALSE	FALSE	
AT737	Eligible Complete	Showerhead	17	Yes	Yes	TRUE	1	1	2	N	1	FALSE	TRUE	Landlord installed it	FALSE	No	0	Landlord replaced broken one	TRUE	To replace failing equipment	Landlord bought it	FALSE	Window or wall air conditioner	Electric baseboard heating system	Electric	TRUE	FALSE	FALSE	
KC536	Eligible Complete	Showerhead	17	Yes	No	TRUE	4	4	1	4	N	FALSE	TRUE	Information about the product from packaging, websites. etc.	TRUE	No	0	I wanted a different model that did not qualify	FALSE	Was ready to update	It had other features that I liked	FALSE	Central air conditioner	Electric furnace	Electric	TRUE	FALSE	FALSE	
KX743	Eligible Complete	Kitchen faucet aerator	18	Yes	Yes	TRUE	2	2	2	2	1	FALSE	TRUE	Information about the product from packaging, websites, etc.	TRUE	No	0	Don't know	FALSE	To save money	0	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE	
KX743	Eligible Complete	Bathroom faucet aerator	19	Yes	Yes	TRUE	2	2	2	2	2	TRUE	FALSE	Information about the product from packaging, websites. etc.	TRUE	No	0	Don't know	FALSE	To save energy	0	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE	
HT597	Eligible Complete	Kitchen faucet aerator	18	Yes	Don't know	TRUE	3	2	2	0	1	FALSE	TRUE	Don't know	FALSE	No	0	Don't know	FALSE	Don't know	It was the only option available	FALSE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE	
HT597	Eligible Complete	Bathroom faucet aerator	19	Yes	Don't know	TRUE	1	2	2	3	2	FALSE	TRUE	Don't know	FALSE	No	0	Don't know	FALSE	Don't know	To save energy	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE	
HT597	Eligible Complete	Learning or "smart" thermostat	12	Yes	Don't know	TRUE	2	1	3	N	1	FALSE	TRUE	It's a™s ENERGY STAR-certified	TRUE	No	0	Don't know	FALSE	To save energy	0	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE	
FN584	Eligible Complete	Hot water pipe insulation for your hot water heater	20	Yes	Yes	TRUE	3	2	2	2	2	TRUE	FALSE	It's a™s ENERGY STAR-certified	TRUE	No	0	Just forgot about it	TRUE	They insulated with the roof and upper room insulation	To make our home more efficiently cool and warm	FALSE	Central air conditioner	Gas furnace/boiler ,Other (please specify): out door wood boiler Gas	Electric	TRUE	FALSE	FALSE	
HW784	Eligible Complete	Showerhead	17	Yes	Yes	TRUE	2	3	3	2	2	TRUE	FALSE	It's a™s ENERGY STAR-certified	TRUE	No	0	I wasn't sure my equipment qualified	TRUE	Needed to replace anyway	It had other features that I liked	FALSE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE	
HW784	Eligible Complete	Learning or "smart" thermostat	12	Yes	Yes	TRUE	2	3	3	2	2	TRUE	FALSE	It's a™s ENERGY STAR-certified	TRUE	Yes	No	I wasn't sure my equipment qualified	TRUE	Was ready to update	To save enerev	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE	
HW399	Eligible Complete	Learning or "smart" thermostat	12	Don't know	Yes	TRUE	2	N	2	N	2	TRUE	FALSE	It's a™s ENERGY STAR-certified	TRUE	Yes	Yes	0	FALSE	To save money	0	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE	
KU700	Eligible Complete	Kitchen faucet aerator	18	No	Yes	TRUE	2	0	0	2	0	TRUE	FALSE	Information about the product from packaging, websites, etc.	TRUE	No	0	Don't know	FALSE	To replace failing equipment	Liked the style	FALSE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE	

Measure Information				Criterion A: Familiarity with at least one Ameren Missouri program, rebate, or discount			Criterion B: At least one element of Ameren's program marketing and outreach motivated them to adopt the measure								Criterion C: They had a valid reason for considering the adopted measure energy efficient		Criterion D: They had not received a rebate from Ameren, and had not already tried to receive a rebate from Ameren, and they stated a valid reason for not applying for an Ameren rebate				Criterion E: They had a valid reason for deciding to install the measure			Criterion F: The adopted measure generated electric savings, not gas savings				Meeting all criteria	
Account	Cadmus Disposition	Measure	Measure Number	C2. Have you ever seen or heard of Ameren Missouri's energy efficiency programs?	C10. Are you aware that Ameren Missouri offers rebates and discounts for energy-saving equipment in your home ?	Criterion A met? (Yes to C2 or C10)	a) Information about energy savings from Ameren Missouri's marketing or bill insert	b) Ameren Missouri's marketing information from a contractor or retailer	c) Information from colleagues or friends who installed energy efficient equipment and received a rebate from Ameren Missouri	d) Past participation in an Ameren Missouri energy efficiency program	e) Information from the energy assessment conducted at your home through Ameren Missouri	Criterion B met for 50% savings? (Max rating was 2)	Criterion B met for 100% savings? (Max rating was 1)	C7. How do you know the [measure] is energy efficient?	Criterion C met? (qualitative assessment)	G10. Did you receive a rebate, discount, or tax credit for installing the [measure]?	G11. Did you get a rebate from Ameren Missouri?	G12. Why didn't you or your contractor apply for a rebate through Ameren Missouri for the [measure]?	Criterion D met? (qualitative assessment)	G8. Which of the following reasons best describe why you decided to install a [measure]?	Which of the following reasons best describe why you chose an energy efficient version of a [measure]?	Criterion E met? (qualitative assessment)	Cooling System	Heating System	Water Heating Fuel	Criterion F met? (depends on the measure)	Criterion B met for 50% savings? (Max rating was 2)	Criterion B met for 100% savings? (Max rating was 1)	
GS293	Eligible Complete	Learning or "smart" thermostat	12	Yes		TRUE	N	N	1	N	N	FALSE	TRUE	ITâ€™s ENERGY STAR-certified	TRUE	No		I wasnâ€™t sure my equipment qualified	TRUE	Was ready to update	To save energy	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE	
CF885	Eligible Complete	Kitchen faucet aerator	18	Yes		TRUE	0	N	0	2	0	TRUE	FALSE	ITâ€™s ENERGY STAR-certified	TRUE	No	0	Don't know	FALSE	Was ready to update	It had other features that I liked	FALSE	Central air conditioner	Electric furnace	Electric	TRUE	FALSE	FALSE	
CF885	Eligible Complete	Hot water pipe insulation for your hot water heater	20	Yes		TRUE	1	N	1	1	N	FALSE	TRUE	Information about the product from packaging, websites. etc.	TRUE	No	0	I wasnâ€™t sure my equipment qualified	TRUE	Needed to replace anyway	It was the cheapest product available	FALSE	Central air conditioner	Electric furnace	Electric	TRUE	FALSE	FALSE	
CF885	Eligible Complete	Furnace fan with ECM (Electronically Commutated Motor)	9	Yes		TRUE	1	N	D	2	D	FALSE	TRUE	The retailer/dealer/ contractor told me it was	TRUE	No	0	I wasnâ€™t sure my equipment qualified	TRUE	To save energy	0	TRUE	Central air conditioner	Electric furnace	Electric	TRUE	FALSE	TRUE	
AM977	Eligible Complete	Room air purifier	2	Yes		TRUE	2	2	2	2	2	TRUE	FALSE	Information about the product from packaging, websites. etc.	TRUE	No	0	Don't know	FALSE	To improve comfort	Liked the style	FALSE	Air-source heat pumo	Air-source heat pump ,Electric furnace	Electric	TRUE	FALSE	FALSE	
AM977	Eligible Complete	Air-source heat pumo	21	Yes		TRUE	2	2	2	2	2	TRUE	FALSE	The retailer/dealer/ contractor told me it was	TRUE	No	0	contractor said it didn't qualify	FALSE	Needed to replace anyway	To save monev	TRUE	Air-source heat pumo	Air-source heat pump ,Electric furnace	Electric	TRUE	FALSE	FALSE	
HE674	Eligible Complete	Showerhead	17	Yes		TRUE	1	1	1	1	1	FALSE	TRUE	aot it from you	FALSE	No	0	aot it from you	FALSE	To replace failing equipment	To save enerev	TRUE	Central air conditioner	Electric furnace	Electric	TRUE	FALSE	FALSE	
HE674	Eligible Complete	Kitchen faucet aerator	18	Yes		TRUE	1	1	1	1	1	FALSE	TRUE	Information about the product from packaging, websites. etc.	TRUE	No		I wasnâ€™t sure my equipment qualified	TRUE	To save energy	0	TRUE	Central air conditioner	Electric furnace	Electric	TRUE	FALSE	TRUE	
HE674	Eligible Complete	Bathroom faucet aerator	19	Yes		TRUE	1	1	1	1	2	FALSE	TRUE	ITâ€™s ENERGY STAR-certified	TRUE	No	0	Don't know	FALSE	Needed to replace anyway	It was the only option available	FALSE	Central air conditioner	Electric furnace	Electric	TRUE	FALSE	FALSE	
CN740	Eligible Complete	Room air conditioner	1	Yes		No	1	2	3	2	2	FALSE	TRUE	ITâ€™s ENERGY STAR-certified	TRUE	No	0	Don't know	FALSE	To replace failing equipment	It was the only option available	FALSE	Central air conditioner	Electric furnace	Electric	TRUE	FALSE	FALSE	
CN740	Eligible Complete	Showerhead	17	Yes		No	1	2	3	2	2	FALSE	TRUE	ITâ€™s ENERGY STAR-certified	TRUE	No	0	Don't know	FALSE	To save monev	0	TRUE	Central air conditioner	Electric furnace	Electric	TRUE	FALSE	FALSE	
CN740	Eligible Complete	Kitchen faucet aerator	18	Yes		No	1	2	3	2	1	FALSE	TRUE	Information about the product from packaging, websites. etc.	TRUE	No	0	Don't know	FALSE	To save money	0	TRUE	Central air conditioner	Electric furnace	Electric	TRUE	FALSE	FALSE	
FN596	Eligible Complete	Kitchen faucet aerator	18	Yes		TRUE	2	4	4	1	4	FALSE	TRUE	Information about the product from packaging, websites. etc.	TRUE	No	0	Just forgot about it	TRUE	To replace failing equipment	functionality	FALSE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE	
FN596	Eligible Complete	Hot water pipe insulation for your hot water heater	20	Yes		TRUE	2	2	4	1	4	FALSE	TRUE	The retailer/dealer/ contractor told me it was	TRUE	No	0	Just forgot about it	TRUE	To save energy	0	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE	
FN596	Eligible Complete	Learning or "smart" thermostat	12	Yes		TRUE	2	1	D	2	3	FALSE	TRUE	Information about the product from packaging, websites. etc.	TRUE	Don't know	0	0	FALSE	To improve comfort	To save money	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE	
ET174	Eligible Complete	Hot water pipe insulation for your hot water heater	20	Yes		TRUE	2	2	D	N	D	TRUE	FALSE	The retailer/dealer/ contractor told me it was	TRUE	No	0	Did not know I could	TRUE	To replace failing equipment	To save enerev	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE	
LS917	Eligible Complete	Room air purifier	2	Yes		TRUE	3	3	2	4	N	TRUE	FALSE	Information about the product from packaging, websites. etc.	TRUE	No	0	Just forgot about it	TRUE	health reasons	Liked the style	FALSE	Central air conditioner,Air-source heat pump	Gas furnace/boiler	Gas	TRUE	FALSE	FALSE	
LS917	Eligible Complete	Showerhead	17	Yes		TRUE	3	3	2	N	N	TRUE	FALSE	The retailer/dealer/ contractor told me it was	TRUE	No	0	I wasnâ€™t sure my equipment qualified	TRUE	Needed to replace anyway	To save money	TRUE	Central air conditioner,Air-source heat pump	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE	
GP243	Eligible Complete	Room air conditioner	1	Yes		TRUE	2	4	3	N	2	TRUE	FALSE	ITâ€™s ENERGY STAR-certified	TRUE	No	0	I wasnâ€™t sure my equipment qualified	TRUE	To improve comfort	It was the cheapest product available	FALSE	Window or wall air conditioner	Other (please specify): Space heatersElectric	Electric	TRUE	FALSE	FALSE	
DG739	Eligible Complete	Learning or "smart" thermostat	12	Yes		TRUE	2	2	2	4	3	TRUE	FALSE	ITâ€™s ENERGY STAR-certified	TRUE	No	0	Don't know	FALSE	Needed to replace anyway	It had other features that I liked	FALSE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE	
DG739	Eligible Complete	Central air conditioner	25	Yes		TRUE	2	2	3	2	3	TRUE	FALSE	The retailer/dealer/ contractor told me it was	TRUE	Yes	Yes	0	FALSE	To save energy	0	TRUE	Central air conditioner	Gas furnace/boiler	Gas	TRUE	FALSE	FALSE	
DV192	Eligible Complete	Showerhead	17	Yes		TRUE	D	D	1	D	N	FALSE	TRUE	Information about the product from packaging, websites. etc.	TRUE	No	0	Just forgot about it	TRUE	To save enerev	0	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE	
LS916	Eligible Complete	Room air conditioner	1	Yes		TRUE	2	N	N	N	2	TRUE	FALSE	Information about the product from packaging, websites. etc.	TRUE	No	0	Landlord purchased the equipment	FALSE	To replace failing equipment	To save energy	TRUE	Window or wall air conditioner	Gas furnace/boiler	Gas	TRUE	FALSE	FALSE	
AW742	Eligible Complete	Showerhead	17	Yes		TRUE	2	3	3	4	2	TRUE	FALSE	Information about the product from packaging, websites. etc.	TRUE	No	0	Don't know	FALSE	To save money	0	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE	
AW742	Eligible Complete	Bathroom faucet aerator	19	Yes		TRUE	2	4	3	3	2	TRUE	FALSE	Information about the product from packaging, websites. etc.	TRUE	No	0	Don't know	FALSE	To save enerev	0	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE	
AW742	Eligible Complete	Hot water pipe insulation for your hot water heater	20	Yes		TRUE	2	3	3	4	N	TRUE	FALSE	Information about the product from packaging, websites. etc.	TRUE	No	0	Don't know	FALSE	To save energy	0	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE	
GP505	Eligible Complete	Showerhead	17	No		TRUE	3	3	2	3	3	TRUE	FALSE	Information about the product from packaging, websites. etc.	TRUE	No	0	I wasnâ€™t sure my equipment qualified	TRUE	To replace failing equipment	To save enerev	TRUE	Central air conditioner	Electric furnace ,Other (please specify): Wood burning stoveElectric	Electric	TRUE	TRUE	FALSE	
DG290	Eligible Complete	Kitchen faucet aerator	18	No		TRUE	1	1	1	1	1	FALSE	TRUE	you sent it to my house	FALSE	No	0	Don't know	FALSE	To save energy	0	TRUE	Central air conditioner	Electric furnace	Electric	TRUE	FALSE	FALSE	
DG290	Eligible Complete	Hot water pipe insulation for your hot water heater	20	No		TRUE	1	1	1	1	1	FALSE	TRUE	I got a package for Amaren on this	FALSE	No	0	Don't know	FALSE	To save enerev	0	TRUE	Central air conditioner	Electric furnace	Electric	TRUE	FALSE	FALSE	
DG290	Eligible Complete	Learning or "smart" thermostat	12	No		TRUE	1	2	1	1	1	FALSE	TRUE	ITâ€™s ENERGY STAR-certified	TRUE	No	0	Don't know	FALSE	To save money	0	TRUE	Central air conditioner	Electric furnace	Electric	TRUE	FALSE	FALSE	
EC997	Eligible Complete	Central air conditioner	25	No		TRUE	1	2	2	N	2	FALSE	TRUE	Information about the product from packaging, websites. etc.	TRUE	No	0	I wasnâ€™t sure my equipment qualified	TRUE	Was ready to update	To save energy	TRUE	Central air conditioner	Gas furnace/boiler	Gas	TRUE	FALSE	TRUE	
CF378	Eligible Complete	Room air purifier	2	Yes		TRUE	2	3	2	2	2	TRUE	FALSE	ITâ€™s ENERGY STAR-certified	TRUE	No	0	I wasnâ€™t sure my equipment qualified	TRUE	To improve comfort	It had other features that I liked	FALSE	Central air conditioner	Gas furnace/boiler	Gas	TRUE	FALSE	FALSE	
CF378	Eligible Complete	Showerhead	17	Yes		TRUE	2	3	2	2	2	TRUE	FALSE	Information about the product from packaging, websites. etc.	TRUE	No		I wasnâ€™t sure my equipment qualified	TRUE	To replace failing equipment	It had other features that I liked	FALSE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE	
EH359	Eligible Complete	Showerhead	17	Yes		No	2	4	N	2	2	TRUE	FALSE	ITâ€™s ENERGY STAR-certified	TRUE	No	0	still updating	FALSE	Needed to replace anyway	It had other features that I liked	FALSE	Central air conditioner	Other (please specify): forced hot airGas	Gas	FALSE	FALSE	FALSE	
EH359	Eligible Complete	Kitchen faucet aerator	18	Yes		No	2	3	2	N	2	TRUE	FALSE	ITâ€™s ENERGY STAR-certified	TRUE	Don't know	0	0	FALSE	Was ready to update	Liked the style	FALSE	Central air conditioner	Other (please specify): forced hot airGas	Gas	FALSE	FALSE	FALSE	
DD586	Eligible Complete	Learning or "smart" thermostat	12	No		TRUE	1	1	1	2	1	FALSE	TRUE	ITâ€™s ENERGY STAR-certified	TRUE	Don't know	0	0	FALSE	Needed to replace anyway	To save money	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE	
HM816	Eligible Complete	Showerhead	17	No		TRUE	3	4	D	2	N	TRUE	FALSE	Information about the product from packaging, websites. etc.	TRUE	Don't know	0	0	FALSE	To save monev	0	TRUE	Window or wall air conditioner	Electric baseboard heating system	Electric	TRUE	FALSE	FALSE	
LA560	Eligible Complete	Furnace fan with ECM (Electronically Commutated Motor)	9	Yes		TRUE	1	N	2	1	2	FALSE	TRUE	ITâ€™s ENERGY STAR-certified	TRUE	No	0	Installed myself didn't qualify	FALSE	To save energy	0	TRUE	Central air conditioner	Gas furnace/boiler	Gas	TRUE	FALSE	FALSE	
LA560	Eligible Complete	Central air conditioner	25	Yes		TRUE	2	N	1	N	2	FALSE	TRUE	ITâ€™s ENERGY STAR-certified	TRUE	No	0	Installed myself not by a contractor	FALSE	To save energy	0	TRUE	Central air conditioner	Gas furnace/boiler	Gas	TRUE	FALSE	FALSE	
LA605	Eligible Complete	Showerhead	17	Yes		No	1	1	1	1	1	FALSE	TRUE	ITâ€™s ENERGY STAR-certified	TRUE	No	0	Just forgot about it	TRUE	To save money	0	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE	

Measure Information				Criterion A: Familiarity with at least one Ameren Missouri program, rebate, or discount			Criterion B: At least one element of Ameren's program marketing and outreach motivated them to adopt the measure							Criterion C: They had a valid reason for considering the adopted measure energy efficient		Criterion D: They had not received a rebate from Ameren, and had not already tried to receive a rebate from Ameren, and they stated a valid reason for not applying for an Ameren rebate				Criterion E: They had a valid reason for deciding to install the measure			Criterion F: The adopted measure generated electric savings, not gas savings				Meeting all criteria	
Account	Cadmus Disposition	Measure	Measure Number	C2. Have you ever seen or heard of Ameren Missouri's energy efficiency programs?	C10. Are you aware that Ameren Missouri offers rebates and discounts for energy-saving equipment in your home ?	Criterion A met? (Yes to C2 or C10)	a) Information about energy savings from Ameren Missouri's marketing or bill insert	b) Ameren Missouri's marketing information from a contractor or retailer	c) Information from colleagues or friends who installed energy efficient equipment and received a rebate from Ameren Missouri	d) Past participation in an Ameren Missouri energy efficiency program	e) Information from the energy assessment conducted at your home through Ameren Missouri	Criterion B met for 50% savings? (Max rating was 2)	Criterion B met for 100% savings ? (Max rating was 1)	C7. How do you know the [measure] is energy efficient?	Criterion C met? (qualitative assessment)	G10. Did you receive a rebate, discount, or tax credit for installing the [measure]?	G11. Did you get a rebate from Ameren Missouri?	G12. Why didn't you or your contractor apply for a rebate through Ameren Missouri for the [measure]?	Criterion D met? (qualitative assessment)	G8. Which of the following reasons best describe why you decided to install a [measure]?	Which of the following reasons best describe why you chose an energy efficient version of a [measure]?	Criterion E met? (qualitative assessment)	Cooling System	Heating System	Water Heating Fuel	Criterion F met? (depends on the measure)	Criterion B met for 50% savings? (Max rating was 2)	Criterion B met for 100% savings? (Max rating was 1)	
LA605	Eligible Complete	Hot water pipe insulation for your hot water heater	20	Yes	No	TRUE	1	1	1	1	1	FALSE	TRUE	The retailer/dealer/contractor told me it was	TRUE	No	0	Just forgot about it	TRUE	To save energy	0	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE		
LA605	Eligible Complete	Learning or "smart" thermostat	12	Yes	No	TRUE	1	1	1	1	1	FALSE	TRUE	Information about the product from packaging, websites, etc.	TRUE	Yes	No	It was confusing	TRUE	To save energy	0	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE		
EC114	Eligible Complete	Furnace fan with ECM (Electronically Commutated Motor)	9	Yes	No	TRUE	2	2	3	3	3	TRUE	FALSE	Don't know	FALSE	No	0	Don't know	FALSE	Don't know	To save energy	TRUE	Central air conditioner	Gas furnace/boiler	Gas	TRUE	FALSE	FALSE		
EC114	Eligible Complete	Central air conditioner	25	Yes	No	TRUE	2	3	4	3	3	TRUE	FALSE	now unit	FALSE	No	0	Don't know	FALSE	To replace failing equipment	To save money	TRUE	Central air conditioner	Gas furnace/boiler	Gas	TRUE	FALSE	FALSE		
DA605	Eligible Complete	Learning or "smart" thermostat	12	Yes	Yes	TRUE	2	2	2	2	2	TRUE	FALSE	It's ENERGY STAR-certified	TRUE	Yes	Yes	0	FALSE	To save energy	0	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE		
DA605	Eligible Complete	Central air conditioner	25	Yes	Yes	TRUE	2	2	2	2	2	TRUE	FALSE	The retailer/dealer/contractor told me it was	TRUE	Yes	Yes	0	FALSE	Needed to replace anyway	To save energy	TRUE	Central air conditioner	Gas furnace/boiler	Gas	TRUE	FALSE	FALSE		
KX886	Eligible Complete	Central air conditioner	25	Yes	Yes	TRUE	2	1	1	3	3	FALSE	TRUE	It's ENERGY STAR-certified	TRUE	Yes	Yes	0	FALSE	To replace failing equipment	To save energy	TRUE	Central air conditioner	Gas furnace/boiler	Gas	TRUE	FALSE	FALSE		
EM682	Eligible Complete	Ground-source or geothermal heat pump	24	Yes	Yes	TRUE	N	1	1	N	N	FALSE	TRUE	The retailer/dealer/contractor told me it was	TRUE	Yes	Don't know	0	FALSE	To replace failing equipment	To save money	TRUE	Central air conditioner,Air-source heat pump	Air-source heat pump	Gas	TRUE	FALSE	FALSE		
EM682	Eligible Complete	Central air conditioner	25	Yes	Yes	TRUE	N	1	1	N	N	FALSE	TRUE	The retailer/dealer/contractor told me it was	TRUE	Don't know	0	0	FALSE	To replace failing equipment	To save money	TRUE	Central air conditioner,Air-source heat pump	Air-source heat pump	Gas	TRUE	FALSE	FALSE		
EH356	Eligible Complete	Furnace fan with ECM (Electronically Commutated Motor)	9	Yes	Yes	TRUE	2	3	3	4	4	TRUE	FALSE	Information about the product from packaging, websites, etc.	TRUE	No	0	Contractor may have	FALSE	Needed to replace anyway	To save energy	TRUE	Central air conditioner	Gas furnace/boiler	Gas	TRUE	FALSE	FALSE		
EH356	Eligible Complete	Learning or "smart" thermostat	12	Yes	Yes	TRUE	3	1	4	3	N	FALSE	TRUE	The retailer/dealer/contractor told me it was	TRUE	No	0	Contractor may have	FALSE	Needed to replace anyway	It was the only option available	FALSE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE		
EH356	Eligible Complete	Central air conditioner	25	Yes	Yes	TRUE	2	2	3	4	4	TRUE	FALSE	The retailer/dealer/contractor told me it was	TRUE	No	0	Contractor may have	FALSE	Needed to replace anyway	It was the only option available	FALSE	Central air conditioner	Gas furnace/boiler	Gas	TRUE	FALSE	FALSE		
KX795	Eligible Complete	Central air conditioner	25	Yes	Yes	TRUE	N	N	N	N	2	TRUE	FALSE	It's ENERGY STAR-certified	TRUE	No	0	I wanted a different model that did not qualify	FALSE	To save energy	0	TRUE	Central air conditioner	Electric furnace	Electric	TRUE	FALSE	FALSE		
MO332	Eligible Complete	Learning or "smart" thermostat	12	No	Yes	TRUE	N	1	N	3	N	FALSE	TRUE	The retailer/dealer/contractor told me it was	TRUE	Don't know	0	0	FALSE	To save money	0	TRUE	Central air conditioner	Electric furnace	Electric	TRUE	FALSE	FALSE		
MO332	Eligible Complete	Central air conditioner	25	No	Yes	TRUE	N	1	N	3	N	FALSE	TRUE	The retailer/dealer/contractor told me it was	TRUE	Yes	Don't know	0	FALSE	To replace failing equipment	Dealer recommendation	FALSE	Central air conditioner	Electric furnace	Electric	TRUE	FALSE	FALSE		
GV432	Eligible Complete	Air-source heat pump	21	Yes	Yes	TRUE	1	1	1	1	1	FALSE	TRUE	It's ENERGY STAR-certified	TRUE	No	0	I wanted a different model that did not qualify	FALSE	To replace failing equipment	To save money	TRUE	Air-source heat pump	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE		
MM775	Eligible Complete	Central air conditioner	25	Yes	No	TRUE	1	1	2	1	1	FALSE	TRUE	It's ENERGY STAR-certified	TRUE	No	0	Don't know	FALSE	To save energy	0	TRUE	Central air conditioner	Air-source heat pump	Gas	TRUE	FALSE	FALSE		
LV647	Eligible Complete	Showerhead	17	Yes	Yes	TRUE	1	1	1	1	1	FALSE	TRUE	The retailer/dealer/contractor told me it was	TRUE	No	0	Just forgot about it	TRUE	Was ready to update	To save energy	TRUE	Central air conditioner	Electric furnace	Electric	TRUE	FALSE	TRUE		
LD740	Eligible Complete	Pool pump	3	Yes	Yes	TRUE	N	4	1	3	4	FALSE	TRUE	It's ENERGY STAR-certified	TRUE	No	0	My favorite contractor is not one of your special contractors. Just some small company	FALSE	Hobby of mine. It will never pay for itself	To save energy	TRUE	Central air conditioner,Ductless or mini-split heat pump ,Other (please specify): I put 3 new Mitsubishi hyper heat pumps in to have zoned comfort and efficiency and still have my working central air and resistance heat forced air system	Ductless or mini-split heat pump ,Electric furnace	Electric	TRUE	FALSE	FALSE		
LD740	Eligible Complete	Learning or "smart" thermostat	12	Yes	Yes	TRUE	4	D	1	D	D	FALSE	TRUE	Information about the product from packaging, websites, etc.	TRUE	No	0	I use Fire and Ice heating and cooling because I like them and they are not an approved dealer. Basically BS they have to be in a special group of preferred companies. Spent $10,000 for 30 plus SEER and got NOTHING !!!	FALSE	To save energy	0	TRUE	Central air conditioner,Ductless or mini-split heat pump ,Other (please specify): I put 3 new Mitsubishi hyper heat pumps in to have zoned comfort and efficiency and still have my working central air and resistance heat forced air system	Ductless or mini-split heat pump ,Electric furnace	Electric	TRUE	FALSE	FALSE		
KC774	Eligible Complete	Pool pump	3	Yes	Yes	TRUE	2	N	N	N	N	TRUE	FALSE	Information about the product from packaging, websites, etc.	TRUE	No	0	I wasn't sure my equipment qualified	TRUE	To replace failing equipment	It was the cheapest product available	FALSE	Central air conditioner	Gas furnace/boiler	Electric	TRUE	FALSE	FALSE		
GS439	Eligible Complete	Showerhead	17	Yes	Yes	TRUE	1	1	1	1	1	FALSE	TRUE	Information about the product from packaging, websites, etc.	TRUE	No	0	Don't know	FALSE	To save money	0	TRUE	Central air conditioner	Electric furnace	Electric	TRUE	FALSE	FALSE		
KF535	Eligible Complete	Furnace fan with ECM (Electronically Commutated Motor)	9	Yes	Don't know	TRUE	2	1	2	2	2	FALSE	TRUE	The retailer/dealer/contractor told me it was	TRUE	No	0	Don't know	FALSE	To replace failing equipment	It was the only option available	FALSE	Central air conditioner	Gas furnace/boiler	Gas	TRUE	FALSE	FALSE		
KF535	Eligible Complete	Learning or "smart" thermostat	12	Yes	Don't know	TRUE	2	2	2	2	2	TRUE	FALSE	Information about the product from packaging, websites, etc.	TRUE	No	0	Don't know	FALSE	To replace failing equipment	To save money	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE		
KF535	Eligible Complete	Central air conditioner	25	Yes	Don't know	TRUE	2	2	2	2	2	TRUE	FALSE	The retailer/dealer/contractor told me it was	TRUE	No	0	Don't know	FALSE	To replace failing equipment	Don't know	FALSE	Central air conditioner	Gas furnace/boiler	Gas	TRUE	FALSE	FALSE		
FW322	Eligible Complete	Central air conditioner	25	Yes	Yes	TRUE	3	3	2	3	3	TRUE	FALSE	Information about the product from packaging, websites, etc.	TRUE	No	0	I wasn't sure my equipment qualified	TRUE	Needed to replace anyway	It was the only option available	FALSE	Central air conditioner	Gas furnace/boiler	Gas	TRUE	FALSE	FALSE		
EE669	Eligible Complete	Kitchen faucet aerator	18	Yes	Yes	TRUE	2	2	D	D	N	TRUE	FALSE	Information about the product from packaging, websites, etc.	TRUE	No	0	Don't know	FALSE	Was ready to update	Liked the style	FALSE	Central air conditioner	Electric furnace	Electric	TRUE	FALSE	FALSE		
EE659	Eligible Complete	Central air conditioner	25	Don't know	Yes	TRUE	2	2	2	N	N	TRUE	FALSE	The retailer/dealer/contractor told me it was	TRUE	Yes	Yes	0	FALSE	Needed to replace anyway	To save energy	TRUE	Central air conditioner	Gas furnace/boiler	Gas	TRUE	FALSE	FALSE		
DS888	Eligible Complete	Showerhead	17	Don't know	Yes	TRUE	3	1	N	N	N	FALSE	TRUE	The retailer/dealer/contractor told me it was	TRUE	No	0	Just forgot about it	TRUE	Was ready to update	Liked the style	FALSE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE		
HM619	Eligible Complete	Learning or "smart" thermostat	12	Yes	Yes	TRUE	2	2	4	2	4	TRUE	FALSE	Information about the product from packaging, websites, etc.	TRUE	No	0	I wanted a different model that did not qualify	FALSE	To replace failing equipment	It had other features that I liked	FALSE	Central air conditioner	Gas furnace/boiler	Electric	FALSE	FALSE	FALSE		
DY321	Eligible Complete	Central air conditioner	25	Yes	No	TRUE	2	2	1	D	1	FALSE	TRUE	The retailer/dealer/contractor told me it was	TRUE	No	0	Didn't know we could	TRUE	To replace failing equipment	To save money	TRUE	Central air conditioner	Gas furnace/boiler	Gas	TRUE	FALSE	TRUE		
HT935	Eligible Complete	Showerhead	17	Yes	Yes	TRUE	2	2	2	2	3	TRUE	FALSE	It's ENERGY STAR-certified	TRUE	Yes	No	I wasn't sure my equipment qualified	TRUE	Needed to replace anyway	To save money	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE		
HT935	Eligible Complete	Bathroom faucet aerator	19	Yes	Yes	TRUE	2	2	2	2	2	TRUE	FALSE	It's ENERGY STAR-certified	TRUE	Yes	No	I wasn't sure my equipment qualified	TRUE	Needed to replace anyway	It had other features that I liked	FALSE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE		

Measure Information				Criterion A: Familiarity with at least one Ameren Missouri program, rebate, or discount			Criterion B: At least one element of Ameren's program marketing and outreach motivated them to adopt the measure							Criterion C: They had a valid reason for considering the adopted measure energy efficient		Criterion D: They had not received a rebate from Ameren, and had not already tried to receive a rebate from Ameren, and they stated a valid reason for not applying for an Ameren rebate			Criterion E: They had a valid reason for deciding to install the measure			Criterion F: The adopted measure generated electric savings, not gas savings				Meeting all criteria	
Account	Cadmus Disposition	Measure	Measure Number	C2. Have you ever seen or heard of Ameren Missouri's energy efficiency programs?	C10. Are you aware that Ameren Missouri offers rebates and discounts for energy-saving equipment in your home ?	Criterion A met? (Yes to C2 or C10)	a) Information about energy savings from Ameren Missouri's marking or bill insert	b) Ameren Missouri's marketing information from a contractor or retailer	c) Information from colleagues or friends who installed energy efficient equipment and received a rebate from Ameren Missouri	d) Past participation in an Ameren Missouri energy efficiency program	e) Information from the energy assessment conducted at your home through Ameren Missouri	Criterion B met for 50% savings? (Max rating was 2)	Criterion B met for 100% savings? (Max rating was 1)	C7. How do you know the [measure] is energy efficient?	Criterion C met? (qualitative assessment)	G10. Did you receive a rebate, discount, or tax credit for installing the [measure]?	G11. Did you get a rebate from Ameren Missouri?	G12. Why didn't you or your contractor apply for a rebate through Ameren Missouri for the [measure]?	Criterion D met? (qualitative assessment)	G8. Which of the following reasons best describe why you decided to install a [measure]?	Which of the following reasons best describe why you chose an energy efficient version of a [measure]?	Criterion E met? (qualitative assessment)	Cooling System	Heating System	Water Heating Fuel	Criterion F met? (depends on the measure)	Criterion B met for 50% savings? (Max rating was 2)	Criterion B met for 100% savings? (Max rating was 1)
FK656	Eligible Complete	Room air purifier	2	Yes	Yes	TRUE	2	2	1	3	3	FALSE	TRUE	It's ENERGY STAR-certified	TRUE	No	0	Just forgot about it	TRUE	To improve comfort	It had other features that I liked	FALSE	Central air conditioner	Electric furnace ,Other (please specify): Wood fireplaceElectric	Electric	TRUE	FALSE	FALSE
FK656	Eligible Complete	Hot water pipe insulation for your hot water heater	20	Yes	Yes	TRUE	2	3	2	3	2	TRUE	FALSE	Information about the product from packaging, websites, etc.	TRUE	No	0	House had flooded	FALSE	To save money	0	TRUE	Central air conditioner	Electric furnace ,Other (please specify): Wood fireplaceElectric	Electric	TRUE	FALSE	FALSE
FK656	Eligible Complete	Learning or "smart" thermostat	12	Yes	Yes	TRUE	2	3	2	3	4	TRUE	FALSE	It's ENERGY STAR-certified	TRUE	No	0	Just forgot about it	TRUE	To save money	0	TRUE	Central air conditioner	Electric furnace ,Other (please specify): Wood fireplaceElectric	Electric	TRUE	TRUE	FALSE
HZ272	Eligible Complete	Learning or "smart" thermostat	12	Don't know	Yes	TRUE	3	3	2	N	2	TRUE	FALSE	Information about the product from packaging, websites, etc.	TRUE	Don't know	0	0	FALSE	To save money	0	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE
FN458	Eligible Complete	Showerhead	17	Yes	No	TRUE	2	2	2	2	2	TRUE	FALSE	Don't know	FALSE	Don't know	0	0	FALSE	Don't know	Liked the style	FALSE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE
FN458	Eligible Complete	Bathroom faucet aerator	19	Yes	No	TRUE	2	2	2	2	2	TRUE	FALSE	Don't know	FALSE	Don't know	0	0	FALSE	Don't know	Don't know	FALSE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE
HW194	Eligible Complete	Learning or "smart" thermostat	12	Yes	Yes	TRUE	3	2	3	3	N	TRUE	FALSE	Information about the product from packaging, websites, etc.	TRUE	Yes	Yes	0	FALSE	To save money	0	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE
LV969	Eligible Complete	Showerhead	17	No	Yes	TRUE	4	2	2	3	1	FALSE	TRUE	Information about the product from packaging, websites, etc.	TRUE	No	0	I wasn't sure my equipment qualified	TRUE	To replace failing equipment	It had other features that I liked	FALSE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE
LV969	Eligible Complete	Kitchen faucet aerator	18	No	Yes	TRUE	2	2	2	3	1	FALSE	TRUE	Information about the product from packaging, websites, etc.	TRUE	No	0	I wasn't sure my equipment qualified	TRUE	Needed to replace anyway	It had other features that I liked	FALSE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE
LD629	Eligible Complete	Room air conditioner	1	Yes	No	TRUE	1	1	1	1	1	FALSE	TRUE	It's ENERGY STAR-certified	TRUE	No	0	Just forgot about it	TRUE	To save energy	0	TRUE	Central air conditioner	Electric furnace	Electric	TRUE	FALSE	TRUE
LD629	Eligible Complete	Room air purifier	2	Yes	No	TRUE	1	1	1	1	1	FALSE	TRUE	It's ENERGY STAR-certified	TRUE	No	0	I wasn't sure my equipment qualified	TRUE	To save energy	0	TRUE	Central air conditioner	Electric furnace	Electric	TRUE	FALSE	TRUE
LD629	Eligible Complete	Hot water pipe insulation for your hot water heater	20	Yes	No	TRUE	1	1	1	2	1	FALSE	TRUE	Information about the product from packaging, websites, etc.	TRUE	No	0	I wasn't sure my equipment qualified	TRUE	To save energy	0	TRUE	Central air conditioner	Electric furnace	Electric	TRUE	FALSE	TRUE
DA846	Eligible Complete	Room air purifier	2	No	Yes	TRUE	4	2	2	D	2	TRUE	FALSE	Information about the product from packaging, websites, etc.	TRUE	No	0	Just forgot about it	TRUE	Do clean the air quility in the house.	To save money	TRUE	Central air conditioner	Gas furnace/boiler	Gas	TRUE	TRUE	FALSE
DA846	Eligible Complete	Showerhead	17	No	Yes	TRUE	2	2	D	1	D	FALSE	TRUE	Information about the product from packaging, websites, etc.	TRUE	No	0	Don't know	FALSE	Was ready to update	Did some home improvements	FALSE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE
DA846	Eligible Complete	Heat pump water heater	11	No	Yes	TRUE	1	1	2	1	1	FALSE	TRUE	It's ENERGY STAR-certified	TRUE	No	0	Don't know	FALSE	To replace failing equipment	To save money	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE
CK636	Eligible Complete	Central air conditioner	25	Yes	Yes	TRUE	1	1	2	2	1	FALSE	TRUE	The retailer/dealer/contractor told me it was	TRUE	Don't know	0	0	FALSE	To replace failing equipment	To save energy	TRUE	Central air conditioner	Gas furnace/boiler	Gas	TRUE	FALSE	FALSE
CK787	Eligible Complete	Kitchen faucet aerator	18	Don't know	Yes	TRUE	2	D	N	N	D	TRUE	FALSE	Don't know	FALSE	No	0	Landlord got it	FALSE	To save money	0	TRUE	Central air conditioner	Gas furnace/boiler	Electric	TRUE	FALSE	FALSE
CK787	Eligible Complete	Bathroom faucet aerator	19	Don't know	Yes	TRUE	2	D	2	D	D	TRUE	FALSE	It's ENERGY STAR-certified	TRUE	No	0	Don't know	FALSE	To save money	0	TRUE	Central air conditioner	Gas furnace/boiler	Electric	TRUE	FALSE	FALSE
LD594	Eligible Complete	Central air conditioner	25	No	Yes	TRUE	1	1	1	1	1	FALSE	TRUE	It's ENERGY STAR-certified	TRUE	Yes	Yes	0	FALSE	To replace failing equipment	To save money	TRUE	Central air conditioner	Gas furnace/boiler	Don't know	TRUE	FALSE	FALSE
EQ563	Eligible Complete	Room air purifier	2	No	Yes	TRUE	N	N	1	N	N	FALSE	TRUE	Don't know	FALSE	No	0	Don't know	FALSE	allergies	Don't know	FALSE	Central air conditioner	Gas furnace/boiler	Gas	TRUE	FALSE	FALSE
EQ563	Eligible Complete	Learning or "smart" thermostat	12	No	Yes	TRUE	2	3	3	3	D	TRUE	FALSE	Don't know	FALSE	Don't know	0	0	FALSE	Needed to replace anyway	Don't know	FALSE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE
LL681	Eligible Complete	Central air conditioner	25	No	Yes	TRUE	4	4	2	N	N	TRUE	FALSE	It's ENERGY STAR-certified	TRUE	No	0	It was confusing	TRUE	Needed to replace anyway	To save money	TRUE	Central air conditioner	Gas furnace/boiler	Electric	TRUE	TRUE	FALSE
DD635	Eligible Complete	Learning or "smart" thermostat	12	Yes	Yes	TRUE	N	N	2	N	N	TRUE	FALSE	Information about the product from packaging, websites, etc.	TRUE	No	0	I wasn't sure my equipment qualified	TRUE	To save energy	0	TRUE	Central air conditioner	Air-source heat pump	Gas	TRUE	TRUE	FALSE
GV447	Eligible Complete	Showerhead	17	Yes	Yes	TRUE	2	1	2	3	1	FALSE	TRUE	Information about the product from packaging, websites, etc.	TRUE	Yes	No	I wanted a different model that did not qualify	FALSE	Was ready to update	To save energy	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE
GV447	Eligible Complete	Learning or "smart" thermostat	12	Yes	Yes	TRUE	1	1	1	2	2	FALSE	TRUE	Information about the product from packaging, websites, etc.	TRUE	No	0	I wasn't sure my equipment qualified	TRUE	Was ready to update	It had other features that I liked	FALSE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE
MH474	Eligible Complete	Showerhead	17	No	Yes	TRUE	2	2	2	4	2	TRUE	FALSE	Information about the product from packaging, websites, etc.	TRUE	No	0	Just forgot about it	TRUE	To save energy	0	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE
MH474	Eligible Complete	Learning or "smart" thermostat	12	No	Yes	TRUE	2	3	2	2	2	TRUE	FALSE	It's ENERGY STAR-certified	TRUE	No	0	Just forgot about it	TRUE	Was ready to update	It had other features that I liked	FALSE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE
CU944	Eligible Complete	Central air conditioner	25	Yes	Yes	TRUE	2	N	4	N	2	TRUE	FALSE	It's ENERGY STAR-certified	TRUE	No	0	not qualified	FALSE	To replace failing equipment	To save money	TRUE	Central air conditioner	Gas furnace/boiler	Gas	TRUE	FALSE	FALSE
FK470	Eligible Complete	Learning or "smart" thermostat	12	No	Yes	TRUE	2	N	1	N	2	FALSE	TRUE	It's ENERGY STAR-certified	TRUE	Yes	Yes	0	FALSE	To save energy	0	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE
LP888	Eligible Complete	Showerhead	17	Yes	Yes	TRUE	3	2	3	D	3	TRUE	FALSE	Information about the product from packaging, websites, etc.	TRUE	No	0	I wanted a different model that did not qualify	FALSE	To save energy	0	TRUE	Central air conditioner	Electric furnace	Electric	TRUE	FALSE	FALSE
LP888	Eligible Complete	Kitchen faucet aerator	18	Yes	Yes	TRUE	3	4	3	1	4	FALSE	TRUE	It's ENERGY STAR-certified	TRUE	No	0	Got it from Amreren	FALSE	To save energy	0	TRUE	Central air conditioner	Electric furnace	Electric	TRUE	FALSE	FALSE
LP888	Eligible Complete	Central air conditioner	25	Yes	Yes	TRUE	4	3	4	2	2	TRUE	FALSE	Information about the product from packaging, websites, etc.	TRUE	No	0	It was confusing	TRUE	To replace failing equipment	To save money	TRUE	Central air conditioner	Electric furnace	Electric	TRUE	TRUE	FALSE
MB634	Eligible Complete	Hot water pipe insulation for your hot water heater	20	Yes	Yes	TRUE	1	1	N	N	N	FALSE	TRUE	from Ameren	FALSE	No	0	received as part of plac	FALSE	To save energy	0	TRUE	Air-source heat pump	Air-source heat pump	Electric	TRUE	FALSE	FALSE
HM562	Eligible Complete	Showerhead	17	Yes	Yes	TRUE	1	2	3	1	1	FALSE	TRUE	Information about the product from packaging, websites, etc.	TRUE	No	0	Don't know	FALSE	Needed to replace anyway	Liked the style	FALSE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE
HM562	Eligible Complete	Kitchen faucet aerator	18	Yes	Yes	TRUE	1	1	2	2	3	FALSE	TRUE	Information about the product from packaging, websites, etc.	TRUE	No	0	Don't know	FALSE	To improve comfort	Liked the style	FALSE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE
HM562	Eligible Complete	Bathroom faucet aerator	19	Yes	Yes	TRUE	1	1	3	2	1	FALSE	TRUE	Information about the product from packaging, websites, etc.	TRUE	No	0	Don't know	FALSE	Was ready to update	Liked the style	FALSE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE
DL184	Eligible Complete	Heat pump water heater	11	No	Yes	TRUE	2	4	2	2	2	TRUE	FALSE	It's ENERGY STAR-certified	TRUE	Don't know	0	0	FALSE	To improve comfort	Don't know	FALSE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE
HW621	Eligible Complete	Hot water pipe insulation for your hot water heater	20	Yes	Yes	TRUE	1	1	2	1	1	FALSE	TRUE	Don't know	FALSE	No	0	I applied, but I did not receive a rebate	FALSE	To save energy	0	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE
CU550	Eligible Complete	Room air purifier	2	Yes	Yes	TRUE	N	D	D	2	D	TRUE	FALSE	Information about the product from packaging, websites, etc.	TRUE	No	0	Just forgot about it	TRUE	To improve comfort	To save energy	TRUE	Ground-source or geothermal heat pump	Ground-source or geothermal heat pump	Electric	TRUE	TRUE	FALSE
FC834	Eligible Complete	Central air conditioner	25	Yes	No	TRUE	1	2	2	2	2	TRUE	FALSE	It's ENERGY STAR-certified	TRUE	Yes	Don't know	0	FALSE	To replace failing equipment	To save energy	TRUE	Central air conditioner	Gas furnace/boiler	Electric	TRUE	FALSE	FALSE

Measure Information				Criterion A: Familiarity with at least one Ameren Missouri program, rebate, or discount			Criterion B: At least one element of Ameren's program marketing and outreach motivated them to adopt the measure							Criterion C: They had a valid reason for considering the adopted measure energy efficient		Criterion D: They had not received a rebate from Ameren, and had not already tried to receive a rebate from Ameren, and they stated a valid reason for not applying for an Ameren rebate			Criterion E: They had a valid reason for deciding to install the measure			Criterion F: The adopted measure generated electric savings, not gas savings				Meeting all criteria	
Account	Cadmus Disposition	Measure	Measure Number	C2. Have you ever seen or heard of Ameren Missouri's energy efficiency programs?	C10. Are you aware that Ameren Missouri offers rebates and discounts for energy-saving equipment in your home ?	Criterion A met? (Yes to C2 or C10)	a) Information about energy savings from Ameren Missouri's marking or bill insert	b) Ameren Missouri's marketing information from a contractor or retailer	c) Information from colleagues or friends who installed energy efficient equipment and received a rebate from Ameren Missouri	d) Past participation in an Ameren Missouri energy efficiency program	e) Information from the energy assessment conducted at your home through Ameren Missouri	Criterion B met for 50% savings? (Max rating was 2)	Criterion B met for 100% savings? (Max rating was 1)	C7. How do you know the [measure] is energy efficient?	Criterion C met? (qualitative assessment)	G10. Did you receive a rebate, discount, or tax credit for installing the [measure]?	G11. Did you get a rebate from Ameren Missouri?	G12. Why didn't you or your contractor apply for a rebate through Ameren Missouri for the [measure]?	Criterion D met? (qualitative assessment)	G8. Which of the following reasons best describe why you decided to install a [measure]?	Which of the following reasons best describe why you chose an energy efficient version of a [measure]?	Criterion E met? (qualitative assessment)	Cooling System	Heating System	Water Heating Fuel	Criterion F met? (depends on the measure)	Criterion B met for 50% savings? (Max rating was 2)	Criterion B met for 100% savings? (Max rating was 1)
FW714	Eligible Complete	Kitchen faucet aerator	18	Yes	Yes	TRUE	4	2	4	4	4	TRUE	FALSE	contractor suggestion	TRUE	Don't know	0	0	FALSE	doing kitchen update	Liked the style	FALSE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE
GL892	Eligible Complete	Pool pump	3	No	Yes	TRUE	N	1	N	N	N	FALSE	TRUE	The retailer/dealer/contractor told me it was	TRUE	Yes	Yes	0	FALSE	To improve comfort	To save money	TRUE	Central air conditioner	Electric furnace	Electric	TRUE	FALSE	FALSE
DL663	Eligible Complete	Central air conditioner	25	Yes	Yes	TRUE	3	3	2	4	4	TRUE	FALSE	Itâ€™s ENERGY STAR-certified	TRUE	No	0	I wasnâ€™t sure my equipment qualified	TRUE	Needed to replace anyway	To save money	TRUE	Central air conditioner	Gas furnace/boiler	Gas	TRUE	TRUE	FALSE
FN321	Eligible Complete	Kitchen faucet aerator	18	Yes	Yes	TRUE	1	1	1	1	1	FALSE	TRUE	Information about the product from packaging, websites, etc.	TRUE	No	0	Just forgot about it	TRUE	To save energy	0	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE
FN321	Eligible Complete	Bathroom faucet aerator	19	Yes	Yes	TRUE	1	1	1	1	1	FALSE	TRUE	Itâ€™s ENERGY STAR-certified	TRUE	No	0	Just forgot about it	TRUE	To save energy	0	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE
FN321	Eligible Complete	Learning or "smart" thermostat	12	Yes	Yes	TRUE	1	1	1	1	1	FALSE	TRUE	Itâ€™s ENERGY STAR-certified	TRUE	Yes	No	Went through Spire	FALSE	To save energy	0	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE
HB400	Eligible Complete	Central air conditioner	25	Yes	No	TRUE	2	3	2	2	3	TRUE	FALSE	Landlord information	FALSE	Don't know	0	0	FALSE	Needed to replace anyway	Landlord picked it out	FALSE	Central air conditioner	Gas furnace/boiler	Gas	TRUE	FALSE	FALSE
EC945	Eligible Complete	Room air conditioner	1	No	Yes	TRUE	1	N	1	2	0	FALSE	TRUE	Information about the product from packaging, websites, etc.	TRUE	No	0	Don't know	FALSE	Don't know	To save money	TRUE	Central air conditioner	Electric baseboard heating system	Gas	TRUE	FALSE	FALSE
EM809	Eligible Complete	Learning or "smart" thermostat	12	Don't know	Yes	TRUE	2	3	3	4	N	TRUE	FALSE	Itâ€™s ENERGY STAR-certified	TRUE	Don't know	0	0	FALSE	To replace failing equipment	It had other features that I liked	FALSE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE
GV445	Eligible Complete	Showerhead	17	Don't know	Yes	TRUE	1	0	1	1	N	FALSE	TRUE	Itâ€™s ENERGY STAR-certified	TRUE	No	0	I applied, but I did not receive a rebate	FALSE	Was ready to update	To save energy	TRUE	Air-source heat pump	Air-source heat pump	Electric	TRUE	FALSE	FALSE
CR510	Eligible Complete	Room air purifier	2	Yes	No	TRUE	4	2	2	4	0	TRUE	FALSE	The retailer/dealer/contractor told me it was	TRUE	No	0	Don't know	FALSE	To improve comfort	Liked the style	FALSE	Central air conditioner,Ductless or mini-split heat pump ,Air-source heat pump	Ductless or mini-split heat pump ,Air-source heat pump ,Gas furnace/boiler ,Other (please specify): ventless gasElectric	Gas	TRUE	FALSE	FALSE
CR510	Eligible Complete	Bathroom faucet aerator	19	Yes	No	TRUE	0	1	N	N	N	FALSE	TRUE	The retailer/dealer/contractor told me it was	TRUE	No	0	I wasnâ€™t sure my equipment qualified	TRUE	To save energy	0	TRUE	Central air conditioner,Ductless or mini-split heat pump ,Air-source heat pump	Ductless or mini-split heat pump ,Air-source heat pump ,Gas furnace/boiler ,Other (please specify): ventless gasElectric	Gas	FALSE	FALSE	FALSE
CR510	Eligible Complete	Ductless or mini-split heat pump	22	Yes	No	TRUE	4	1	N	2	N	FALSE	TRUE	Itâ€™s ENERGY STAR-certified	TRUE	No	0	I wasnâ€™t sure my equipment qualified	TRUE	To improve comfort	It had other features that I liked	FALSE	Central air conditioner,Ductless or mini-split heat pump ,Air-source heat pump	Ductless or mini-split heat pump ,Air-source heat pump ,Gas furnace/boiler ,Other (please specify): ventless gasElectric	Gas	FALSE	FALSE	FALSE
DV399	Eligible Complete	Bathroom faucet aerator	19	Don't know	Yes	TRUE	2	1	3	2	3	FALSE	TRUE	Itâ€™s ENERGY STAR-certified	TRUE	No	0	Don't know	FALSE	To save energy	0	TRUE	Central air conditioner	Electric furnace	Gas	FALSE	FALSE	FALSE
DV399	Eligible Complete	Learning or "smart" thermostat	12	Don't know	Yes	TRUE	2	3	4	2	2	TRUE	FALSE	Itâ€™s ENERGY STAR-certified	TRUE	Don't know	0	0	FALSE	To save energy	0	TRUE	Central air conditioner	Electric furnace	Gas	TRUE	FALSE	FALSE
DS490	Eligible Complete	Heat pump water heater	11	Yes	No	TRUE	2	0	1	N	2	FALSE	TRUE	The retailer/dealer/contractor told me it was	TRUE	No	0	Don't know	FALSE	Needed to replace anyway	To save money	TRUE	Central air conditioner	Electric furnace	Electric	TRUE	FALSE	FALSE
FC753	Eligible Complete	Hot water pipe insulation for your hot water heater	20	Yes	Yes	TRUE	1	3	N	1	1	FALSE	TRUE	The retailer/dealer/contractor told me it was	TRUE	No	0	I was not aware it was available.	TRUE	I replaced the water heater and the contractor installed the insulation.	The contractor chose.	FALSE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE
LS336	Eligible Complete	Hot water pipe insulation for your hot water heater	20	No	Yes	TRUE	2	3	3	3	3	TRUE	FALSE	personal knowledge	FALSE	No	0	I wasnâ€™t sure my equipment qualified	TRUE	To save energy	0	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE
LS336	Eligible Complete	Learning or "smart" thermostat	12	No	Yes	TRUE	3	3	2	3	3	TRUE	FALSE	Information about the product from packaging, websites, etc.	TRUE	No	0	I wasnâ€™t sure my equipment qualified	TRUE	To save money	0	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE
GY984	Eligible Complete	Room air conditioner	1	Yes	Yes	TRUE	2	0	2	2	0	TRUE	FALSE	Itâ€™s ENERGY STAR-certified	TRUE	No	0	I am still planning to apply	FALSE	To replace failing equipment	It was the only option available	FALSE	Central air conditioner,Window or wall air conditioner	Gas furnace/boiler ,Other (please specify): Electric Wall units	Gas	TRUE	FALSE	FALSE
GA702	Eligible Complete	Kitchen faucet aerator	18	Yes	Yes	TRUE	1	0	2	N	N	FALSE	TRUE	Itâ€™s ENERGY STAR-certified	TRUE	No	0	Just forgot about it	TRUE	To replace failing equipment	It had other features that I liked	FALSE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE
KR656	Eligible Complete	Room air conditioner	1	Yes	Yes	TRUE	N	2	4	3	N	TRUE	FALSE	Itâ€™s ENERGY STAR-certified	TRUE	No	0	I applied, but I did not receive a rebate	FALSE	To improve comfort	To save money	TRUE	Central air conditioner,Window or wall air conditioner	Gas furnace/boiler	Gas	TRUE	FALSE	FALSE
AW714	Eligible Complete	Room air conditioner	1	Yes	Yes	TRUE	2	2	2	2	2	TRUE	FALSE	Information about the product from packaging, websites, etc.	TRUE	No	0	Just forgot about it	TRUE	To improve comfort	It was the only option available	FALSE	Central air conditioner,Portable air conditioner	Gas furnace/boiler	Gas	TRUE	FALSE	FALSE
AW714	Eligible Complete	Showerhead	17	Yes	Yes	TRUE	1	2	1	1	1	FALSE	TRUE	Itâ€™s ENERGY STAR-certified	TRUE	No	0	I wasnâ€™t sure my equipment qualified	TRUE	To replace failing equipment	Liked the style	FALSE	Central air conditioner,Portable air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE
LS931	Eligible Complete	Learning or "smart" thermostat	12	No	Yes	TRUE	1	1	1	2	1	FALSE	TRUE	Information about the product from packaging, websites, etc.	TRUE	No	0	I wasnâ€™t sure my equipment qualified	TRUE	To save energy	0	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE
EM621	Eligible Complete	Showerhead	17	Yes	No	TRUE	2	1	0	0	2	FALSE	TRUE	The retailer/dealer/contractor told me it was	TRUE	No	0	I didnâ€™t know I had the option to do so.	TRUE	To improve comfort	Liked the style	FALSE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE
EM621	Eligible Complete	Bathroom faucet aerator	19	Yes	No	TRUE	0	0	2	1	0	FALSE	TRUE	The retailer/dealer/contractor told me it was	TRUE	No	0	I didnâ€™t know it was an option to do so.	TRUE	Didnâ€™t have one prior	It had other features that I liked	FALSE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE
LG782	Eligible Complete	Learning or "smart" thermostat	12	No	Yes	TRUE	1	0	0	1	0	FALSE	TRUE	Itâ€™s ENERGY STAR-certified	TRUE	Yes	Yes	0	FALSE	To save energy	0	TRUE	Central air conditioner	Gas furnace/boiler	Gas	FALSE	FALSE	FALSE

Measure Information			Criterion A: Familiarity with at least one Ameren Missouri program, rebate, or discount			Criterion B: At least one element of Ameren's program marketing and outreach motivated them to adopt the measure							Criterion D: They had not received a rebate from Ameren, and had not already tried to receive a rebate from Ameren, and they stated a valid reason for not applying for an Ameren rebate				Criterion E: They had a valid reason for deciding to install the measure			Criterion F: The adopted measure generated electric savings, not gas savings			Meeting all criteria	
Account	Cadmus Disposition	Measure	C2. Have you ever seen or heard of Ameren Missouri's energy efficiency programs?	C10. Are you aware that Ameren Missouri offers rebates and discounts for energy-saving equipment in your home ?	Criterion A met? (Yes to C2 or C10)	a) Information about energy savings from Ameren Missouri's marking or bill insert	b) Ameren Missouri's marketing information from a contractor or retailer	c) Information from colleagues or friends who installed energy efficient equipment and received a rebate from Ameren Missouri	d) Past participation in an Ameren Missouri energy efficiency program	e) Information from the energy assessment conducted at your home through Ameren Missouri	Criterion B met for 50% savings? (Max rating was 2)	Criterion B met for 100% savings? (Max rating was 1)	G18. Did you receive a rebate, discount, or tax credit for the tune-up?	G19. Did you get a rebate from Ameren Missouri?	G20. Why didn't you or your contractor apply for a rebate through Ameren Missouri for the tune-up?	Criterion D met? (qualitative assessment)	G17. Which of the following reasons best describe why you decided to install have the tune-up?	G17. Other categories	Criterion E met? (qualitative assessment)	Cooling System	Heating System	Criterion F met? (depends on the measure)	Criterion B met for 50% savings? (Max rating was 2)	Criterion B met for 100% savings? (Max rating was 1)
MH230	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	2	3	N	2	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	To improve home comfort		FALSE	Central air conditioner	Electric furnace	TRUE	FALSE	FALSE
EQ805	Eligible Complete	Heat Pump Tune-Up	Yes	No	TRUE	2	N	N	3	N	TRUE	FALSE	No		Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	FALSE	FALSE	FALSE
HZ466	Eligible Complete	Heat Pump Tune-Up	Yes	No	TRUE	2	2	2	2	2	TRUE	FALSE	No		I am still planning to apply	FALSE	To save energy		TRUE	Portable air conditioner	Air-source heat pump	FALSE	FALSE	FALSE
KU900	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	2	1	1	2	FALSE	TRUE	No		Don't know	FALSE	To improve home comfort		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
EC307	Eligible Complete	Air Conditioner Tune-Up	Don't know	Yes	TRUE	1	2	2	2	2	FALSE	TRUE	No		Did not know about it	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
LA504	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	1	2	1	1	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Don't know Gas	TRUE	FALSE	FALSE
LP856	Eligible Complete	Air Conditioner Tune-Up	No	Yes	TRUE	1	1	D	2	2	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
HZ948	Eligible Complete	Air Conditioner Tune-Up	No	Yes	TRUE	1	3	3	N	3	FALSE	TRUE	Yes	No	Was not aware	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
HE709	Eligible Complete	Heat Pump Tune-Up	No	Yes	TRUE	1	2	2	3	3	FALSE	TRUE	No		Just forgot about it	TRUE	To make repairs or replacements		FALSE	Ground-source or geothermal heat pump	Ground-source or geothermal heat pump	TRUE	FALSE	FALSE
HT983	Eligible Complete	Heat Pump Tune-Up	No	Yes	TRUE	2	1	1	D	D	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	To save money		TRUE	Don't know	Gas furnace/boiler ,Electric furnace	FALSE	FALSE	FALSE
AZ138	Eligible Complete	Heat Pump Tune-Up	No	Yes	TRUE	1	2	2	2	3	FALSE	TRUE	Yes	No	Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	FALSE	FALSE	FALSE
CC347	Eligible Complete	Heat Pump Tune-Up	Don't know	Yes	TRUE	2	2	3	D	3	TRUE	FALSE	No		never heard of a rebate	TRUE	It was part of routine maintenance		FALSE	Air-source heat pump	Gas furnace/boiler	FALSE	FALSE	FALSE
CU402	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	2	2	2	2	2	TRUE	FALSE	No		Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	FALSE	FALSE	FALSE
AM444	Eligible Complete	Air Conditioner Tune-Up	Yes	No	TRUE	1	2	2	3	2	FALSE	TRUE	No		Donâ€™t know about program	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Electric furnace	TRUE	FALSE	FALSE
KC273	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	2	2	2	4	FALSE	TRUE	No		Did not know	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
HZ575	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	1	3	N	N	FALSE	TRUE	No		I am a service tech	FALSE	It was part of routine maintenance		FALSE	Central air conditioner,Window or wall	Gas furnace/boiler ,Electric	TRUE	FALSE	FALSE
FF200	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	D	D	2	D	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	to save energy which saves money	To save energy	TRUE	Central air conditioner	Electric furnace	TRUE	TRUE	FALSE
LG594	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	N	2	3	2	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	To make repairs or replacements		FALSE	Central air conditioner	Electric furnace	TRUE	FALSE	FALSE
HB963	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	D	3	2	2	D	TRUE	FALSE	No		Don't know	FALSE	It was part of routine maintenance		FALSE	Air-source heat pump	Air-source heat pump	TRUE	FALSE	FALSE
GS751	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	2	D	N	2	TRUE	FALSE	No		Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
AZ682	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	1	1	1	1	FALSE	TRUE	Don't know		0	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
EM824	Eligible Complete	Air Conditioner Tune-Up	No	Yes	TRUE	2	2	2	2	2	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	To make repairs or replacements		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
KR706	Eligible Complete	Air Conditioner Tune-Up	No	Yes	TRUE	1	2	2	1	1	FALSE	TRUE	No		Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
CK709	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	3	2	2	N	TRUE	FALSE	No		Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
DG643	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	2	3	2	2	TRUE	FALSE	No		Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
AQ956	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	D	1	N	N	D	FALSE	TRUE	No		did not know about rebate	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
HQ756	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	2	3	2	2	TRUE	FALSE	No		Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
CF580	Eligible Complete	Heat Pump Tune-Up	No	Yes	TRUE	2	N	N	N	2	TRUE	FALSE	No		it came with the house when we buy it	FALSE	It was part of routine maintenance		FALSE	Central air conditioner,Window or wall air conditioner	Gas furnace/boiler	FALSE	FALSE	FALSE
FF714	Eligible Complete	Heat Pump Tune-Up	Yes	No	TRUE	1	4	1	1	2	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	To make repairs or replacements		FALSE	Central air conditioner	Electric furnace	FALSE	FALSE	FALSE
EC611	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	2	N	2	D	1	FALSE	TRUE	No		Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	FALSE	FALSE	FALSE
EC924	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	3	2	4	3	3	TRUE	FALSE	No		Just forgot about it	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
CN474	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	3	1	2	3	3	FALSE	TRUE	No		Just forgot about it	TRUE	To save energy		TRUE	Central air conditioner	None	TRUE	FALSE	TRUE
KK523	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	1	3	3	2	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner,Air-source heat	Air-source heat pump	TRUE	FALSE	FALSE
AW844	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	2	1	2	2	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	To make repairs or replacements		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
MB566	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	2	2	2	2	2	TRUE	FALSE	No		Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner,Air-source heat	Air-source heat pump ,Electric furnace	TRUE	FALSE	FALSE
FC626	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	D	4	3	2	3	TRUE	FALSE	Yes	No	Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
KC540	Eligible Complete	Air Conditioner Tune-Up	Don't know	Yes	TRUE	2	2	3	3	3	TRUE	FALSE	Don't know		0	FALSE	It was part of routine maintenance		FALSE	Central air conditioner,Other (please	Gas furnace/boiler	TRUE	FALSE	FALSE
FC923	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	2	2	2	1	FALSE	TRUE	No		Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Electric furnace	TRUE	FALSE	FALSE
CR908	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	3	3	3	2	3	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
DV615	Eligible Complete	Heat Pump Tune-Up	Yes	No	TRUE	2	N	N	N	N	TRUE	FALSE	No		Didn't know	TRUE	To make repairs or replacements		FALSE	Central air conditioner	Electric furnace	FALSE	FALSE	FALSE
AW773	Eligible Complete	Air Conditioner Tune-Up	No	Yes	TRUE	2	3	2	4	2	TRUE	FALSE	Don't know		0	FALSE	To make repairs or replacements		FALSE	Central air conditioner,Window or wall	Gas furnace/boiler	TRUE	FALSE	FALSE
MQ357	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	3	2	3	1	2	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	To save money		TRUE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	TRUE
DA758	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	D	1	1	2	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	To save energy		TRUE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	TRUE
LY193	Eligible Complete	Air Conditioner Tune-Up	Don't know	Yes	TRUE	2	3	D	N	D	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
AZ719	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	2	2	2	2	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
HT597	Eligible Complete	Air Conditioner Tune-Up	Yes	Don't know	TRUE	1	1	1	1	1	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
KF345	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	1	1	1	1	FALSE	TRUE	No		Just forgot about it	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE

Measure Information			Criterion A: Familiarity with at least one Ameren Missouri program, rebate, or discount			Criterion B: At least one element of Ameren's program marketing and outreach motivated them to adopt the measure							Criterion D: They had not received a rebate from Ameren, and had not already tried to receive a rebate from Ameren, and they stated a valid reason for not applying for an Ameren rebate				Criterion E: They had a valid reason for deciding to install the measure			Criterion F: The adopted measure generated electric savings, not gas savings			Meeting all criteria	
Account	Cadmus Disposition	Measure	C2. Have you ever seen or heard of Ameren Missouri's energy efficiency programs?	C10. Are you aware that Ameren Missouri offers rebates and discounts for energy-saving equipment in your home ?	Criterion A met? (Yes to C2 or C10)	a) Information about energy savings from Ameren Missouri's marking or bill insert	b) Ameren Missouri's marketing information from a contractor or retailer	c) Information from colleagues or friends who installed energy efficient equipment and received a rebate from Ameren Missouri	d) Past participation in an Ameren Missouri energy efficiency program	e) Information from the energy assessment conducted at your home through Ameren Missouri	Criterion B met for 50% savings? (Max rating was 2)	Criterion B met for 100% savings? (Max rating was 1)	G18. Did you receive a rebate, discount, or tax credit for the tune-up?	G19. Did you get a rebate from Ameren Missouri?	G20. Why didn't you or your contractor apply for a rebate through Ameren Missouri for the tune-up?	Criterion D met? (qualitative assessment)	G17. Which of the following reasons best describe why you decided to install have the tune-up?	G17. Other categories	Criterion E met? (qualitative assessment)	Cooling System	Heating System	Criterion F met? (depends on the measure)	Criterion B met for 50% savings? (Max rating was 2)	Criterion B met for 100% savings? (Max rating was 1)
DA769	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	3	2	N	2	2	TRUE	FALSE	No		did not know i could	TRUE	To make repairs or replacements		FALSE	Central air conditioner,Air-source heat	Air-source heat pump ,Electric furnace	TRUE	FALSE	FALSE
LY519	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	2	N	1	N	2	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Ground-source or geothermal heat pump	FALSE	FALSE	FALSE
KK264	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	4	2	D	2	2	TRUE	FALSE	Yes	No	I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
LP768	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	3	3	2	3	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Air-source heat pump ,Electric furnace	TRUE	FALSE	FALSE
ME728	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	1	1	1	1	FALSE	TRUE	No		Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
FN865	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	3	4	2	2	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
HH386	Eligible Complete	Air Conditioner Tune-Up	No	Yes	TRUE	2	3	N	2	N	TRUE	FALSE	Yes	No	I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
EQ874	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	1	1	1	N	FALSE	TRUE	No		Don't know	FALSE	To make repairs or replacements		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
KK133	Eligible Complete	Air Conditioner Tune-Up	No	Yes	TRUE	2	D	2	D	2	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	To make repairs or replacements		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
CR503	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	3	2	4	4	4	TRUE	FALSE	Yes	No	I wasnâ€™t sure the tune-up qualified	TRUE	To save money		TRUE	Central air conditioner,Air-source heat	Air-source heat pump ,Electric furnace	TRUE	TRUE	FALSE
LY806	Eligible Complete	Air Conditioner Tune-Up	Yes	No	TRUE	1	1	1	1	1	FALSE	TRUE	No		Don't know	FALSE	To save money		TRUE	Air-source heat pump	Air-source heat pump	FALSE	FALSE	FALSE
LV897	Eligible Complete	Air Conditioner Tune-Up	No	Yes	TRUE	2	D	2	2	1	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	To save energy		TRUE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	TRUE
DG449	Eligible Complete	Air Conditioner Tune-Up	Yes	No	TRUE	2	4	N	N	N	TRUE	FALSE	Yes	No	I wasn't aware that existed	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
MB658	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	1	1	1	1	1	FALSE	TRUE	No		Just forgot about it	TRUE	It was part of routine maintenance		FALSE	Window or wall air conditioner	Gas furnace/boiler ,Electric furnace	FALSE	FALSE	FALSE
AZ614	Eligible Complete	Air Conditioner Tune-Up	Yes	No	TRUE	2	2	3	2	2	TRUE	FALSE	No		Just forgot about it	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
KN821	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	4	4	N	4	TRUE	FALSE	No		Didnâ€™t have to pay bill	TRUE	To make repairs or replacements		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
HE674	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	1	1	1	1	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	To improve home comfort		FALSE	Central air conditioner	Electric furnace	TRUE	FALSE	FALSE
FN804	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	4	2	3	2	FALSE	TRUE	No		Just forgot about it	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Electric furnace	TRUE	FALSE	FALSE
EM326	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	1	1	1	1	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Electric furnace	TRUE	FALSE	FALSE
AT281	Eligible Complete	Heat Pump Tune-Up	Yes	No	TRUE	1	1	2	1	1	FALSE	TRUE	No		warranty	FALSE	To make repairs or replacements		FALSE	Air-source heat pump	Air-source heat pump ,Electric furnace	TRUE	FALSE	FALSE
CC985	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	1	D	D	1	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
MB218	Eligible Complete	Heat Pump Tune-Up	Yes	No	TRUE	1	N	N	N	N	FALSE	TRUE	No		Nothing was said	TRUE	To make repairs or replacements		FALSE	Central air conditioner,Window or wall	Electric furnace	FALSE	FALSE	FALSE
LD421	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	2	2	3	3	2	TRUE	FALSE	No		Don't know	FALSE	It was part of routine maintenance		FALSE	Air-source heat pump	Air-source heat pump ,Gas furnace/boiler	TRUE	FALSE	FALSE
HM766	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	3	3	3	4	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
AZ612	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	N	N	N	1	N	FALSE	TRUE	No		Rent	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Electric furnace	TRUE	FALSE	FALSE
MH877	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	4	1	1	1	FALSE	TRUE	No		Just forgot about it	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
FN596	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	4	4	3	1	4	FALSE	TRUE	No		I did not know I could get a rebate	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
FK731	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	3	3	N	N	TRUE	FALSE	No		Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
ET174	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	N	N	N	2	N	TRUE	FALSE	No		Did not know about it	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
GA803	Eligible Complete	Air Conditioner Tune-Up	Yes	No	TRUE	1	2	1	1	1	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
KN605	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	3	4	4	4	TRUE	FALSE	No		Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
GG846	Eligible Complete	Heat Pump Tune-Up	Yes	No	TRUE	1	3	3	1	3	FALSE	TRUE	Yes	Yes	0	FALSE	To save money		TRUE	Central air conditioner,Air-source heat	Air-source heat pump	TRUE	FALSE	FALSE
DL469	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	2	2	2	2	TRUE	FALSE	Yes	No	I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner,Portable air	Gas furnace/boiler	TRUE	FALSE	FALSE
AM426	Eligible Complete	Air Conditioner Tune-Up	Don't know	Yes	TRUE	2	4	1	N	2	FALSE	TRUE	Don't know		0	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
FX382	Eligible Complete	Air Conditioner Tune-Up	Don't know	Yes	TRUE	1	2	1	4	2	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	To make repairs or replacements		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
CC997	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	4	4	4	1	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	To improve home comfort		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
FN707	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	3	2	2	2	TRUE	FALSE	No		Don't know	FALSE	To make repairs or replacements		FALSE	Central air conditioner	Electric furnace	TRUE	FALSE	FALSE
GD625	Eligible Complete	Heat Pump Tune-Up	Yes	No	TRUE	2	3	D	D	D	TRUE	FALSE	No		Don't know	FALSE	To save money		TRUE	Air-source heat pump	Air-source heat pump	TRUE	FALSE	FALSE
FC411	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	N	N	N	N	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	To improve home comfort		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
KN412	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	2	2	N	N	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
AT538	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	3	3	3	D	TRUE	FALSE	No		DIDN'T QUALIFY	FALSE	To make repairs or replacements		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
DY838	Eligible Complete	Air Conditioner Tune-Up	No	Yes	TRUE	2	1	1	2	3	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	To make repairs or replacements		FALSE	Central air conditioner,Other (please	Electric furnace	TRUE	FALSE	FALSE
GL405	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	1	4	4	4	2	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	To save energy		TRUE	Central air conditioner	Don't know Gas	FALSE	FALSE	FALSE
CU459	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	3	2	2	D	TRUE	FALSE	No		Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner,Other (please	Gas furnace/boiler	TRUE	FALSE	FALSE
GL524	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	2	2	N	N	N	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	To improve home comfort		FALSE	Central air conditioner,Air-source heat	Air-source heat pump	TRUE	FALSE	FALSE
FK566	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	1	4	2	3	2	FALSE	TRUE	No		Just forgot about it	TRUE	It was part of routine maintenance		FALSE	Ground-source or geothermal heat pump	Ground-source or geothermal heat pump	TRUE	FALSE	FALSE
CF378	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	4	2	2	2	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
CC579	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	2	3	2	2	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE

Measure Information			Criterion A: Familiarity with at least one Ameren Missouri program, rebate, or discount			Criterion B: At least one element of Ameren's program marketing and outreach motivated them to adopt the measure							Criterion D: They had not received a rebate from Ameren, and had not already tried to receive a rebate from Ameren, and they stated a valid reason for not applying for an Ameren rebate				Criterion E: They had a valid reason for deciding to install the measure			Criterion F: The adopted measure generated electric savings, not gas savings			Meeting all criteria	
Account	Cadmus Disposition	Measure	C2. Have you ever seen or heard of Ameren Missouri's energy efficiency programs?	C10. Are you aware that Ameren Missouri offers rebates and discounts for energy-saving equipment in your home ?	Criterion A met? (Yes to C2 or C10)	a) Information about energy savings from Ameren Missouri's marking or bill insert	b) Ameren Missouri's marketing information from a contractor or retailer	c) Information from colleagues or friends who installed energy efficient equipment and received a rebate from Ameren Missouri	d) Past participation in an Ameren Missouri energy efficiency program	e) Information from the energy assessment conducted at your home through Ameren Missouri	Criterion B met for 50% savings? (Max rating was 2)	Criterion B met for 100% savings? (Max rating was 1)	G18. Did you receive a rebate, discount, or tax credit for the tune-up?	G19. Did you get a rebate from Ameren Missouri?	G20. Why didn't you or your contractor apply for a rebate through Ameren Missouri for the tune-up?	Criterion D met? (qualitative assessment)	G17. Which of the following reasons best describe why you decided to install have the tune-up?	G17. Other categories	Criterion E met? (qualitative assessment)	Cooling System	Heating System	Criterion F met? (depends on the measure)	Criterion B met for 50% savings? (Max rating was 2)	Criterion B met for 100% savings? (Max rating was 1)
FR434	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	4	2	N	2	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
FW475	Eligible Complete	Air Conditioner Tune-Up	Yes	No	TRUE	2	4	2	2	3	TRUE	FALSE	No		Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
EH359	Eligible Complete	Heat Pump Tune-Up	Yes	No	TRUE	2	4	2	N	2	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Other (please specify): forced hot airGas	FALSE	FALSE	FALSE
KX200	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	2	2	N	1	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
DA179	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	1	1	D	D	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
KX804	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	2	3	3	2	2	TRUE	FALSE	No		Just forgot about it	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	FALSE	FALSE	FALSE
LL794	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	2	2	N	3	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
KX380	Eligible Complete	Air Conditioner Tune-Up	Yes	No	TRUE	2	1	2	1	1	FALSE	TRUE	No		I AM A RENTER	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Electric furnace	TRUE	FALSE	FALSE
KC323	Eligible Complete	Air Conditioner Tune-Up	No	Yes	TRUE	3	4	3	4	2	TRUE	FALSE	No		I DIDN'TKNOW	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
AQ926	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	1	2	2	1	1	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Electric baseboard heating system	FALSE	FALSE	FALSE
HT221	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	1	1	2	1	FALSE	TRUE	No		DID WORK MYSELF	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
LA605	Eligible Complete	Air Conditioner Tune-Up	Yes	No	TRUE	1	1	1	1	1	FALSE	TRUE	No		Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
KX183	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	2	4	2	4	TRUE	FALSE	No		didn't know	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
MH620	Eligible Complete	Heat Pump Tune-Up	No	Yes	TRUE	2	3	2	4	2	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner,Window or wall	Gas furnace/boiler	FALSE	FALSE	FALSE
HQ162	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	3	3	2	4	TRUE	FALSE	No		Didnt know about it	TRUE	It was part of routine maintenance		FALSE	Central air conditioner,Other (please	Gas furnace/boiler	TRUE	FALSE	FALSE
DD710	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	2	4	N	2	TRUE	FALSE	No		Just forgot about it	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
KC625	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	2	2	3	2	2	TRUE	FALSE	Yes	No	I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Electric furnace	FALSE	FALSE	FALSE
DL283	Eligible Complete	Air Conditioner Tune-Up	No	Yes	TRUE	2	4	2	4	N	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
HH998	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	2	2	2	2	2	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner,Air-source heat	Electric furnace	FALSE	FALSE	FALSE
HM667	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	2	2	3	2	2	TRUE	FALSE	No		Don't know	FALSE	To make repairs or replacements		FALSE	Central air conditioner,Window or wall	Gas furnace/boiler	FALSE	FALSE	FALSE
DV867	Eligible Complete	Air Conditioner Tune-Up	No	Yes	TRUE	3	2	2	4	N	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
AW934	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	1	D	D	D	D	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Ground-source or geothermal heat pump	Ground-source or geothermal heat pump	TRUE	FALSE	FALSE
HT280	Eligible Complete	Heat Pump Tune-Up	Don't know	Yes	TRUE	2	N	1	N	N	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	FALSE	FALSE	FALSE
CK138	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	1	2	2	2	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	To save money		TRUE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	TRUE
KF402	Eligible Complete	Air Conditioner Tune-Up	Don't know	Yes	TRUE	2	D	D	D	D	TRUE	FALSE	Yes	No	Just forgot about it	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
GV432	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	1	1	1	1	1	FALSE	TRUE	No		Not a Ameren contractor	FALSE	To make repairs or replacements		FALSE	Air-source heat pump	Gas furnace/boiler	FALSE	FALSE	FALSE
DL471	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	D	2	N	2	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
FW142	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	1	N	N	N	N	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	FALSE	FALSE	FALSE
ME654	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	4	1	1	3	3	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Electric furnace	FALSE	FALSE	FALSE
LV647	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	1	1	1	1	1	FALSE	TRUE	Yes	Yes	0	FALSE	To save money		TRUE	Central air conditioner	Electric furnace	FALSE	FALSE	FALSE
HT389	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	3	2	3	3	3	TRUE	FALSE	No		rebate on A-coil	TRUE	To make repairs or replacements		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
CR214	Eligible Complete	Air Conditioner Tune-Up	Don't know	Yes	TRUE	3	2	2	4	3	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
LD740	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	D	D	D	D	2	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner,Ductless or mini-	Ductless or mini-split heat pump ,Electric	TRUE	FALSE	FALSE
KX429	Eligible Complete	Air Conditioner Tune-Up	No	Yes	TRUE	1	1	1	1	1	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Other (please specify): gas furnaceGas	TRUE	FALSE	FALSE
EC510	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	3	3	3	3	TRUE	FALSE	No		Don't know	FALSE	To make repairs or replacements		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
KC209	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	3	3	3	3	2	TRUE	FALSE	No		Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
CF385	Eligible Complete	Air Conditioner Tune-Up	No	Yes	TRUE	N	1	N	N	N	FALSE	TRUE	Yes	Yes	0	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
HQ172	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	2	2	2	2	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	To improve home comfort		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
HZ674	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	3	2	N	2	TRUE	FALSE	No		dont know about it	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
GV549	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	2	1	4	4	3	FALSE	TRUE	No		Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	FALSE	FALSE	FALSE
DL786	Eligible Complete	Air Conditioner Tune-Up	No	Yes	TRUE	3	3	3	3	2	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
HT637	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	3	1	2	2	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Air-source heat pump ,Other (please	TRUE	FALSE	FALSE
AW310	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	3	3	N	N	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
DD188	Eligible Complete	Air Conditioner Tune-Up	No	Yes	TRUE	1	1	1	D	1	FALSE	TRUE	No		Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
HZ812	Eligible Complete	Air Conditioner Tune-Up	No	Yes	TRUE	1	2	2	2	1	FALSE	TRUE	No		Didnâ€™t know you could	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
KF535	Eligible Complete	Air Conditioner Tune-Up	Yes	Don't know	TRUE	2	1	2	2	2	FALSE	TRUE	No		Don't know	FALSE	To make repairs or replacements		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
CK483	Eligible Complete	Air Conditioner Tune-Up	Don't know	Yes	TRUE	2	3	2	2	3	TRUE	FALSE	No		didn't know about it	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
HM916	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	2	2	2	D	TRUE	FALSE	No		Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE

Measure Information			Criterion A: Familiarity with at least one Ameren Missouri program, rebate, or discount			Criterion B: At least one element of Ameren's program marketing and outreach motivated them to adopt the measure							Criterion D: They had not received a rebate from Ameren, and had not already tried to receive a rebate from Ameren, and they stated a valid reason for not applying for an Ameren rebate				Criterion E: They had a valid reason for deciding to install the measure			Criterion F: The adopted measure generated electric savings, not gas savings			Meeting all criteria	
Account	Cadmus Disposition	Measure	C2. Have you ever seen or heard of Ameren Missouri's energy efficiency programs?	C10. Are you aware that Ameren Missouri offers rebates and discounts for energy-saving equipment in your home ?	Criterion A met? (Yes to C2 or C10)	a) Information about energy savings from Ameren Missouri's marking or bill insert	b) Ameren Missouri's marketing information from a contractor or retailer	c) Information from colleagues or friends who installed energy efficient equipment and received a rebate from Ameren Missouri	d) Past participation in an Ameren Missouri energy efficiency program	e) Information from the energy assessment conducted at your home through Ameren Missouri	Criterion B met for 50% savings? (Max rating was 2)	Criterion B met for 100% savings? (Max rating was 1)	G18. Did you receive a rebate, discount, or tax credit for the tune-up?	G19. Did you get a rebate from Ameren Missouri?	G20. Why didn't you or your contractor apply for a rebate through Ameren Missouri for the tune-up?	Criterion D met? (qualitative assessment)	G17. Which of the following reasons best describe why you decided to install have the tune-up?	G17. Other categories	Criterion E met? (qualitative assessment)	Cooling System	Heating System	Criterion F met? (depends on the measure)	Criterion B met for 50% savings? (Max rating was 2)	Criterion B met for 100% savings? (Max rating was 1)
DL956	Eligible Complete	Air Conditioner Tune-Up	Yes	No	TRUE	2	2	N	N	N	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
DG687	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	1	4	2	4	2	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	To make repairs or replacements		FALSE	Central air conditioner	Gas furnace/boiler	FALSE	FALSE	FALSE
EC163	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	4	2	3	1	FALSE	TRUE	No		NOT SURE IF APARTMENT MANAGEMENT WOULD	FALSE	To make repairs or replacements		FALSE	Central air conditioner	Electric furnace	TRUE	FALSE	FALSE
KU536	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	N	N	2	N	N	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner,Evaporative	Electric furnace	TRUE	FALSE	FALSE
HW501	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	N	N	N	N	TRUE	FALSE	Yes	No	I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
DA645	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	3	3	4	4	1	FALSE	TRUE	No		This is an apartment	FALSE	Stopped Working	To make repairs or replacements	FALSE	Central air conditioner	Air-source heat pump ,Electric furnace	TRUE	FALSE	FALSE
HB229	Eligible Complete	Air Conditioner Tune-Up	No	Yes	TRUE	2	2	3	3	2	TRUE	FALSE	No		Just forgot about it	TRUE	To make repairs or replacements		FALSE	Central air conditioner	Electric furnace	TRUE	FALSE	FALSE
KU935	Eligible Complete	Air Conditioner Tune-Up	Yes	No	TRUE	2	3	3	3	2	TRUE	FALSE	No		DYI	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
HH536	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	2	1	2	2	FALSE	TRUE	No		Just forgot about it	TRUE	To save money		TRUE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	TRUE
DP576	Eligible Complete	Air Conditioner Tune-Up	Don't know	Yes	TRUE	2	3	4	3	2	TRUE	FALSE	No		Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
DG456	Eligible Complete	Air Conditioner Tune-Up	Don't know	Yes	TRUE	2	3	4	2	2	TRUE	FALSE	Yes	No	I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
HH835	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	1	D	1	D	D	FALSE	TRUE	Yes	No	Don't know	FALSE	It was part of routine maintenance		FALSE	Don't know	Don't know Gas	FALSE	FALSE	FALSE
KF448	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	1	1	1	2	FALSE	TRUE	No		Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
KC997	Eligible Complete	Air Conditioner Tune-Up	Don't know	Yes	TRUE	2	D	D	D	N	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
DG686	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	1	1	N	1	FALSE	TRUE	No		Don't know	FALSE	To improve home comfort		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
EE345	Eligible Complete	Air Conditioner Tune-Up	No	Yes	TRUE	2	1	2	N	N	FALSE	TRUE	Yes	Yes	0	FALSE	To make repairs or replacements		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
KX908	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	4	4	2	4	4	TRUE	FALSE	No		did'nt know about rebate	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
KF482	Eligible Complete	Air Conditioner Tune-Up	Don't know	Yes	TRUE	2	2	2	N	2	TRUE	FALSE	No		Don't know	FALSE	To make repairs or replacements		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
AT686	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	3	3	N	4	TRUE	FALSE	Yes	No	I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
LS483	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	3	2	N	D	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
DS888	Eligible Complete	Air Conditioner Tune-Up	Don't know	Yes	TRUE	2	2	4	N	N	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
AQ339	Eligible Complete	Heat Pump Tune-Up	No	Yes	TRUE	2	2	2	2	2	TRUE	FALSE	No		Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Air-source heat pump	FALSE	FALSE	FALSE
MH343	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	3	2	2	2	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
DP207	Eligible Complete	Heat Pump Tune-Up	Yes	No	TRUE	1	2	1	2	1	FALSE	TRUE	Don't know		0	FALSE	To save energy		TRUE	Central air conditioner	Gas furnace/boiler	FALSE	FALSE	FALSE
LG889	Eligible Complete	Air Conditioner Tune-Up	No	Yes	TRUE	2	3	2	3	2	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
DA916	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	3	2	3	2	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Electric furnace	TRUE	FALSE	FALSE
DY321	Eligible Complete	Heat Pump Tune-Up	Yes	No	TRUE	2	2	2	2	1	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	FALSE	FALSE	FALSE
FC841	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	2	1	1	1	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
AQ553	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	D	N	N	N	1	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	To save money		TRUE	Central air conditioner	Gas furnace/boiler	FALSE	FALSE	FALSE
DD535	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	1	1	1	1	FALSE	TRUE	Don't know		0	FALSE	To save money		TRUE	Don't know	Don't know Electric	FALSE	FALSE	FALSE
FC336	Eligible Complete	Heat Pump Tune-Up	Yes	No	TRUE	1	1	1	2	1	FALSE	TRUE	No		Don't know	FALSE	To make repairs or replacements		FALSE	Central air conditioner	Air-source heat pump	FALSE	FALSE	FALSE
HW199	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	2	3	1	3	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
MB428	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	2	2	2	2	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler ,Electric furnace	TRUE	FALSE	FALSE
GS273	Eligible Complete	Air Conditioner Tune-Up	No	Yes	TRUE	2	N	N	N	N	TRUE	FALSE	Yes	No	Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
KU826	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	D	3	2	D	2	TRUE	FALSE	No		Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
ME336	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	D	2	3	2	N	TRUE	FALSE	Yes	No	I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
CF336	Eligible Complete	Air Conditioner Tune-Up	No	Yes	TRUE	1	1	1	1	1	FALSE	TRUE	Don't know		0	FALSE	To make repairs or replacements		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
GP525	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	4	4	D	3	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Electric furnace	TRUE	FALSE	FALSE
LP903	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	3	3	3	2	TRUE	FALSE	Yes	Don't know	0	FALSE	I am going to say it was part of routine maintenace. it was just the annual furnace and air conditionin checkup	It was part of routine maintenance	FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
FK656	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	3	3	2	4	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	To make repairs or replacements		FALSE	Central air conditioner	Electric furnace ,Other (please specify): Wood	TRUE	FALSE	FALSE
GL511	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	D	3	D	1	FALSE	TRUE	No		Just forgot about it	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Electric furnace	TRUE	FALSE	FALSE
MQ155	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	1	2	N	2	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	To make repairs or replacements		FALSE	Central air conditioner	Electric furnace	TRUE	FALSE	FALSE
CX587	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	2	4	4	N	2	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	To make repairs or replacements		FALSE	Central air conditioner	Gas furnace/boiler	FALSE	FALSE	FALSE
CX453	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	N	N	N	N	TRUE	FALSE	No		Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner,Window or wall	Electric furnace	TRUE	FALSE	FALSE
EE823	Eligible Complete	Air Conditioner Tune-Up	Yes	No	TRUE	D	D	1	D	N	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE

Measure Information			Criterion A: Familiarity with at least one Ameren Missouri program, rebate, or discount			Criterion B: At least one element of Ameren's program marketing and outreach motivated them to adopt the measure							Criterion D: They had not received a rebate from Ameren, and had not already tried to receive a rebate from Ameren, and they stated a valid reason for not applying for an Ameren rebate				Criterion E: They had a valid reason for deciding to install the measure			Criterion F: The adopted measure generated electric savings, not gas savings			Meeting all criteria	
Account	Cadmus Disposition	Measure	C2. Have you ever seen or heard of Ameren Missouri's energy efficiency programs?	C10. Are you aware that Ameren Missouri offers rebates and discounts for energy-saving equipment in your home ?	Criterion A met? (Yes to C2 or C10)	a) Information about energy savings from Ameren Missouri's marking or bill insert	b) Ameren Missouri's marketing information from a contractor or retailer	c) Information from colleagues or friends who installed energy efficient equipment and received a rebate from Ameren Missouri	d) Past participation in an Ameren Missouri energy efficiency program	e) Information from the energy assessment conducted at your home through Ameren Missouri	Criterion B met for 50% savings? (Max rating was 2)	Criterion B met for 100% savings? (Max rating was 1)	G18. Did you receive a rebate, discount, or tax credit for the tune-up?	G19. Did you get a rebate from Ameren Missouri?	G20. Why didn't you or your contractor apply for a rebate through Ameren Missouri for the tune-up?	Criterion D met? (qualitative assessment)	G17. Which of the following reasons best describe why you decided to install have the tune-up?	G17. Other categories	Criterion E met? (qualitative assessment)	Cooling System	Heating System	Criterion F met? (depends on the measure)	Criterion B met for 50% savings? (Max rating was 2)	Criterion B met for 100% savings? (Max rating was 1)
HZ272	Eligible Complete	Heat Pump Tune-Up	Don't know	Yes	TRUE	4	4	2	N	4	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	FALSE	FALSE	FALSE
CF180	Eligible Complete	Air Conditioner Tune-Up	Yes	No	TRUE	2	2	2	2	2	TRUE	FALSE	No		Don't know	FALSE	To save money		TRUE	Central air conditioner	Electric furnace	TRUE	FALSE	FALSE
KK562	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	N	D	3	3	TRUE	FALSE	No		Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
FF193	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	3	2	3	3	3	TRUE	FALSE	Don't know		0	FALSE	To make repairs or replacements		FALSE	Central air conditioner	Electric furnace	TRUE	FALSE	FALSE
AM359	Eligible Complete	Heat Pump Tune-Up	Don't know	Yes	TRUE	2	2	2	2	2	TRUE	FALSE	No		Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Air-source heat pump ,Electric furnace	FALSE	FALSE	FALSE
DL180	Eligible Complete	Heat Pump Tune-Up	Yes	No	TRUE	2	D	3	N	1	FALSE	TRUE	No		did not know about it	TRUE	It was part of routine maintenance		FALSE	Air-source heat pump	Gas furnace/boiler	FALSE	FALSE	FALSE
CF125	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	4	4	N	4	TRUE	FALSE	No		friend did it	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
FN458	Eligible Complete	Air Conditioner Tune-Up	Yes	No	TRUE	2	2	2	2	2	TRUE	FALSE	No		Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
CK413	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	1	2	1	2	1	FALSE	TRUE	No		Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Air-source heat pump	FALSE	FALSE	FALSE
CN931	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	1	1	3	1	FALSE	TRUE	No		did not know there was a rebate for a tune-up	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
HE850	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	3	3	4	4	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
LV969	Eligible Complete	Air Conditioner Tune-Up	No	Yes	TRUE	2	2	2	3	1	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
LL303	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	N	N	N	N	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
KU355	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	D	2	N	2	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner,Ductless or mini-	Ductless or mini-split heat pump ,Air-	TRUE	FALSE	FALSE
GP623	Eligible Complete	Air Conditioner Tune-Up	No	Yes	TRUE	1	1	N	N	1	FALSE	TRUE	No		Don't know	FALSE	To make repairs or replacements		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
HM789	Eligible Complete	Air Conditioner Tune-Up	No	Yes	TRUE	1	3	2	N	N	FALSE	TRUE	No		Just forgot about it	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
FC754	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	3	2	2	3	3	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
HQ457	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	2	2	2	2	TRUE	FALSE	No		Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
GL897	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	2	2	2	2	TRUE	FALSE	No		Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner,Portable air	Gas furnace/boiler	TRUE	FALSE	FALSE
HT177	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	1	2	1	1	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
FW663	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	N	N	4	N	TRUE	FALSE	No		Did not know work was eligible for a rebate	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
CU760	Eligible Complete	Heat Pump Tune-Up	Yes	No	TRUE	2	2	3	4	3	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	To make repairs or replacements		FALSE	Window or wall air conditioner	Electric baseboard heating	FALSE	FALSE	FALSE
KK888	Eligible Complete	Air Conditioner Tune-Up	Don't know	Yes	TRUE	2	3	2	2	2	TRUE	FALSE	No		Don't know	FALSE	To save money		TRUE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
AQ657	Eligible Complete	Heat Pump Tune-Up	Yes	No	TRUE	1	1	4	1	1	FALSE	TRUE	No		Just forgot about it	TRUE	To save energy		TRUE	Central air conditioner	Electric furnace	FALSE	FALSE	FALSE
KR222	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	4	4	2	4	4	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
CR119	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	2	N	N	N	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
EH811	Eligible Complete	Air Conditioner Tune-Up	No	Yes	TRUE	1	4	4	4	3	FALSE	TRUE	Yes	No	Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
LY967	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	2	3	4	2	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
EM446	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	1	1	1	1	1	FALSE	TRUE	No		Just forgot about it	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Air-source heat pump	FALSE	FALSE	FALSE
GA332	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	2	2	1	1	N	FALSE	TRUE	No		did not know about it	TRUE	It was part of routine maintenance		FALSE	Ground-source or geothermal heat pump	Ground-source or geothermal heat pump	TRUE	FALSE	FALSE
EE727	Eligible Complete	Air Conditioner Tune-Up	Don't know	Yes	TRUE	2	2	2	2	3	TRUE	FALSE	No		Just forgot about it	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
EM926	Eligible Complete	Air Conditioner Tune-Up	Yes	Don't know	TRUE	1	D	D	D	D	FALSE	TRUE	No		Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
FK608	Eligible Complete	Air Conditioner Tune-Up	No	Yes	TRUE	2	2	N	3	2	TRUE	FALSE	No		I wasnâ€™t sure the tune-up qualified	TRUE	To make repairs or replacements		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
GV447	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	2	2	1	1	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	To improve home comfort		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
DG307	Eligible Complete	Air Conditioner Tune-Up	Yes	No	TRUE	2	2	2	D	2	TRUE	FALSE	No		Don't know	FALSE	To improve home comfort		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
HQ857	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	3	4	3	3	2	TRUE	FALSE	No		Do not own the property	FALSE	To make repairs or replacements		FALSE	Central air conditioner	Don't know Gas	TRUE	FALSE	FALSE
DP925	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	4	4	4	N	TRUE	FALSE	No		Just forgot about it	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
LP960	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	2	2	2	2	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
DS832	Eligible Complete	Heat Pump Tune-Up	No	Yes	TRUE	2	3	2	2	2	TRUE	FALSE	No		self-employed/certified HVAC	FALSE	It was part of routine maintenance		FALSE	Air-source heat pump	Air-source heat pump	TRUE	FALSE	FALSE
GD772	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	3	2	3	2	TRUE	FALSE	No		Work was performed by family member who is HVAC professional	FALSE	To make repairs or replacements		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
GV763	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	1	1	2	1	FALSE	TRUE	No		Don't know	FALSE	To improve home comfort		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
DY230	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	1	3	D	2	FALSE	TRUE	No		Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
AM896	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	1	1	1	1	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	The unit would not come on.	To make repairs or replacements	FALSE	Central air conditioner	Electric furnace	TRUE	FALSE	FALSE
GG235	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	D	1	1	1	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
HH389	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	3	2	2	3	FALSE	TRUE	No		I wasnâ€™t sure the tune-up qualified	TRUE	To make repairs or replacements		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
AQ768	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	2	N	4	4	3	TRUE	FALSE	No		Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Air-source heat pump	FALSE	FALSE	FALSE

Measure Information			Criterion A: Familiarity with at least one Ameren Missouri program, rebate, or discount			Criterion B: At least one element of Ameren's program marketing and outreach motivated them to adopt the measure							Criterion D: They had not received a rebate from Ameren, and had not already tried to receive a rebate from Ameren, and they stated a valid reason for not applying for an Ameren rebate				Criterion E: They had a valid reason for deciding to install the measure			Criterion F: The adopted measure generated electric savings, not gas savings			Meeting all criteria	
Account	Cadmus Disposition	Measure	C2. Have you ever seen or heard of Ameren Missouri's energy efficiency programs?	C10. Are you aware that Ameren Missouri offers rebates and discounts for energy-saving equipment in your home ?	Criterion A met? (Yes to C2 or C10)	a) Information about energy savings from Ameren Missouri's marking or bill insert	b) Ameren Missouri's marketing information from a contractor or retailer	c) Information from colleagues or friends who installed energy efficient equipment and received a rebate from Ameren Missouri	d) Past participation in an Ameren Missouri energy efficiency program	e) Information from the energy assessment conducted at your home through Ameren Missouri	Criterion B met for 50% savings? (Max rating was 2)	Criterion B met for 100% savings? (Max rating was 1)	G18. Did you receive a rebate, discount, or tax credit for the tune-up?	G19. Did you get a rebate from Ameren Missouri?	G20. Why didn't you or your contractor apply for a rebate through Ameren Missouri for the tune-up?	Criterion D met? (qualitative assessment)	G17. Which of the following reasons best describe why you decided to install have the tune-up?	G17. Other categories	Criterion E met? (qualitative assessment)	Cooling System	Heating System	Criterion F met? (depends on the measure)	Criterion B met for 50% savings? (Max rating was 2)	Criterion B met for 100% savings? (Max rating was 1)
CN274	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	2	2	D	2	FALSE	TRUE	No		0 Don't know	FALSE	To make repairs or replacements		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
KX794	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	2	3	2	2	2	TRUE	FALSE	No		0 Just forgot about it	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Ductless or mini-split heat pump	FALSE	FALSE	FALSE
HQ615	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	D	2	2	D	TRUE	FALSE	Yes	No	I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
GD541	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	N	D	1	D	D	FALSE	TRUE	No		0 rent	FALSE	To make repairs or replacements		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
AT892	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	N	1	2	1	D	FALSE	TRUE	No		0 no work was done	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
CU239	Eligible Complete	Air Conditioner Tune-Up	No	Yes	TRUE	2	3	4	4	4	TRUE	FALSE	No		0 I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
MB865	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	N	N	2	N	N	TRUE	FALSE	No		0 I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
KU531	Eligible Complete	Air Conditioner Tune-Up	Yes	No	TRUE	D	3	2	N	N	TRUE	FALSE	No		0 Didn't know about it	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
EC663	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	1	2	1	N	FALSE	TRUE	No		0 I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
GD413	Eligible Complete	Air Conditioner Tune-Up	Yes	No	TRUE	1	1	3	3	1	FALSE	TRUE	No		0 Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
FX971	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	2	2	2	2	TRUE	FALSE	No		0 Don't know	FALSE	To make repairs or replacements		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
CX974	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	2	3	D	3	D	TRUE	FALSE	No		0 Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	FALSE	FALSE	FALSE
HW919	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	1	3	3	N	FALSE	TRUE	No		0 I wasnâ€™t sure the tune-up qualified	TRUE	To save energy		TRUE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	TRUE
FN321	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	1	1	1	1	FALSE	TRUE	No		0 I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
GS780	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	2	2	D	D	TRUE	FALSE	No		0 Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Electric furnace	TRUE	FALSE	FALSE
EH953	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	D	D	3	3	TRUE	FALSE	No		0 I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
FW615	Eligible Complete	Air Conditioner Tune-Up	Yes	No	TRUE	2	3	2	D	2	TRUE	FALSE	Don't know		0 0	FALSE	To make repairs or replacements		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
LG501	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	1	1	2	2	1	FALSE	TRUE	Yes	No	I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	FALSE	FALSE	FALSE
GP163	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	3	3	2	D	3	TRUE	FALSE	No		0 Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner,Air-source heat	Air-source heat pump	TRUE	FALSE	FALSE
EM272	Eligible Complete	Heat Pump Tune-Up	Yes	No	TRUE	2	3	2	2	2	TRUE	FALSE	No		0 I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Air-source heat pump	FALSE	FALSE	FALSE
FW691	Eligible Complete	Air Conditioner Tune-Up	No	Yes	TRUE	1	D	2	D	1	FALSE	TRUE	No		0 Didnt know about it	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
AZ559	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	3	D	4	3	TRUE	FALSE	Don't know		0 0	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Electric furnace	TRUE	FALSE	FALSE
DD366	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	2	2	2	2	TRUE	FALSE	No		0 Just forgot about it	TRUE	To make repairs or replacements		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
MM719	Eligible Complete	Heat Pump Tune-Up	Don't know	Yes	TRUE	2	2	N	2	D	TRUE	FALSE	No		0 I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner,Window or wall	Air-source heat pump ,Gas furnace/boiler	FALSE	FALSE	FALSE
HE314	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	2	2	1	N	2	FALSE	TRUE	No		0 Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	FALSE	FALSE	FALSE
LV754	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	D	4	D	2	TRUE	FALSE	No		0 Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
MM957	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	1	1	2	2	1	FALSE	TRUE	No		0 I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	FALSE	FALSE	FALSE
KU655	Eligible Complete	Air Conditioner Tune-Up	Yes	No	TRUE	1	2	2	1	2	FALSE	TRUE	No		0 I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
KF685	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	2	2	2	1	FALSE	TRUE	Yes	Yes	0	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
LS676	Eligible Complete	Air Conditioner Tune-Up	No	Yes	TRUE	2	2	4	D	3	TRUE	FALSE	No		0 I wasnâ€™t sure the tune-up qualified	TRUE	To make repairs or replacements		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
FX734	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	2	N	2	D	N	TRUE	FALSE	No		0 Don't know	FALSE	To save money		TRUE	Air-source heat pump	Air-source heat pump	TRUE	FALSE	FALSE
FC753	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	N	N	1	1	FALSE	TRUE	No		0 I was not aware it was available	TRUE	To make repairs or replacements		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
LP596	Eligible Complete	Air Conditioner Tune-Up	No	Yes	TRUE	2	4	2	2	4	TRUE	FALSE	No		0 I wasnâ€™t sure the tune-up qualified	TRUE	Need new unit but cant afford one	To make repairs or replacements	FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
FK383	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	1	2	2	N	1	FALSE	TRUE	Yes	No	Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	FALSE	FALSE	FALSE
HB867	Eligible Complete	Air Conditioner Tune-Up	Don't know	Yes	TRUE	1	N	N	1	N	FALSE	TRUE	Yes	No	I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
EM487	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	1	1	1	1	1	FALSE	TRUE	No		0 I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Electric furnace	FALSE	FALSE	FALSE
DG852	Eligible Complete	Heat Pump Tune-Up	No	Yes	TRUE	1	1	3	N	1	FALSE	TRUE	No		0 I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Air-source heat pump	Electric furnace	FALSE	FALSE	FALSE
LG337	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	1	2	1	1	2	FALSE	TRUE	No		0 I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Air-source heat pump	Air-source heat pump	TRUE	FALSE	FALSE
MM542	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	1	D	D	D	D	FALSE	TRUE	Don't know		0 0	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Don't know Gas	FALSE	FALSE	FALSE
GD958	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	3	4	3	2	TRUE	FALSE	No		0 I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
EM179	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	3	3	4	3	TRUE	FALSE	No		0 I wasnâ€™t sure the tune-up qualified	TRUE	To improve home comfort		FALSE	Central air conditioner	Gas furnace/boiler ,Electric furnace	TRUE	FALSE	FALSE
GP317	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	2	D	2	N	TRUE	FALSE	No		0 I wasnâ€™t sure the tune-up qualified	TRUE	To save energy		TRUE	Central air conditioner	Gas furnace/boiler	TRUE	TRUE	FALSE
DA627	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	4	4	2	4	2	TRUE	FALSE	No		0 Don't know	FALSE	To save energy		TRUE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
EC592	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	3	N	3	N	TRUE	FALSE	No		0 I wasnâ€™t sure the tune-up qualified	TRUE	To improve home comfort		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
CX916	Eligible Complete	Air Conditioner Tune-Up	Yes	No	TRUE	2	1	1	2	1	FALSE	TRUE	No		0 Don't know	FALSE	To improve home comfort		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
EE965	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	3	3	1	4	FALSE	TRUE	No		0 Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
HW374	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	N	2	D	D	TRUE	FALSE	No		0 I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Electric furnace	TRUE	FALSE	FALSE
LD153	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	1	1	N	1	FALSE	TRUE	No		0 Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE

Measure Information			Criterion A: Familiarity with at least one Ameren Missouri program, rebate, or discount			Criterion B: At least one element of Ameren's program marketing and outreach motivated them to adopt the measure							Criterion D: They had not received a rebate from Ameren, and had not already tried to receive a rebate from Ameren, and they stated a valid reason for not applying for an Ameren rebate				Criterion E: They had a valid reason for deciding to install the measure			Criterion F: The adopted measure generated electric savings, not gas savings			Meeting all criteria	
Account	Cadmus Disposition	Measure	C2. Have you ever seen or heard of Ameren Missouri's energy efficiency programs?	C10. Are you aware that Ameren Missouri offers rebates and discounts for energy-saving equipment in your home ?	Criterion A met? (Yes to C2 or C10)	a) Information about energy savings from Ameren Missouri's marking or bill insert	b) Ameren Missouri's marketing information from a contractor or retailer	c) Information from colleagues or friends who installed energy efficient equipment and received a rebate from Ameren Missouri	d) Past participation in an Ameren Missouri energy efficiency program	e) Information from the energy assessment conducted at your home through Ameren Missouri	Criterion B met for 50% savings? (Max rating was 2)	Criterion B met for 100% savings? (Max rating was 1)	G18. Did you receive a rebate, discount, or tax credit for the tune-up?	G19. Did you get a rebate from Ameren Missouri?	G20. Why didn't you or your contractor apply for a rebate through Ameren Missouri for the tune-up?	Criterion D met? (qualitative assessment)	G17. Which of the following reasons best describe why you decided to install have the tune-up?	G17. Other categories	Criterion E met? (qualitative assessment)	Cooling System	Heating System	Criterion F met? (depends on the measure)	Criterion B met for 50% savings? (Max rating was 2)	Criterion B met for 100% savings? (Max rating was 1)
HH693	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	2	N	D	2	FALSE	TRUE	No	0	I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
AM901	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	3	3	2	D	TRUE	FALSE	No	0	I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
CR481	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	2	1	2	N	N	FALSE	TRUE	No	0	Don't know	FALSE	To make repairs or replacements		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
AT118	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	2	N	N	N	N	TRUE	FALSE	No	0	I wasnâ€™t sure the tune-up qualified	TRUE	To improve home comfort		FALSE	Air-source heat pump	Air-source heat pump	TRUE	FALSE	FALSE
LL890	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	D	4	D	D	FALSE	TRUE	No	0	Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
LA400	Eligible Complete	Air Conditioner Tune-Up	Yes	Don't know	TRUE	2	2	2	1	2	FALSE	TRUE	No	0	I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
FF910	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	3	3	2	N	D	TRUE	FALSE	Don't know	0	0	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
HW559	Eligible Complete	Air Conditioner Tune-Up	No	Yes	TRUE	1	4	2	2	3	FALSE	TRUE	No	0	Don't know	FALSE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler ,Electric	TRUE	FALSE	FALSE
DS347	Eligible Complete	Heat Pump Tune-Up	Yes	Yes	TRUE	1	N	N	N	N	FALSE	TRUE	No	0	I wasnâ€™t sure the tune-up qualified	TRUE	It was part of routine maintenance		FALSE	Air-source heat pump	Air-source heat pump	TRUE	FALSE	FALSE
HB425	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	1	1	1	D	FALSE	TRUE	No	0	He doesn't think the check that he has done would qualify	TRUE	It was part of routine maintenance		FALSE	Central air conditioner	Gas furnace/boiler	TRUE	FALSE	FALSE
CN442	Eligible Complete	Air Conditioner Tune-Up	Yes	Yes	TRUE	1	N	1	N	N	FALSE	TRUE	No	0	I wasnâ€™t sure the tune-up qualified	TRUE	To make repairs or replacements		FALSE	Window or wall air conditioner	Gas furnace/boiler	FALSE	FALSE	FALSE

Appendix E. Stakeholder Interview Guide

CADMUS

Ameren Missouri Lighting Program
Stakeholder Interview Guide (PY18)

Respondent name: _____

Respondent phone: _____

Interview date: _____ Interviewer initials: _____

This interview is to assess how well the program processes and implementation are working to achieve the goals of the program, as well as to understand how the evaluation can help the program manager and implementers with planning an implementation.

A. Program Goals and Design

I'll start with the program goals.

1) Going into PY18, the program had already exceeded its savings targets for Cycle 2. How did this affect how you managed the program? Did you have different objectives for the program, as a result? (Probe: to make up for other programs falling short of goals, to achieve additional cost-effective savings, etc.)

2) As of Q3, the tracking database showed only 131,000 bulbs, compared to a filed target of around 430,000. Is the program expected to have significantly reduced participation this year compared to the original 2016 target? If so, is this reduced participation by design, or due to some other reason?

3) Can you describe any significant changes to how the program operated over the year, relative to PY17?

4) Did you actively manage any external or market-related challenges for the program? (Probe: how will the program manage free ridership given the increasing market share of LEDs and reduced prices?)

5) PY18 was the last year of the cycle. Will the program continue in PY19? If so, are you implementing any significant changes for PY19? (Probe: continuing all measure categories? Continuing with all retailer types and currently participating chains? Wil the program expand or shrink?)

B. Implementation Roles and Responsibilities

Now I'd like to discuss how the program operated this year.

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1) Have there been any changes to the Ameren Missouri/ICF staff dedicated to the Lighting Program this year? (Probe: Is ICF still working with CrossMark? Any change to the responsibilities between ICF and CrossMark?)

2) **[Both]** How has CrossMark performed this year? Have you, or would you, recommend any changes in how field operations are handled?

C. Retailers

Let's move on to relationships with partner retailers.

1) Has there been any change in the retailer mix from PY17 for PY18? What led to the change?

2) Were there any changes to the RFP process or the MOUs in PY18 relative to PY17? For example, in terms of when the RFP was issued, or the length of time covered by the MOU?

3) Earlier in the year, Ameren mentioned that ICF expected to increase the percentage of bulbs sold through discount retailer chains. What prompted that decision? Has ICF been able to drive participation through that channel to the degree you expected?

4) [If there was a shift of budget to discount retailers] Was there any pushback from mainstream retailers about the reduced budget? What do you think motivates retailers to continue to participate?

5) Given the reduced budget for big box retailers, what prompted you to maintain the same number of chains, rather than consolidate sales in a smaller number of retailers?

6) **[Both]** What feedback have you received from participating retailers this year? (Probe: How are retailers responding to the diminishing program budget?)

7) How are you communicating with retailers on the future of the program?

D. Marketing

Now let's discuss marketing for the program, both in-store and other channels.

1) Was the online store active throughout PY18? How did this channel perform? Was there any chance to how you managed or marketed this channel in PY18 relative to the previous year?

2) How do you expect to manage this channel going forward? (Probe: Do you see opportunity to grow online sales, do you expect to maintain the online store?)

3) Were there any changes to the marketing strategies the program used this year? (Probe: How did the program adjust marketing strategies given the different demographics of the discount retailers' customer base?)

4) In past years, in-store signage has been an important part of driving sales. Did this continue to be true in PY18? Are there any differences to how ICF approaches the use of in-store signage in discount retail spaces?

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5) Did the program change any of the messaging for LEDs to encourage greater uptake in rental units or multifamily housing?

E. Data Tracking and Quality Control

Thank you. My next subject is data tracking.

1) Were there any changes to data tracking or data storage in PY18? (If yes, probe: What drove the change? How are the updates performing?)

2) Were there any changes to quality control practices in PY18 relative to the previous year?

3) Did the quality control activities uncover any issues? How were these issues addressed?

4) Do you feel there was enough quality control?

F. Summary

Thank you. Now I have just a few general questions to wrap up.

1) What would you say is working particularly well so far in PY18? Why is that?

2) Conversely, what is not working as well as anticipated? Why is that?

3) Is there anything else you'd like us to know about your experience administrating or implementing the program so far this year?

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Appendix F. General Population Survey Instrument

General Population Survey

January 2019

A. Introduction

[DISPLAY AMEREN MISSOURI STYLE]

Please enter the 5-digit code from the postcard invitation: ☐

[IF CODE IS INVALID, DISPLAY THE FOLLOWING MESSAGE AND DISPAY THE FIVE-DIGIT CODE BOX AGAIN; CLOSE SURVEY AFTER FIVE FAILED ATTEMPTS.]

Sorry, the code you have entered is invalid. Please try again or contact Romi Jones at romi.jones@cadmusgroup.com or (971) 712-7431.

[IF CODE IS VALID, DISPLAY THE FOLLOWING MESSAGE AND CONTINUE SURVEY]

Welcome! Ameren Missouri is conducting its annual study to learn more about how households throughout Missouri use energy. Your responses are very important to us and we will keep them confidential. Complete the survey by **February 22, 2019**, and we will enter you into a drawing for one of five **$100 VISA gift cards**.

The survey will take you about 15 minutes and is intended for the person primarily responsible for your household's energy-related decisions (i.e., the person who is responsible for paying the utility bills or selecting new lighting and appliances).

This survey saves your responses automatically and responses will be submitted when you complete the survey. You can stop and then return to the survey at any time by accessing the survey link provided to you on the postcard. Please access the survey from the same device.

B. Energy Efficiency Attitudes and Barriers

B1. How much energy do you use in your home now compared to five years ago? Would you say…

1. More
2. About the same
3. Less

-98. Don't know

B2. How important is energy efficiency in your daily activities and when making purchasing decisions? Would you say…

1. Very important
2. Somewhat important
3. Not too important
4. Not at all important
-98. DON'T KNOW

B3. Please rate your home's energy efficiency. Would you say it is…

1. Very efficient
2. Somewhat efficient
3. Not too efficient
4. Not at all efficient
-98. DON'T KNOW

B4. Please rate whether you strongly agree, somewhat agree, somewhat disagree, or strongly disagree with each of the following statements: **[RANDOMIZE ORDER] [DROP DOWN SELECTION MENU WITH RESPONSE CHOICES: 1= STRONGLY AGREE; 2=SOMEWHAT AGREE; 3=SOMEWHAT DISAGREE; 4=STRONGLY DISAGREE; -98= DON'T KNOW]**

a) It is important to conserve energy as much as possible
b) Using energy to keep the home comfortable is my top priority
c) I would like to save more energy but do not know where to start
d) I always shop for the lowest prices, even if it takes more time
e) I have already done as much as possible to save energy in my home
f) I have tried a few things to save energy, but have not seen any real savings on my utility bills

B5. What are the main reasons you might decide to conserve energy? Selection up to three options. **[RANDOMIZE ORDER; ACCEPT UP TO THREE RESPONSES]**

1. Reduce energy costs
2. Increase home comfort
3. Protect the environment
4. Increase value of home
5. Other (please specify): _____
-98. Don't know

B6. What are the main reasons you might decide NOT to conserve energy? Selection up to three options. **[RANDOMIZE ORDER; ACCEPT UP TO THREE RESPONSES]**

1. Already saving as much as possible
2. No need to save on energy cost
3. Equipment is too expensive
4. Equipment is hard to find
5. Equipment doesn't work as well
6. Don't think about it much
7. Don't have time
8. Other family members don't turn off lights/equipment
9. Other (please specify):_____
-98. Don't know

B7. What challenges, if any, do you face in saving energy in your home? Selection up to three options. **[RANDOMIZE ORDER; ACCEPT UP TO THREE RESPONSES]**

1. Can't afford it/too expensive
2. Too hard to install/implement
3. Inconvenient/don't have time/too busy
4. Not confident it will save energy/be worth it
5. Afraid it will make home uncomfortable
6. Disruption to home/mess involved with installing improvements
7. Challenges with contractors
8. Don't know where to start
9. No challenges/None
10. Challenges with home construction or age
11. Home is already pretty efficient
12. Other family members are not trying to conserve
13. Other [**SPECIFY:** _____]
-98. DON'T KNOW

C. Energy Efficiency and Program Awareness

C1. If you wanted to know more about energy saving opportunities, where would you look for information? Selection up to three options. **[RANDOMIZE ORDER; ACCEPT UP TO THREE RESPONSES]**

1. TV or radio programs or ads
2. Online articles or ads

3. Print articles or ads (e.g., newspapers or magazines)
4. At a retail location
5. Utility bill or other utility direct mail
6. Email from the utility
7. Discussion with a contractor
8. Word of mouth (family, friends, colleagues)
9. Social media
10. Internet searches by you
11. Utility website
12. Other (please specify):_____
13. I don't want information about ways to save energy

-98. Don't know

C2. Have you ever seen or heard of Ameren Missouri's energy efficiency programs? **[RESPONSE REQUIRED]**

1. Yes
2. No

-98. DON'T KNOW

C3. **[IF C2 = 1]** How familiar are you with Ameren Missouri's energy efficiency programs?

1. Very familiar
2. Somewhat familiar
3. Not too familiar
4. Not at all familiar

-98. DON'T KNOW

C4. **[IF C3 = 1, 2, or 3]** Where do you recall having seen or heard about the Ameren Missouri energy efficiency programs? Select up to three options. **[RANDOMIZE ORDER; ACCEPT UP TO THREE RESPONSES]**

1. TV or radio programs or ads
2. Online articles or ads
3. Print articles or ads (e.g., newspapers or magazines)
4. At a retail location
5. Utility bill or other utility direct mail
6. Email from the utility
7. Discussion with a contractor
8. Word of mouth (family, friends, colleagues)
9. Social media
10. Internet searches by you
11. Utility website
12. Other (please specify):_____

-98. Don't know

C5. **[IF C2 = 1]** Are you familiar with the following programs? **[RANDOMIZE ORDER] [DROP DOWN SELECTION MENU WITH RESPONSE CHOICES: 1= YES; 2=NO; -98= DON'T KNOW]**

1. CommunitySavers Program
2. Efficient Products Program
3. Multifamily Efficient Kits Program
4. School Kits Program
5. Heating and Cooling Program
6. Home Energy Report Program
7. Lighting Program

C6. **[IF YES TO ANY OF C5]** Did you participate in any of these programs in the past year? **[RESPONSE REQUIRED]**

1. Yes
2. No

-98. Don't know

C7. Have you visited any of the Ameren Missouri energy efficiency program websites within the past year, such as the Efficient Products or Heating and Cooling websites?

1. Yes
2. No

-98. Don't know

C8. **[IF C7 = 1]** What information were you looking for on the website? Selection up to three options. **[RANDOMIZE ORDER; ACCEPT UP TO THREE RESPONSES]**

1. Energy saving tips
2. Rebates or incentives
3. Participating contractor or builder
4. Participating retailers
5. Where to recycle my CFLs or non-working LEDs
6. Other (please specify):_____

-98. Don't know

C9. **[IF C7 = 1]** Was the information on the website useful to you?

1. Yes
2. No (please elaborate why):_____

-98. DON'T KNOW

C10. Are you aware that Ameren Missouri offers rebates and discounts for energy-saving equipment in your home? **[RESPONSE REQUIRED]**

1. Yes
2. No **[SKIP TO D1]**

-98. Don't know **[SKIP TO D1]**

C11. From what sources did you hear or read about the Ameren Missouri energy-efficiency rebate opportunities? Selection up to three options. **[RANDOMIZE ORDER; ACCEPT UP TO THREE RESPONSES]**

1. TV or radio programs or ads
2. Online articles or ads
3. Print articles or ads (e.g., newspapers or magazines)
4. At a retail location
5. Utility bill or other utility direct mail
6. Email from the utility
7. Discussion with a contractor
8. Word of mouth (family, friends, colleagues)
9. Social media
10. Internet searches by you
11. Utility website
12. Other (please specify):_____

-98. Don't know

D. Lighting

D1. Have you purchased any CFLs in the last year?

1. Yes
2. No

-98. Don't know

a. **[ASK IF D1 = 1]** How many CFLs did you purchase?

D2. **[ASK IF D1 = 1]** What store or stores did you make your purchase from?

D3. Have you purchased any LEDs in the last year? The kind of LED that can replace a traditional screw-in bulb, not LED nightlights, holiday lights, or flashlights.

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

a. **[ASK IF D4 = 1]** How many LEDs did you purchase?

☐

D4. **[ASK IF D4 = 1]** What store or stores did you make your purchase from?

☐

E. Cooling

E1. What type of cooling equipment do you have in your home? **[ACCEPT MULTIPLE RESPONSES; RESPONSE REQUIRED]**

1. Central air conditioner
2. Ductless or mini-split heat pump
3. Air-source heat pump
4. Ground-source or geothermal heat pump
5. Portable air conditioner
6. Window or wall air conditioner
7. Evaporative (swamp) cooler
8. Other (please specify): _____
9. None **[SKIP TO SECTION F]**
-98. DON'T KNOW **[SKIP TO SECTION F]**

E2. **[IF E1 ≠ 9 or -98]** How old is the cooling equipment you previously selected? Please indicate the number of years**.**

[Carry forward selected choices] Years ☐

F. Heating

F1. What type of heating equipment do you have in your home? **[ACCEPT MULTIPLE RESPONSES; RESPONSE REQUIRED]**

1. Ductless or mini-split heat pump
2. Air-source heat pump
3. Ground-source or geothermal heat pump
4. Gas furnace/boiler
5. Electric baseboard heating system
6. Electric furnace
7. Other (please specify):_____
8. None **[SKIP TO SECTION G]**

-98. Don't know **[SKIP TO F3]**

F2. How old is the heating equipment you previously selected? Please indicate in number of years.

[Carry forward selected choices] Years ☐

F4. **[If F1 = 7 OR -98]** Is your home heating electric or gas? **[RESPONSE REQUIRED]**

1. Electric
2. Gas

-98. DON'T KNOW

G. Potential Spillover

[IF C6 = 1, SKIP TO SECTION H]

G1. Is your hot water heater electric or gas? **[RESPONSE REQUIRED]**

1. Electric
2. Gas

-98. Don't know

G2. Have you or anyone in your household purchased and installed any energy efficient equipment **in the past year**?

1. Yes
2. No **[SKIP TO G13]**

-98. Don't know

G3. Have you or anyone in your household purchased and installed **energy efficient** versions of the following equipment **in the past year**? **[RANDOMIZE ORDER; ACCEPT MULTIPLE RESPONSES; RESPONSE REQUIRED]**

1. Room air conditioner
2. Room air purifier
3. Pool pump

4. Showerhead
5. Kitchen faucet aerator
6. Bathroom faucet aerator
7. Hot water pipe insulation for your hot water heater
8. Furnace fan with ECM (Electronically Commutated Motor)
9. Filter whistle
10. Heat pump water heater
11. Learning or "smart" thermostat
12. Air-source heat pump
13. Ductless or mini-split heat pump
14. Duel-fuel heat pump
15. Ground-source or geothermal heat pump
16. Central air conditioner
17. Other (please specify): _____
18. None

-98. Don't know

G4. How many pieces of each equipment did you install? If you selected *hot water pipe insulation*, please indicate the length in feet. **[RESPONSE REQUIRED]**

[Carry down selected responses] Amount ☐

[IF G3 = 12 OR -98 SKIP TO G15]

[RESPONSES TO G3 COMBINED MAKE UP THE 'CONSIDERATION SET' FOR THE "SPILLOVER QUESTIONS" (G7–G13). IF RESPONSES ARE MORE THAN THREE, THEN THE CONSIDERATION SET BECOMES A SET OF THREE RANDOMLY SELECTED RESPONSES]

G7. **[FOR EACH PRODUCT IN "CONSIDERATION SET"]** How do you know the **[INSERT PRODUCT FROM 'CONSIDERATION SET']** is energy efficient? **[RANDOMIZE ORDER; CHOOSE ONLY ONE RESPONSE; RESPONSE REQUIRED]**

1. It's ENERGY STAR-certified
2. The retailer/dealer/contractor told me it was
3. Information about the product from packaging, websites, etc.
4. Other (please specify):_____

-98. Don't know **[NOTE: FAIL]**

G8. **[FOR EACH PRODUCT IN "CONSIDERATION SET"]** Which of the following reasons best describe why you decided to install a **[INSERT PRODUCT FROM 'CONSIDERATION SET']**? **[RANDOMIZE ORDER; CHOOSE ONLY ONE RESPONSE; RESPONSE REQUIRED]**

1. To save energy **[NOTE: PASS]** **[SKIP TO G8]**
2. To save money **[NOTE: PASS]** **[SKIP TO G8]**
3. To replace failing equipment
4. Needed to replace anyway
5. Liked the style
6. Was ready to update
7. To improve comfort
8. Other (please specify): _____

-98. Don't know

G9. **[If G6 ≠ 1 OR 2]** Which of the following reasons best describe why you chose an energy efficient version of a **[INSERT PRODUCT FROM 'CONSIDERATION SET']** **[RANDOMIZE ORDER; CHOOSE ONLY ONE RESPONSE; RESPONSE REQUIRED]**

1. To save energy **[NOTE: PASS]**
2. To save money **[NOTE: PASS]**
3. Liked the style **[NOTE: FAIL]**
4. It had other features that I liked **[NOTE: FAIL]**
5. It was the cheapest product available **[NOTE: FAIL]**
6. It was the only option available **[NOTE: FAIL]**
7. Other (please specify):_____

-98. Don't know **[NOTE: FAIL]**

G10. **[FOR EACH PRODUCT IN THE "CONSIDERATION SET"]** Did you receive a rebate, discount, or tax credit for installing the **[INSERT PRODUCT IN "CONSIDERATION SET"]**? **[RESPONSE REQUIRED]**

1. Yes
2. No **[NOTE: PASS]** **[SKIP TO G10]**

-98. Don't know **[NOTE: FAIL]** **[SKIP TO G12]**

G11. **[ASK FOR EACH PRODUCT IN "CONSIDERATION SET" IF G8 = 1]** Did you get a rebate from Ameren Missouri? **[RESPONSE REQUIRED]**

1. Yes **[NOTE: FAIL]** **[SKIP TO G12]**
2. No **[NOTE: PASS]**

-98. Don't know **[NOTE: FAIL]** **[SKIP TO G12]**

G12. **[ASK FOR EACH PRODUCT IN "CONSIDERATION SET" IF C2 = 1 OR C10 = 1]** Why didn't you or your contractor apply for a rebate through Ameren Missouri for the **[INSERT PRODUCT IN "CONSIDERATION SET"]**? **[RANDOMIZE ORDER; CHOOSE ONLY ONE RESPONSE; RESPONSE REQUIRED]**

1. I am still planning to apply **[NOTE: FAIL]**
2. It was confusing **[NOTE: PASS]**
3. Just forgot about it **[NOTE: PASS]**
4. I wasn't sure my equipment qualified **[NOTE: PASS]**
5. I wanted a different model that did not qualify **[NOTE: FAIL]**
6. I applied, but I did not receive a rebate **[NOTE: FAIL]**
7. Other (please specify):_____

-98. Don't know **[NOTE: FAIL]**

G13. **[ASK FOR EACH PRODUCT IN "CONSIDERATION SET" IF G8 = 1 AND G9 = 2]** Which organization did you get a rebate, discount or tax credit from?

[Text response]

[ASK FOR EACH PRODUCT AND ACTION IN "CONSIDERATION SET"] On a 1 to 4 scale, with 1 meaning "very important", and 4 meaning "not at all important", how important was each of the following elements in your decision to purchase and install a **[INSERT PRODUCT IN "CONSIDERATION SET"]**? **[ADD "Don't know" AND "Not applicable" AS RESPONSE OPTIONS; RANDOMIZE ORDER; RESPONSE REQUIRED]**

a) Information about energy savings from Ameren Missouri's marking or bill insert
b) Ameren Missouri's marketing information from a contractor or retailer
c) Information from colleagues or friends who installed energy efficient equipment and received a rebate from Ameren Missouri
d) Past participation in an Ameren Missouri energy efficiency program
e) Information from the energy assessment conducted at your home through Ameren Missouri

G15. Have you or anyone in your household had a tune-up of your heating or cooling equipment **in the past year**? **[RESPONSE REQUIRED]**

1. Yes
2. No **[SKIP TO H1]**

-98. DON'T KNOW **[SKIP TO H1]**

G16. What equipment was tuned up? **[CHOOSE ONLY ONE RESPONSE; RESPONSE REQUIRED]**

1. My heat pump (which provides both central heating and cooling)
2. My central air conditioner
3. Other (please specify): _____

-98. Don't know **[SKIP TO H1]**

G17. Which of the following reasons best describe why you decided to have the tune-up? **[CHOOSE ONLY ONE RESPONSE; RESPONSE REQUIRED; RANDOMIZE ORDER]**

1. To save energy **[NOTE: PASS]**
2. To save money **[NOTE: PASS]**
3. To improve home comfort **[NOTE: FAIL]**
4. It was part of routine maintenance **[NOTE: FAIL]**
5. To make repairs or replacements **[NOTE: FAIL]**
6. Other (please specify): _____

-98. DON'T KNOW **[NOTE: FAIL]**

G18. Did you receive a rebate, discount, or tax credit for the tune-up? **[RESPONSE REQUIRED]**

1. Yes
2. No **[NOTE: PASS]** **[SKIP TO G18]**

-98. DON'T KNOW **[NOTE: FAIL]** **[SKIP TO G19]**

G19. **[IF G16=1]** Did you get a rebate from Ameren Missouri? **[RESPONSE REQUIRED]**

1. Yes **[NOTE: FAIL]** **[SKIP TO G19]**
2. No **[NOTE: PASS]**

-98. Don't know **[NOTE: FAIL]** **[SKIP TO G19]**

G20. **[ASK IF C2 = 1 OR C10 = 1]** Why didn't you or your contractor apply for a rebate through Ameren Missouri for the tune-up? **[RANDOMIZE ORDER; CHOOSE ONLY ONE RESPONSE; RESPONSE REQUIRED]**

1. I am still planning to apply **[NOTE: FAIL]**
2. It was confusing **[NOTE: PASS]**
3. Just forgot about it **[NOTE: PASS]**
4. I wasn't sure the tune-up qualified **[NOTE: PASS]**
5. I applied, but I did not receive a rebate **[NOTE: FAIL]**
6. Other (please specify): _____

-98. Don't know **[NOTE: FAIL]**

G19. a)–e). On a 1 to 4 scale, with 1 meaning "very important", and 4, meaning "not at all important", how important was each of the following elements in your decision to get a tune-up? **[ADD "Don't know" and "Not applicable" AS RESPONSE OPTIONS; RANDOMIZE ORDER; RESPONSE REQUIRED]**

a) Information about energy savings from Ameren Missouri's marking or bill insert
b) Ameren Missouri's marketing information from a contractor or retailer
c) Information from colleagues or friends who installed energy efficient equipment and received a rebate from Ameren Missouri
d) Past participation in an Ameren Missouri energy efficiency program
e) Information from the energy assessment conducted at your home through Ameren Missouri

H. Customer Demographics

H1. Thinking about your overall experiences with Ameren Missouri as your utility, how satisfied would you say you are with Ameren Missouri?

1. Very satisfied
2. Somewhat satisfied
3. Not too satisfied
4. Not at all satisfied
-98. Don't know

H2. How satisfied are you with the energy efficiency information and the rebates available to you by Ameren Missouri?

1. Very satisfied
2. Somewhat satisfied
3. Not too satisfied
4. Not at all satisfied

-98. Don't know

H3. What type of home do you live in?

1. Single-family home
2. Manufactured or modular
3. Mobile home
4. Row house/townhome
5. Two or three family attached residence
6. Apartment with 4 units or greater
7. Condominium
8. Other (please specify): _____

-98. Don't know

H4. Approximately how many square feet of living space does your home have? Don't include the basement unless it is a space that you consider lived in.

1. Less than 1,000 square feet
2. 1,000 to less than 1,500 square feet
3. 1,500 to less than 2,000 square feet
4. 2,000 to less than 2,500 square feet
5. 2,500 to less than 3,000 square feet
6. 3,000 or more square feet

-98. Don't know

H5. What year was your home built?

1. After 2012
2. 2009-2012
3. 2005-2008
4. 2001-2004
5. 1980-2000
6. Before 1980

-98. Don't know

H6. Do you own or rent this residence?

1. Own
2. Rent

-98. Don't know

H7. Is your home occupied…

1. Year round
2. On a seasonal basis/vacation home

-98. Don't know

H8. What is the highest level of education that you have completed?

1. Less than a high school degree
2. High school degree
3. Technical/trade school program
4. Associates degree or some college
5. Bachelor's degree
6. Graduate/ professional degree, e.g. J.D., MBA, MD, etc.
7. Professional certification, e.g. CPA, CNP, etc.

-98. Don't know

H9. Which of the following categories includes your household's total annual income before taxes?

1. Less than $10,000
2. $10,000 – $14,999
3. $15,000 – $19,999
4. $20,000 – $29,999
5. $30,000 – $39,999
6. $40,000 –$49,999
7. $50,000 – $59,999
8. $60,000 – $74,999
9. $75,000 – $99,999
10. $100,000 – $124,999
11. $125,000 – $149,999
12. $150,000 or more
13. Prefer not to say

Thank you for taking the survey. Your response has been recorded and we have entered you into the drawing for one of five $100 VISA gift cards.

If you are selected to receive one of the five gift cards in the drawing, the gift card will be mailed to you at the same address written on the postcard you received, by March 15, 2019.

Appendix G. Elasticity Model Outputs

Model Specification

The Cadmus Team used an econometric model to organize bulb and pricing data as a panel, with a cross-section of program bulb quantities for each unique retail location and bulb type combination modeled over time as a function of price, retail channel (big box and chain). This study also involved testing a variety of specifications to ascertain price impacts—the main instrument affected by the program—on the demand for bulbs.

After testing potential model specifications, Cadmus found that elasticities within big box stores showed significant variation between bulb types but did not differ at chain retailers. Therefore, Cadmus estimated separate models for chain and big box retailers.

The basic equation for the big box retailer model is as follows (for cross-section *i*, in month *t*):

Equation 1. Big Box Retailer Model Equation

$$\ln(Q_{it}) = \sum_{\pi}(\beta_{\pi} Model\ ID_{\pi,\mathrm{i}}) + \sum_{\theta,\delta}(\beta_{\theta 1,\delta 1}[ln(P_{it}) * \ Bulb\ Type_{\delta}]) + \beta_2 ln(P_{it}) * Club1_i + \sum_{\alpha}(\beta_{\alpha} Month_{\alpha,\mathrm{t}}) + \lambda_{it} + \ \varepsilon_{it}$$

Where:

ln	=	Natural log
Q	=	Quantity of average daily sales in month t
P	=	Average price per bulb in month t
Club 1	=	Dummy variable equal to 1 if the big box retailer was Club store 1; 0 otherwise
Bulb Type	=	Product category (general purpose, reflector, decorative)
Month	=	Dummy variable equal to 1 for each unique month of the year; 0 otherwise
Model ID	=	Dummy variable equaling 1 for each unique retail location and measure name; 0 otherwise
ε_{it}	=	Cross-sectional random-error term in time period *t*
λ_{it}	=	Time series random-error term in time period *t*

Equation 2. Small Chain Retailer Model Equation

$$\ln(Q_{it}) = \sum_{\pi}(\beta_{\pi} Model\ ID_{\pi,\mathrm{i}}) + (\beta_1 * ln(P_{it}) + \sum_{\alpha}(\beta_{\alpha} Month_{\alpha,\mathrm{t}}) + \lambda_{it} + \varepsilon_{it}$$

Where:

ln	=	Natural log
Q	=	Quantity of average daily sales in month t
P	=	Average price per bulb in month t
Month	=	Dummy variable equal to 1 for each unique month of the year; 0 otherwise
Model ID	=	Dummy variable equaling 1 for each unique retail location, bulb type, and base watt; 0 otherwise
ε_{it}	=	Cross-sectional random-error term in time period *t*
λ_{it}	=	Time series random-error term in time period *t*

The model specification assumed a negative binomial distribution as this minimized error for a small number of products with a disproportionately high sales volume.

Cadmus ran numerous model scenarios to identify the model for each retail channel with the best parsimony and explanatory power using these criteria:

- Model coefficient p-values (keeping values less than <0.1)
- Explanatory variable cross-correlation (minimizing where possible)
- Model QIC (minimizing between models)
- Minimizing multicollinearity
- Optimizing model fit

The following tables provide output statistics and information generated by the final models.

Table 1. Model Information

Model Information	
Chain Store Retailers	
Data Set	FINALMODELDATA
Distribution	Negative Binomial
Link Function	Log
Dependent Variable	AvgDailySales
Number of Observations Read	215
Number of Observations Used	213
Missing Values	2
Big Box Retailers	
Data Set	FINALMODELDATA
Distribution	Negative Binomial
Link Function	Log
Dependent Variable	AvgDailySales
Number of Observations Read	1995
Number of Observations Used	1978
Number of Invalid Responses	8
Missing Values	9

Table 2. Model Classification Variable Levels Chain Retailers

Class Level Information		
Class	**Levels**	**Values**
Chain Retailers		
Model_ID	38	Measure Name & Stores
Channel	3	Chain
Type	3	Decorative GS
Month	10	1 3 4 5 6 7 8 9 10 11
Big Box Retailer		
256	Measure Name & Stores	256
1	Big Box	1
3	Decorative GS Reflector	3
11	1 3 4 5 6 7 8 9 10 11 12	11

Table 3. Parameter Estimates with Empirical Standard Errors

Parm	Level 1	Estimate	Stderr	LowerCL	UpperCL	Z	ProbZ
Intercept		0	0	0	0		
logPrice*Type	Decorative	1	-1.059	1.161	-3.335	1.216	0.832
logPrice*Type	GS	1	-1.469	0.322	-2.101	-0.837	20.778
logPrice*Type	Reflector	1	-0.448	0.169	-0.778	-0.117	7.044
logPrice*Costco		1	-1.727	0.376	-2.463	-0.990	21.119
logPrice		1	-1.965	0.682	-3.302	-0.628	8.300

Table 4. AIC Fit Criteria

AIC	Value
Big Box	4648.7422
Chain	498.5405

Appendix H. Measure Category Specifications

Table 5. Standard—General Purpose, A-Line, Omni-Directional

Bulb Type	Lumen Bin	Baseline	Ameren Missouri Measure Category
Standard	310-449	25	10W_LED
Standard	450-799	29	10W_LED
Standard	800-1,099	43	10W_LED
Standard	1,100-1,599	53	15W_LED
Standard	1,600-1,999	72	20W LED
Standard	2,000-2,600	72	20W LED

Table 6. Specialty Lumens Bins

Bulb Type	Lumen Bin	Baseline	Ameren Missouri Measure Category
Globes			
Globe	350-499	40	8W_LED_Globe_Light
Globe	500-574	43	8W_LED_Globe_Light*
Globe	575-649	53	8W_LED_Globe_Light
Globe	650-1,099	72	8W_LED_Globe_Light
Decorative			
Decorative	150-299	25	4W_LED_Candelabra
Decorative	300-499	40	4W_LED_Candelabra

Table 7. EISA-Exempt Lumens Bins (i.e., three-way, post lamps)

Bulb Type	Lumen bin	Baseline	Ameren Missouri Measure Category
EISA-Exempt	450-799	40	12W_LED_Dimmable
EISA-Exempt	800-1,099	60	12W_LED_Dimmable
EISA-Exempt	1,100-1,599	75	12W_LED_Dimmable

Table 8. Reflectors with Diameter >2.5 inches (>20 eighths of an inch)

Bulb Type	Bin	Baseline	Ameren Missouri Measure Category
D > 20	740-849	45	15W_LED_Flood_Light_PAR30
D > 20	850-1,179	50	15W_LED_Flood_Light_PAR30
D > 20	1,180-1,419	65	15W_LED_Flood_Light_PAR30
D > 20	1,420-1,789	75	15W_LED_Flood_Light_PAR30
D > 20	1,790-2,049	90	18W_LED_Flood_Light_PAR38
D > 20	2,050-2,579	100	18W_LED_Flood_Light_PAR38
Exclusion 2: BR30, BR40, and ER40 Lamps			
BR30, BR40, ER40	650-1,179	65	15W_LED_Flood_Light_PAR30
Exclusion 3: ER30 Lamps			
ER30	740-849	45	15W_LED_Flood_Light_PAR30
ER30	850-1,179	50	15W_LED_Flood_Light_PAR30

Table 9. Reflectors with Diameter >2.25 and <= 2.5 inches (>18 eighths of an inch and <= 20 eighths of an inch)

Bulb Type	Bin	Baseline	Ameren Missouri Measure Category
20 ≥ D > 18	300-539	30	10.5W_LED_Downlight
20 ≥ D > 18	540-629	40	10.5W_LED_Downlight
20 ≥ D > 18	630-719	45	10.5W_LED_Downlight
20 ≥ D > 18	720-999	50	10.5W_LED_Downlight
20 ≥ D > 18	1,000-1199	65	10.5W_LED_Downlight
Exclusion 1: R20 Lamps			
R20	450-719	45	10.5W_LED_Downlight
R20	720-999	50	10.5W_LED_Downlight
R20	1,000-1,199	65	10.5W_LED_Downlight