# EVALUATION OF AMERENUE'S CHANGE A LIGHT REBATE PROGRAM

*Prepared for*

**AMERENUE**

*Prepared by*

**OPINION DYNAMICS CORPORATION**
1030 Massachusetts Avenue
Cambridge, MA 02138
(617) 492-1400
www.opiniondynamics.com

*In Partnership With*

**GDS ASSOCIATES**

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## Executive Summary

The AmerenUE Change a Light rebate program promotes the sale of Energy Star® qualified lighting through a range of mechanisms including instant rebate coupons, product markdown efforts with manufacturers and retailers, and customer education efforts. The program is implemented by Midwest Energy Efficiency Alliance (MEEA) and based on the EPA program Change a Light, Change the World. (Further details on the program can be found in Section II.)

Based on the findings from this evaluation, program accomplishments between October 2003 and December 2006 include:

- Nearly 200,000 CFLs sold
- Forty seven participating retail locations where AmerenUE customers purchased program CFLs, with approximately 26 participating locations within AmerenUE territory
- A large number of first-time purchasers as a result of the program, and
- Over 79,831 MWh saved over the lifetime of the bulbs.

These program accomplishments are described in Section III.

Among non-participants within AmerenUE's service territory, 56% are not using any CFLs and 44% appear to be not very familiar with CFLs (i.e., 34% unfamiliar and 10% slightly familiar). This is similar to participant awareness of CFLs prior to program participation. Overall awareness in AmerenUE's territory is low compared to similar areas, and the AmerenUE program appears to be raising awareness of CFLs and reducing first costs. In addition, almost all participants in the program (94%) are satisfied with the CFLs that they purchased through the AmerenUE program, and 93% of participants report that they are likely to purchase CFLs in the future.

In addition to the high level of overall satisfaction among participants, the results of our impact analysis indicate that the program does lead to cost-effective energy savings. The impacts of the program (approximately 80 GWh) are relatively consistent with prior program estimates (described in more detail in Section IV), although our analysis made adjustments to the prior algorithm to more accurately reflect current trends in Missouri. Overall, therefore, this program is the most cost effective program in AmerenUE's current portfolio of energy efficiency programs, with more than ten times the savings of the other programs (and as much as 80 times the savings of some programs).

Based on our findings described in this report, we recommend that AmerenUE and the Collaborative consider the following process recommendations for future programs:

- Continue to offer the program to raise awareness among the 56% of non-participants who are not using CFL bulbs, and increase penetration of bulbs by reducing first cost

- Support mark down efforts since the program has been able to cost effectively move large numbers of bulbs this way

- Partner with additional retail locations to expand the reach of the program (particularly among those customers who are unaware)
- Expand the types of CFLs offered through the program and consider whether additional brands or wattages would increase program sales
- Conduct additional research with Home Depot stores to better understand in-service rates and other customer-based information for program purchases made through markdowns
- Expand advertising efforts to reach out to more non-participants who are not very familiar with CFLs
- Support and enhance in-store promotions
- Promote the benefits of CFLs including energy savings and other factors such as the environmental benefits and longer lifetime
- Keep good tracking databases while eliminating small inconsistencies and data gaps.

Details on each of these recommendations is provided in Section V.

# I. Introduction and Methodology

The AmerenUE Change a Light rebate program promotes the sale of Energy Star® qualified lighting through a range of mechanisms including instant rebate coupons, product markdown efforts with manufacturers and retailers, and customer education efforts. The program is implemented by Midwest Energy Efficiency Alliance (MEEA) and based on the EPA program Change a Light, Change the World.

Since 2003, AmerenUE has offered a $2 instant rebate coupons for qualified CFLs at participating retailer locations throughout its service territory. In 2006, AmerenUE also coordinated with Home Depot stores in the St. Louis area to mark down the price of qualified multi-packs of CFLs at the retailer level (i.e., no rebate coupons are required for participating customers).

This report provides a process and impact evaluation of the Change a Light Program, conducted by Opinion Dynamics Corp. in partnership with GDS Associates. This evaluation report is based on (1) our review of the program databases 2003-2006, (2) our review of MEEA's annual reports 2003-2006, (3) in-depth interviews with the MEEA program administrator and program stakeholders, (4) telephone interviews with program participants, and (5) telephone interviews with non-participating customers.

ODC interviewed 71 participating customers who used a rebate coupon to purchase a CFL at an Ace Hardware store in the Fall 2006. Our participant survey is based only on participants who used a rebate coupon at an Ace Hardware store since the program does not collect customer contact information for those who purchased CFLs through the markdown effort at Home Depot. Participant interviews were conducted between March 29, 2007 and April 1, 2007.

ODC also interviewed 100 AmerenUE customers who have not participated in the Change a Light rebate program. AmerenUE provided ODC with zip codes that fall within its service territory. Using this list, ODC obtained a random sample of phone numbers from these zip codes. We removed program participant phone numbers from this sample and conducted the non-participant interviews in April 2007.

We do not provide all of the detailed tables in the body of the write-up for the purpose of keeping the write-up as succinct as possible. Key tables are provided in the body of the write-up, with additional detailed tables denoted by the letter "D" and provided in Section VI of this report.

# II. Program Description

AmerenUE has been participating in the Change a Light, Change the World lighting campaign since 2003. AmerenUE provides funding to MEEA which coordinates a regional promotion of Energy Star lighting products and engages in an educational Energy Star lighting campaign to train retailers and consumers on the value of and how to sell Energy Star products. The campaign includes incentives, advertising and point-of-purchase materials.

Over the four years of the program, total program costs amounted to approximately $493,000, or 78% of the total amount budgeted for the program.

**Table 1: Program Funds 2003-2006***

| | Budget | | | |
|---|---|---|---|---|
| | **2003** | **2004** | **2005** | **2006^** |
| **TOTAL PROGRAM BUDGET** | **$170,000** | **$170,000** | **$170,000** | **$120,000** |
| Marketing | $17,777 | $29,883 | $14,587 | $1,343 |
| Rebates/Markdowns | $73,691 | $68,231 | $54,619 | $70,827 |
| MEEA Administration | $22,110 | $19,747 | $20,000 | $10,800 |
| Retailer materials (POP) | $1,184 | $100 | $ - | $ - |
| Implementation and field services | $18,645 | $16,565 | $22,494 | $9,435 |
| Fulfillment | $5,964 | $7,276 | $5,517 | $2,209 |
| **TOTAL PROGRAM COST** | **$139,371** | **$141,801** | **$117,218** | **$94,613** |
| **TOTAL 4-YEAR PROGRAM COSTS** | | | **$493,003** | |

*Program costs are from MEEA for the period July 1st to June 30th (e.g., program year 2004 runs from July 1, 2004 thru June 30, 2005). MEEA has indicated that this corresponds closely to sales within the respective calendar year (e.g., the budget described above is for bulb sales in 2004 since the promotions are generally in the fall, and administrative costs go into the next year.) This is slightly different than actual costs reported by AmerenUE, but the differences are less than $150 per calendar year.
^ Program year 2006 is through March 31, 2007.

According to MEEA Annual Reports, AmerenUE's lighting program sought to sell between 65,856 and 73,241 bulbs per year, with slight increases occurring in 2004 and 2005, and a 9% increase for 2006.

**Table 2: CFL Sales Goals**

| Year | CFLs |
|---|---|
| 2003 | 65,856 |
| 2004 | 66,609 |
| 2005 | 67,026 |
| 2006 | 73,241 |
| **TOTAL SALES GOAL** | **272,732** |

Since 2003, the program has distributed bulbs through Ace Hardware stores. Several other stores also played a role in the program between 2003 and 2006, to various degrees:

- In 2003 only, in addition to Ace Hardware, Lowes also sold program bulbs. Lowes, however, participated in the program for only one year and did not sell rebated bulbs after 2003.
- In 2004, the only retailer was Ace Hardware.
- In 2005, the program sold bulbs through Ace Hardware and five other retailers, but the number of bulbs sold through the non-Ace stores was limited. Home Depot was one of the retailers that sold program bulbs in 2005. However, program records document that they sold only a small number of program bulbs due to the fact that many Home Depots had problems tracking and submitting coupons in 2005.
- In 2006, the program was changed (partly in response to prior difficulties with coupons at Home Depot). The program continued to offer rebate coupons for single GE CFLs sold at Ace Hardware stores outside of the St. Louis area, and introduced a markdown on 6-packs of Commercial Electric CFLs sold at Home Depots inside the St. Louis area. Thus, in 2006, there were two very distinct aspects of the program.

The variety of bulbs sold through the program has increased since the early years of the program. Only 3 types of bulbs were sold through the program in 2003 and 2004, while customers received rebates for 15 different types of compact fluorescent bulbs in 2005 and 13 types of bulbs in 2006. (See Table 3.) Notably, however, in the St. Louis area in 2006, Home Depot promoted only one bulb type, a 13 watt 6-pack of CFLs.

**Table 3: Number of Unique Bulb Types Sold Through the Program**

| CFL Wattage | 2003 | 2004 | 2005 | 2006 |
|---|---|---|---|---|
| | # of Bulb Types Sold through the Program | | | |
| 10W | -- | -- | -- | 1 |
| 11W | -- | -- | -- | 2 |
| 13W | -- | -- | 1 | 2 |
| 14W | -- | -- | 2 | -- |
| 15W | 1 | 1 | 5 | 4 |
| 20W | 1 | 1 | 1 | 1 |
| 23W | -- | -- | 2 | -- |
| 26W | 1 | 1 | 2 | 2 |
| 29W | -- | -- | 1 | -- |
| 32W | -- | -- | 1 | 1 |
| **TOTAL** | **3** | **3** | **15** | **13** |

With the addition of Home Depot, the program expanded from only offering GE CFLs, to offering Commercial Electric CFLs. The program also expanded from offering single packs to multi-packs, and the rebate amount per unit increase accordingly (as shown in **Error! Reference**

**source not found.**)[1]. Again, however, as mentioned above, in 2006, the program only offered one type of bulbs through Home Depot (a 13-watt 6-pack of Commercial Electric CFLs). The other 12 types were offered at Ace Hardware stores outside of St. Louis.

In addition to the money spent on rebates, the program also investing in marketing and consumer education. The 2003-2006 marketing efforts included co-op advertising with Ace Hardware, the main retailer.[2] This advertising included print advertising in newspapers and Ace Hardware "shoppers" and circulars. All of the print advertising included the Change a Light, Change the World logo, price after instant rebate and listed AmerenUE as the program sponsor. For the 2006 campaign MEEA created a CFL ad template. By creating this ad template, it made the approval process much more efficient. The only requirement was that the retailer needed to use the AmerenUE logo. Also in 2006 AmerenUE began advertising the program though bill inserts to Missouri customers.[3]

The program also held CFL press/sales events. These events were designed to generate media coverage and PR for sponsors, educate customers on the benefits of CFLs, promote instant rebate and boost sales, and attract new retailers to the program. Five of these events per year were held in Missouri in both 2003 and 2004, three were held in 2005. Also in 2005 Ace retailers invited local radio stations to broadcast live from their stores in late October

In order to offer a coherent regional message to Midwest consumers, MEEA used the same point of sale (POS) template created for Wisconsin's Focus on Energy program. Materials were customized to have the AmerenUE logo included. MEEA coordinated the delivery of the POP materials to participating retailers such as Ace to ensure retailers received them and properly displayed them. These materials included directional signage, shelf shouters, promotional banners, reward forms, fact sheets and a promotional outline.

There was also a toll-free phone number customers could call to get more information on the program.

[1] We do not provide all of the detailed tables in the body of the write-up for the purpose of keeping the write-up as succinct as possible. Detailed tables not provided in the body of the write-up are provided in Section VI, and are denoted by the letter "D."

[2] In addition to co-op advertising, the 2003 program also relied on the national public relations efforts to bring awareness of the program. However due to the limited budget MEEA was unable to ensure that the local media knew there was a local story to tie to a national story though they were able to get some local radio coverage.

[3] Despite the small budget for marketing in 2006, the MEEA annual report indicates that this occurred.

# III. Program Accomplishments

Between 2003 and 2006, program accomplishments include:

- Nearly 200,000 CFLs sold
- Forty seven participating retail locations where AmerenUE customers purchased participant bulbs, with approximately 26 participating locations in AmerenUE territory
- A large number of first-time purchasers as a result of the program, as well as 66% of the CFLs in participant's homes purchased through the program, and
- Over 79,831 MWh saved over the lifetime of the bulbs

These accomplishments are described in more detail below.

## Nearly 200,000 Compact Fluorescent Light Bulbs Sold

Between 2003 and 2006, the AmerenUE program moved 196,807 compact fluorescent light bulbs into their market. Interestingly, the number of bulbs moved each year decreased from 2003 to 2005, but then increased to nearly 61,000 in 2006 with the addition of the "markdown" offering by Home Depot. In 2006, Home Depot was able to move as many bulbs as in earlier years for a much lower cost. This was primarily due to the fact that Home Depot sold 6-pack units through a markdown promotion.

**Table 4: Total Number of Bulbs Purchased by Program Year (2003-2006)**

| Year | Total Number of Bulbs Purchased | Average Program Cost per Bulb[a] | Estimated Cost per Bulb based on Goals |
|---|---|---|---|
| 2003 | 49,170 | $2.83 | $2.58 |
| 2004 | 47,056 | $3.01 | $2.55 |
| 2005 | 39,635 | $2.96 | $2.54 |
| 2006 | 60,946 | $1.55 | $1.64 |
| **Total** | **196,807** | **$2.51** | **--** |

a. Number of bulbs sold is from calendar year while program costs are for a fiscal year that generally runs from June to July.

Notably, however, the number of bulbs sold in this four year period falls short of the original program goals shown in Table 2 in the prior description of the program and program goals. Some of the budget was not spent since costs came in under budget. In looking at the average cost per bulb against the original goals, the average costs of the program was higher in 2003-2005 but the addition of the markdown in 2006 brought down the average cost significantly—even lower than originally anticipated (i.e. $1.55 per bulb compared to an estimated $1.64 per bulb).

While the number of unique households was not available for all program years, a review of the 2005 data gives some indication of the number of customers touched by the program. Based on our review of the 2005 data, 6,508 unique households received rebates in 2005. The average number of CFLs sold through the program per home was approximately six.

Customer information was not available for all bulbs sold in 2006 because Home Depot offered a markdown where customer data was not collected. However, based on the 2006 data for Ace Hardware purchases, 2,077 unique households received rebates through an Ace Hardware store in 2006. In addition, we estimate that between 4% and 11% of non-participants were touched by the markdown component of the program based on interviews with non-participants. Based on our survey results, at least 4% of non-participants purchased bulbs through the Home Depot mark downs; these respondents reported purchasing multi-packs of CFLs that were marked down or on sale. An additional 5% of non-participants stated that they purchased a multi-pack of CFLs from Home Depot but stated that they paid full price for the pack and another 2% did not recall if they paid full price (see **Error! Reference source not found.**).

Thus, while not a perfect estimate, the number of households served through this program between 2003-2006 could be as large as 32,000[4]—however, this is most likely an overestimate due to program overlap between years, and the fact that in 2006, many of the purchases were 6-packs through Home Depot, which would increase the average number of bulbs sold per home (and decrease the overall number of homes affected).

## Forty Seven Participating Retail Locations Where AmerenUE Customers Purchased Program Bulbs, Approximately 26 Participating Locations in AmerenUE Territory

Table 5 shows a total of 47 stores where AmerenUE customers purchased rebated CFLs in 2006. Many of these were outside of AmerenUE's territory (because this is a regional rebate program so some border AmerenUE customers may purchase at stores in other areas) and sold only a small number of bulbs to AmerenUE customers. Less than two-thirds of those 47 stores (or 26) sold more than 100 bulbs. (MEEA reports that 29 stores in AmerenUE's territory were participating stores in 2006.)

[4] Total program bulbs divided by the average number of bulbs sold per home, six.

**Table 5: Total Number of Locations where AmerenUE Customers Purchased Rebated CFLs**

| Store Type | 2003 | | 2004 | | 2005 | | 2006 | |
|---|---|---|---|---|---|---|---|---|
| | *# of Stores 2003* | # of Stores With >100 Bulbs Sold in 2003 | *# of Stores 2004* | # of Stores With >100 Bulbs Sold in 2004 | *# of Stores 2005*[a] | # of Stores With >100 Bulbs Sold in 2005 | *# of Stores 2006* | # of Stores With >100 Bulbs Sold in 2006 |
| Ace Hardware | *14* | 12 | *42* | 25 | *26*[b] | 16 | *25* | 10 |
| Do It Best | -- | -- | -- | -- | *2* | 0 | -- | -- |
| Home Depot | -- | -- | -- | -- | *8*[c] | 3 | *15* | 15 |
| Hy-Vee | -- | -- | -- | -- | -- | -- | *2* | 1 |
| Lowes | *12* | 9 | -- | -- | -- | -- | -- | -- |
| Menards | -- | -- | -- | -- | *4* | 0 | *1* | 0 |
| Theisens Farm & Home | -- | -- | -- | -- | *1* | 0 | -- | -- |
| True Value | -- | -- | -- | -- | *3* | 0 | *4* | 0 |
| **TOTAL** | ***26*** | **21** | ***42*** | **25** | ***44*** | **19** | ***47*** | **26** |

Note: The revised data that we received did not include information on the stores where bulbs were sold in 2003.
[a] Two locations (one Home Depot and one Ace) were referred to in two different ways so we combined them to reflect one unique location.
[b] Twelve locations and 1,318 bulbs were not accounted for in the *AmerenUE Ace Orders 2005.xls* file.
[c] Three Home Depot locations were only included because customers mailed in the rebate coupons and 2,370 of the Home Depot bulb sales were listed under "Home Depot" with a location of Atlanta, GA.

The overall trend is that the number of locations where customers purchase program bulbs has not increased a whole lot. The 2005 and 2006 programs included the addition of some Home Depot stores, but a commensurate reduction in the number of Ace Hardware stores. Thus, while the program has attempted to include two types of stores (that is, hardware stores and home improvement stores), the number of locations has fluctuated over the years and the stores selling more than 100 bulbs per year has not shown an increasing trend over the four year period. (See Table 5.)

Ace Hardware has been the most consistent retailer over the program period covered, with the majority of the bulbs moved by Ace Hardware. However, while the majority of bulbs sold through the program over the program period 2003-2006 were sold through Ace Hardware, there was a decrease in the number of Ace Hardware stores that sold rebated bulbs between 2004 and 2005. In 2006, the number of bulbs sold through Ace Hardware also significantly decreased. (See Table 6.)

Program sales at Home Depot, however, increased drastically in 2006 with the introduction of the markdown of 6-packs of bulbs. Home Depot sold 75% of all bulbs in 2006, followed by Ace Hardware which sold most of the remaining 25% of bulbs in 2006.

**Table 6: Total Number of Bulbs Purchased by Store Type**

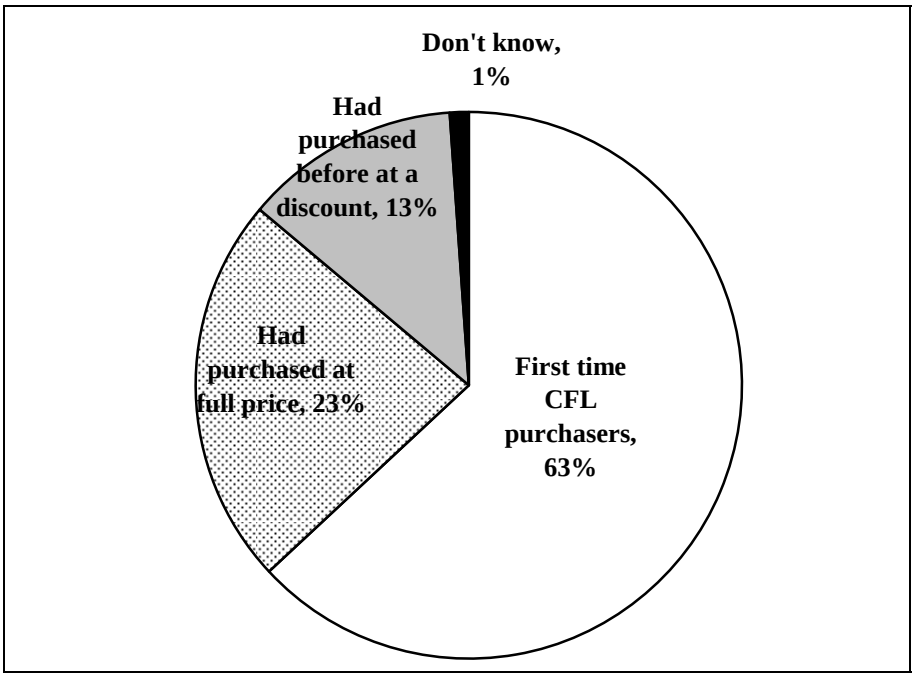
| Store Type | # of Bulbs Purchased in 2003 | # of Bulbs Purchased in 2004 | # of Bulbs Purchased in 2005 | #Bulbs Purchased in 2006 | Total |
|---|---|---|---|---|---|
| Ace Hardware | 39,380 | 47,056 | 35,547 | 15,076 | 137,059 |
| Home Depot | -- | -- | 4,012 | 45,684 | 49,696 |
| Lowes | 2,899 | -- | -- | -- | 2,899 |
| Hy-Vee | -- | -- | -- | 148 | 148 |
| True Value | -- | -- | 36 | 34 | 70 |
| Do It Best | -- | -- | 20 | -- | 20 |
| Menards | -- | -- | 14 | 4 | 18 |
| Theisens Farm & Home | -- | -- | 6 | -- | 6 |
| Unaccounted for[a] | 6,891 | -- | -- | -- | 6,891 |
| **TOTAL** | **49,170** | **47,056** | **39,635** | **60,946** | **196,807** |

[a] These bulbs were included in the *Sales-Data - AMEREN_Final.xls* file but not *2003 cal Ameren data.xls file* where stores were included.

## A Large Number of First-time Purchasers

Nearly two-thirds (63%) of the program participants were first time CFL purchasers (See Figure 1).

**Figure 1: Previous CFL Purchases Among Participants**




Many (47%) of the first time purchasers found out about the program because they saw it in a store, while others heard about it through a bill insert (9% of first time purchasers) or a newspaper ad (13%) (See **Error! Reference source not found.**).

Overall, participants report having a median of eight CFLs installed per home (See **Error! Reference source not found.**) compared to non participants, where the median is zero CFLs installed per home.[5] Based on survey results, we estimate that 66% of all CFLs currently installed in participants homes were installed through the AmerenUE rebate program.[6]

## Over 79,831 MWhs Saved Over the Lifetime of the Bulbs

Our impact analysis, described below, shows that 79,831,392 kWh are estimated to be saved over the lifetime of the program bulbs. The average savings per bulb is estimated to be between 48 kWh-51 kWh per year, or 0.0034-0.0036 kW, based on the changing types of bulbs sold over the 2003-2006 program period.

For the 2006 period alone, we estimate that the 60,946 bulbs sold resulted in 2,469 kW saved, and an annual savings of 2,432,941 kWh (or 48 kWh per bulb per year).

[5] We used median instead of mean given outliers. The mean for non-participants is four because of a small percentage of homes that report many CFLs.

[6] Total number of CFLs installed is based on QS1 and QS2 (749 CFLs). Number of CFLs purchased with a rebate and currently installed is based Q8, Q9, Q10 and Q11a. Q8 and Q9 verify and correct the number of CFLs purchased with a rebate and Q10 and Q11 ask how many of these bulbs are installed. Overall there are 496 rebated bulbs currently installed. 496 CFLs/749 CFLs = 66%

# IV. Impacts and Cost Effectiveness Analysis

The standard calculation for CFL energy savings is based on two assumptions: 1) an estimate of the difference between wattage of the incandescent lamp and wattage of the CFL that replaces it, and 2) an estimate of the average number of hours the CFL is used, or "hours of operation" as shown in the algorithm below.

**Compact Fluorescent Lamp Savings Calculation**

kWh = watts saved ∗ (hrs of operation per day ∗ 365 days)

verified gross kWh = watts saved * (hrs of operation per day * 365 days) * installation rate

realization kWh = verified gross kWh * (1 – freeridership rate) * (1 + spillover rate)

Assumptions of installation rate, spillover, and freeridership are then taken into account. For our analysis, these three factors come from the Opinion Dynamics Corporation survey of participants conducted for the evaluation (and described above). The survey found an installation rate of 84%, a spillover range from 7.7-12.8% (so an average of 10.25% was used), and a freeridership rate of 28%. These factors are described in more detail below.

Table 7 below, shows out estimated of savings for this program. The savings used in this evaluation are denoted as ODC/GDS. Quantities for number of CFLs purchased are obtained from the program databases, described above.

**Table 7: Summary of CFL Savings**

| | Gross | | | | Lifetime |
|---|---|---|---|---|---|
| | Purchased Light Bulbs | Demand Reduction / CFL | Saved Connected kW | Annual kWh Savings | kWh Savings |
| **ODC/GDS 2003** | 49,170 | 0.0036 | 2,543 | 2,505,837 | 20,341,648 |
| *MEEA 2003* | *49,047* | *0.0036* | *2,522* | *3,237,102* | *22,659,714* |
| **ODC/GDS 2004** | 47,056 | 0.0036 | 2,415 | 2,380,377 | 19,323,200 |
| *MEEA 2004* | *47,056* | *0.0036* | *2,420* | *3,105,696* | *21,739,872* |
| **ODC/GDS 2005** | *39,635* | *0.0035* | *2,009* | *1,979,533* | *1,662,808* |
| *MEEA 2005* | *39,616* | *0.0036* | *2,037* | *2,024,377* | *2,024,377* |
| **ODC/GDS 2006** | *60,946* | *0.0034* | *2,939* | *2,896,358* | *2,432,941* |
| *MEEA 2006** | *53,170* | *0.0036* | *2,734* | *2,716,986* | *2,282,268* |
| **Total ODC/GDS Savings from Program Bulbs:** | | | | | **79,831,392 kWh** |

*MEEA's 2006 data is currently being updated. The number of purchased light bulbs will be increased.

In the table below, we compare our findings to earlier findings reported in the MEEA annual reports. As the table above shows, our estimates are lower than MEEA's estimate of gross savings. This is suspected to be due: (1) adjustments made to hours of operation, (2) adjustments made to the displaced wattage, and (3) adjustments made to the lifetime of the bulbs. The specific assumptions behind our estimate of energy savings are laid out below.

## Displaced Wattage

The distribution of bulbs sold through the program varied from year to year (i.e., the average wattage of the bulbs sold through the program in 2004 is 17.5 watts compared to 14.2 watts in 2006 because most of the bulbs sold were 13 watts).

**Table 8: Total Number of Bulbs Purchased By Wattage Type**

| CFL Wattage | 2003 | | 2004 | | 2005 | | 2006 | |
|---|---|---|---|---|---|---|---|---|
| | Number of Bulbs Sold | Percentage of Bulbs Sold | Number of Bulbs Sold | Percentage of Bulbs Sold | Number of Bulbs Sold | Percentage of Bulbs Sold | Number of Bulbs Sold | Percentage of Bulbs Sold |
| 10W | -- | -- | -- | -- | -- | -- | 8 | <0.1% |
| 11W | -- | -- | -- | -- | -- | -- | 3 | <0.1% |
| 13W | -- | -- | -- | -- | 14 | <0.1% | 45,688 | 75% |
| 14W | -- | -- | -- | -- | 3,280 | 8.3% | -- | -- |
| 15W | 36,939 | 75.1% | 34,406 | 73.1% | 27,464 | 69.3% | 10,430 | 17.1% |
| 20W | 1,297 | 2.6% | 3,630 | 7.7% | 2,022 | 5.1% | 1,827 | 3.0% |
| 23W | -- | -- | -- | -- | 732 | 1.8% | -- | -- |
| 26W | 10,934 | 22.2% | 9,020 | 19.2% | 5,874 | 14.8% | 2,985 | 4.9% |
| 29W | -- | -- | -- | -- | 223 | 0.6% | -- | -- |
| 32W | -- | -- | -- | -- | 26 | 0.1% | 5 | <0.1% |
| **TOTAL** | **49,170** | **100%** | **47,056** | **100.0%** | **39,635** | **100.0%** | **60,946** | **100%** |
| **Average Wattage** | **17.6 watts** | | **17.5 watts** | | **17.0 watts** | | **14.2 watts** | |

The estimate of gross savings for CFLs assumes an incandescent comparable wattage for light bulbs being converted to CFLs. The values for these wattages come from the manufacturer's website when possible. On the websites are listed the CFL wattages and their equivalent incandescent wattages by CFL model number. When the manufacturer information was not available, we used standard equivalents from the Energy Star website. Most wattages came from the Energy Star website.

**Table 9: Watts Saved Based on Standard Assumptions**

| CFL Wattage | Standard Equivalent[a] | Watts Saved |
|---|---|---|
| 10w | 40w | 30w |
| 11w | 40w | 29w |
| 13w | 60w | 47w |
| 14w | 60w | 46w |
| 15w | 60w | 45w |
| 20w | 75w | 55w |
| 23w | 100w | 77w |
| 26w | 100w | 74w |
| 29w | 100w | 71w |
| 32w | 150w | 118w |

[a] http://energystar.custhelp.com/cgi-bin/energystar.cfg/php/enduser/std_adp.php?p_faqid=2563&p_created=1148315013&p_sid=pO4ygPui&p_accessibility=0&p_redirect=&p_lva=&p_sp=cF9zcmNoPTEmcF9zb3J0X2J5PSZwX2dyaWRzb3J0PSZwX3Jvd19jbnQ9MzkmcF9wcm9kcz0zMTUmcF9jYXRzPSZwX3B2PTEuMzE1JnBfY3Y9JnBfcGFnZT0x&p_li=&p_topview=1

Prior estimates from MEEA did not look at the specific bulbs sold through AmerenUE's program, and assumed that the average bulb sold through the program was a 17 watt bulb.

## Hours of Use

Our study used an hours of use estimate of 2.7 hours/day. A review of the hours of use assumptions that MEEA used to estimate savings shows that for 2003 and 2004, MEEA assumed that the average CFL use was 3.5 hours/day. MEEA then revised their assumption in 2005 (based on refined research in other areas of the country[7]) down to 2.7 hours a day for 2005 and 2006. Several of the assumptions behind MEEA's (and WI Focus on Energy's) early hours of use estimate stem from values determined by surveys, studies and reports. The early estimate of 3.5 hours of operation for CFLs is based off of a study completed in 2005 by Glacier Consulting Group, LLC. However, in the memo "Adjustments to CFL Operating Hours – Residential", the report notes how Focus on Energy's default use of 3.5 hours per day was too high. Their study concluded an average use of 2.7 hours per day was more accurate. In our analysis, we use the 2.7 hours/day estimate since this has been shown to be a more accurate estimate of usage.

## Lifetime of Bulbs

The rated life in hours is also listed on the manufacturer's website. Hours of life vary between bulbs. The rated life was determined by the specifications for each bulb, as listed on the manufacturer's website. Lifetime savings are calculated using each bulb's rated life.

Our estimates differ from MEEA's earlier estimates because MEEA uses a lifetime of seven years for all CFLs while GDS uses the rated life in hours provided by the manufacturer of the CFLs. (The WI values that MEEA adopted assumed a straight 7-year bulb life regardless of the lamp use per day. The rationale used for that analysis was that the average manufacturer reported lamp life was between 5,000 and 10,000 hours. Seven years was deemed an average life by the program.)

## In-service or Installation Rate

Based on our survey of participants in 2006, the majority of the CFLs (84%) purchased through the program are currently installed and most of those that are not are in storage for future use. We note, however, this may be different for purchasers at Home Depot in 2006 since these bulbs were sold as 6-packs. The number from our survey, based on participants at Ace Hardware, is used as a best estimate at this time.

[7] May 23, 2005 memo from WI Focus on Energy evaluation contractor to the Public Service Commission of Wisconsin regarding adjustments to CFL operating hours for the residential program.

**Table 10: CFLs Purchased Through Program**

| | Use of Program Bulbs |
|---|---|
| Currently installed | 84% |
| Stored for future use | 12% |
| Given away | 4% |
| Removed | <1% |
| In place but no longer working | <1% |

## Freeridership

In our survey, we asked participants standard freeridership questions concerning what they would have done in the absence of the rebate program. About one-third (35%) would have been willing to pay the full cost of the CFL ($2 more than they paid with the rebate coupon).

**Table 11: Willingness to Pay**

| | Total (n=71) |
|---|---|
| Would have paid $2 more | 35% |
| *First time CFL purchaser* | *17%* |
| *Purchased CFLs prior to participating* | *17%* |
| Would have paid $1 more | 30% |
| *First time CFL purchaser* | *18%* |
| *Purchased CFLs prior to participating* | *11%* |
| Would not have paid more | 30% |
| *First time CFL purchaser* | *24%* |
| *Purchased CFLs prior to participating* | *6%* |
| Don't know | 5% |
| *First time CFL purchaser* | *4%* |
| *Purchased CFLs prior to participating* | *1%* |

Participants who were willing to pay the full cost of the CFL were then asked how many CFLs they would have purchased if there had not been a rebate available. We used this question to adjust the level of freeridership for any respondent to account for partial freeridership as the program may enable someone to purchase more CFLs than they otherwise would have. Based on these responses overall freeridership is 28% as shown in the table below.

**Table 12: Freeridership Calculation**

| Purchased CFLs Without Program | Freerider Scoring | Total (n=71) | Free-Ridership Score |
|---|---|---|---|
| Definitely would have purchased the same number or more | 100% | 12% | 12% |
| Probably would have purchased the same number | 90% | 6% | 5% |
| Probably would have purchased fewer | 75% | 11% | 8% |
| Definitely would have purchased fewer | 50% | 4% | 2% |
| Would have purchased but don't know how many | 100% | 1% | 1% |
| Would not have purchased | 0% | 65% | 0% |
| **FREE RIDERSHIP RATE** | | | **28%** |

Alternatively, however, if we look only at customers who were not influenced by program ads, and had made prior purchases of CFLs, freeridership may be as low as 7%. To be conservative, however, we use an estimate of 28% freeridership in our calculation of impacts since this is comparable to what is used in other areas of the country.

**Table 13: Willing to Pay Full Price**

| | **Total (n=71)** |
|---|---|
| Would have paid $2 more | 35% |
| *Influenced by ads and hadn't purchased CFLs before* | *14%* |
| *(No ads) Hadn't purchase CFLs before* | *4%* |
| *Influenced by ads and purchased CFLs before* | *10%* |
| *(No ads) Purchased CFLs before* | *7%* |

## Spillover

Twelve of the 71 participating respondents purchased additional CFLs since participating in the program without a rebate coupon and not at a Home Depot store and stated that they would not have purchased additional bulbs if they had not had the prior experience with the AmerenUE rebate. These 12 respondents purchased an additional 46 CFLs since participating in the program.

An additional six people purchased CFLs since participating in the program but were not specifically able to attribute their purchase to their prior experience with CFLs from the AmerenUE lighting program. These six people purchased 30 additional CFLs since participating in the program.

In total respondents purchased 592 CFLs. Spillover can be estimated to between 7.7% and 12.8%.[8] In our analysis, we used an average of 10.25%.

## Coincidence Factor

A coincidence factor of 0.07 is used for all four years to get the Gross Connected Kilowatts Saved. This value comes from Impact Evaluation of the Massachusetts, Rhode Island, and Vermont 2003 Residential Lighting Programs Final Report (2004).[9]

[8] 46 CFLs /592 Rebated CFLs = 7.7%, 76 CFLs /592 Rebated CFLs = 12.8%

[9] *Impact Evaluation of the Massachusetts, Rhode Island, and Vermont 2003 Residential Lighting Programs Final Report*. Submitted to The Cape Light Compact; State of Vermont Public Service Department for Efficiency Vermont; National Grid (Massachusetts Electric, Nantucket Electric, and Narragansett Electric); Northeast Utilities (Western Massachusetts Electric); NSTAR Electric; and Unitil Energy Systems, Inc. (Fitchburg Gas and Electric). Submitted by Nexus Market Research, Inc. and RLW Analytics, Inc. October 1, 2004.

## Cost-Effectiveness

Over the four years 2003-2006, the program costs have totaled $493,003 for a total savings of 80 GWh. Paybacks for the four years of the program range from 0.6 to 0.9 years. Overall, the benefit-cost ratio varies between 7.7 and 11.7.

Benefits are calculated using a $0.066/kWh rate, which was provided by Ameren as a standard electric rate charged to their customers. The discount factor was provided by the *Energy Price Indices and Discount Factors for Life-Cycle Cost Analysis - April 2006* report from the US Department of Commerce to the US Department of Energy (http://www1.eere.energy.gov/femp/pdfs/ashb06.pdf). In the report, table Ba-2 uses a 3% rate of inflation and has discount factors adjusted for the Missouri area. Most light bulbs were calculated to last for eight years based on their rated life and the assumption each bulb would run for 2.7 hours per day. Referencing the residential, electric column and looking to eight years of life, a discount factor of 6.90 was discovered. Using the discounted factor, the discounted savings and the benefit-cost ratio were calculated.

**Table 14: Benefit-Cost Ratios**

| | 2003 | 2004 | 2005 | 2006 |
|---|---|---|---|---|
| Cost | $ 139,371 | $ 141,801 | $ 117,218 | $ 94,613 |
| Benefit | $ 165,385 | $ 157,105 | $ 130,581 | $ 160,581 |
| Payback | 0.8 | 0.9 | 0.9 | 0.6 |
| Discount Factor | 6.90 | 6.90 | 6.90 | 6.90 |
| Discounted Savings | $ 1,141,157 | $ 1,084,025 | $ 901,009 | $ 1,108,009 |
| Benefit Cost Ratio | 8.2 | 7.6 | 7.7 | 11.7 |

MEEA's report included only basic financial analysis for the entire Change-A-Light program and not for each region involved with the program. Because of this, it is impossible to compare MEEA's cost-benefit data to ODC/GDS data.

Detailed spreadsheets on the savings and life cycle costs analyses were provided to AmerenUE along with this report.

# V. Process Findings and Recommendations

Among non-participants within AmerenUE's service territory, 44% appear to be not very familiar (i.e., 34% unfamiliar and 10% slightly familiar) with CFLs, and 56% of non-participants have never purchased a CFL. This is similar to participant awareness of CFLs prior to program participation.

Overall, the program appears to be raising awareness of CFLs and reducing first costs. In addition, almost all participants in the program (94%) are satisfied with the CFLs that they purchased through the AmerenUE program, and 93% of participants report that they are likely to purchase CFLs in the future. (See **Error! Reference source not found.**, **Error! Reference source not found.**, **Error! Reference source not found.** and Section VI Table D-7)

Our process related findings and recommendations are described in more detail below.

- **Continue to offer the program to raise awareness and reduce first cost among the 56% of non-participants who are not using CFL bulbs and increase penetration of bulbs by reducing first cost**

  AmerenUE should continue to offer the program to raise awareness of energy efficient bulbs. Awareness of CFLs in AmerenUE's territory is still low.[10] Among non-participants, 44% appear to be not very familiar or unfamiliar with CFLs.[11] This is in agreement with comments from participants: many participants (58%) also indicated that their awareness of CFLs was low prior to their purchase through AmerenUE's program. In general, the AmerenUE lighting rebate program appears to be raising awareness of CFLs and has attracted a large number of first time CFL purchasers (63% of all participants).

  AmerenUE should also continue to reduce the first cost of the bulbs through the program because for a large number of AmerenUE customers (both participants, 51%, and non-participants, 46%), price is the factor considered most when purchasing light bulbs (see **Error! Reference source not found.**); and 68% of participants and 71% of non participants believe that CFLs are more expensive than incandescents (See **Error! Reference source not found.**). Because CFLs are generally more expensive than incandescents, over 60% of program participants would not have made the CFL purchase if they had to pay full price for it and others would not have purchased the bulbs if they had not been made aware through the program. (Freeridership is estimated to be 28%, see impact section above.) The AmerenUE program appears to be effective at getting additional CFLs into the market, and AmerenUE should continue to offer a program to raise awareness and reduce costs in order to overcome these two barriers.

- **Support mark down efforts since the program has been able to cost effectively move large numbers of bulbs this way**

[10] This is similar to what ODC found in other areas of the country, including Arizona and Long Island.

[11] Even among non-participants who are familiar with CFLs, many are unable to provide feedback on how a CFL compares to an incandescent (indicating "unfamiliarity").

As shown in Table 15 above, the markdown promotion was able to significantly reduce the program costs per bulb. As such, AmerenUE should continue to support markdown efforts since the program has been able to cost effectively move large numbers of bulbs this way. In doing so, however, the program administrators should continue to work towards increasing awareness, the number of retailers, variety of products in the market, as well as determining better ways of understanding the impacts from these sales (discussed more below.)

We also note that for many smaller store types, markdown efforts are not as feasible as rebate coupons. Thus, AmerenUE may continue to want to offer both rebates and markdowns depending on the program goals.

- **Expand advertising efforts to reach out to more non-participants who are not very familiar with CFLs**

Because awareness of CFLs still remains somewhat low in AmerenUE's territory, advertising and promoting energy efficient CFLs is important in this region. Based on our survey of non-participating customers: 45% of non-participants are using at least one CFL, an additional 21% of non-participants state that they are at least slightly familiar[12] but are not using, and 34% of non-participants are not familiar with CFLs. Awareness, therefore, appears to be the biggest barrier among non-participants.

The current advertising efforts appear to be effective at reaching customers and encouraging the use of CFLs. The ads seem to drive people to the store to buy CFLs with 59% of participants stating they saw the ads prior to entering the store. Most of these respondents recall seeing advertisements in Ace Hardware advertisements or circulars. Others, however, recall seeing ads and displays at Home Depot and news stories in magazines on CFLs that influenced their purchase. Even among participants who would pay full price for the CFL, many seemed to be influenced by the advertisements they saw (See Table 13, 17 of 25 participants who would have paid the full price were influenced by ads prior to making their purchase).

While participants have been drawn in by the advertising and marketing efforts, only 6% of non participants have seen any Ace Hardware advertisements for CFLs. Non-participants are seeing some messaging (about one-third, 32%, of non-participant heard the Change a Light, Change the World slogan within the past year) but overall awareness of the AmerenUE program is low. (See **Error! Reference source not found.**.) Only 3% of non participants were aware that AmerenUE sponsors a program that allows customers to receive a rebate on the purchase of CFLs at Ace Hardware stores, and only 5% were aware of the Ameren UE program that reduced the price on CFLs at Home Depot. Increasing awareness of rebates through increase marketing and promotion outside of the current Ace Hardware and Home Depot channels will help extend the reach of the program.

- **Partner with Wal-Mart or other retail locations to expand the reach of the program particularly among those who are unaware**

[12] For many, "slightly familiar" is just a softer way of indicating that they are not familiar.

While there were 26 locations that sold more than 100 CFLs in 2006, the number of participating retailers and locations does not appear to be growing. The program emphasizes two well-known and effective retail outlets (i.e., Ace Hardware and Home Depot); however, in 2006, the program only worked with Ace Hardware stores outside of metro St. Louis, and only worked with Home Depot stores inside of metro St. Louis, so in effect there was only one retailer that sold program bulbs in each area.

While many non-participating customers purchase from Ace (12%) and Home Depot (28%), Wal-Mart also appears to be a major retailer for light bulbs within the AmerenUE territory—particularly among non-participants. (See Table 16 and **Error! Reference source not found.**.) As such, the program should consider ways to expand the partnership to Wal-Mart and/or other retailers.

**Table 16: Where Lighting Purchases Are Made (multiple responses)**

| | Non Participants (n=100) | Among Non-Participants Who Currently Do Not Use CFLs (n=56) |
|---|---|---|
| Wal-Mart | 39% | 39% |
| **Home Depot** | 28% | **16%** |
| **Ace Hardware** | 12% | 13% |
| Lowe's | 12% | **13%** |
| Grocery store | 11% | 9% |
| Where ever they are on sale | - | - |
| Target | 4% | 4% |
| Kmart | 3% | 5% |
| Hy vee | - | - |
| Dollar Store | 4% | 7% |
| Sam's Club | 2% | - |
| Discount store | | - |
| Walgreen's | 1% | 2% |
| Other | 2% | 4% |
| Don't know | 3% | 2% |

Notably, however, in 2007, Wal-Mart has started some of its own marketing nationwide to promote the purchase of CFLs with its customers.

- **Expand the types of CFLs offered through the program and consider whether additional brands or wattages would increase program sales**

Many customers feel that the selection of CFLs is less than the selection of incandescents (42% of participants and 41% of non-participants who are familiar with CFLs). (See **Error! Reference source not found.**.) As such, this may be one barrier for customers.

While the number of types of CFLs offered through the program has increased over the years, only two brands of CFLs are offered through the program (GE and Commercial

Electric) which is less than similar programs in other service territories. Moreover, the majority of bulbs sold are 13-watt CFLs. In fact, in 2006, the program offered only one type of bulb in the St. Louis metro area (a Commercial Electric 13-watt bulb) sold as a six-pack. Brand is important to about 43% of non-participants. While satisfaction with GE is high (more than 90% of all customers have a favorable opinion of GE), in general, Commercial Electric bulbs (sold at Home Depot), are "unknown" by customers. Among non-participants that thought brand was at least somewhat important only a few (4%) had an unfavorable opinion of the brand but most (74%) had not heard of Commercial Electric (this includes 60% who said that they never heard of Commercial Electric and 14% who said they "didn't know") (**Error! Reference source not found.** and **Error! Reference source not found.**). While the current brands and types of bulbs provide satisfaction to most participants, we were not able to contact participants who bought Commercial Electric bulbs given the lack of participant data from Home Depot markdowns. AmerenUE should consider efforts to increase the selection of CFLs promoted through the program in order to expand the reach of the program. For the future, AmerenUE should also consider research to better understand satisfaction with Commercial Electric bulbs since some types of bulbs are known to be less satisfying for customers due to color or brightness (see below).

- **Conduct additional research with Home Depot stores to better understand in-service rates and other customer-based information for purchases made through mark down efforts**

Little information (besides sales) is available for the markdown efforts through Home Depot. While our evaluation made assumptions based on surveys with participants who purchased from Ace, notably, in-service and freeridership rates may be different for purchasers at Home Depot in 2006 since these bulbs were sold as 6-packs. Moreover, as mentioned above, overall satisfaction may be different since the two retailers sold different types of bulbs by different manufacturers.

Information on the number of bulbs sold per customer (transaction data) is also not available for Home Depot). Based on 2005 data (i.e., the latest set of data with information on households), most households purchased six bulbs; however, notably, 16% percent of participating households in 2005 appear to have bought more than six bulbs, with 14 households buying 50 or more bulbs. The number of bulbs sold to each household ranged from one to 190 bulbs in 2005 (with rebate amounts ranging from $2 to $380 per home). While 2006 data was only available for Ace Hardware purchases, the number of bulbs sold to each household ranged from one to 88 bulbs in 2006 (with rebate amounts ranging from $2 to $176 per home).[13] Numbers for Home Depot in 2006 were not available since customer data was not collected, but since the program bulbs were sold as six packs, the average number of bulbs per home was most likely higher in 2006 than in 2005.

As such, additional tracking may be necessary. AmerenUE may want to consider whether additional details (such as the number of transactions) are necessary to ensure that bulbs sold through Home Depot are not being sold by the pallet, or sold for resale at other locations.

[13] Again, however, this does not include Home Depot sales which were only sold as 8-packs in 2006 and accounts for 75% of the total CFLs purchased.

AmerenUE should also consider future in-store research with Home Depot customers to better understand their purchase habits, use of bulbs, and satisfaction with bulbs sold at Home Depot since the markdown component of the program is very different than the rebate program. (That is, the type of store, type of customer, brand of bulb, price of the bulbs and number of bulbs per package all differ.)

If AmerenUE focuses on markdown efforts in the future, they may also want to gather additional information from MEEA on the percentage of bulbs sold to customers in other service territories to better understand leakage rates for future markdown efforts. (Notably, our evaluation did not deal with leakage from the mark down into other territories since the markdown was primarily in the St. Louis area.)

- **Support and enhance in-store promotions**

Overall, 39% of participants found out about the AmerenUE lighting rebate program from in store displays. Forty-seven percent of first time purchasers found out about the program this way. As such, the in-store POP and promotion efforts appear to be effective. AmerenUE should continue to work with Ace Hardware and Home Depot to place in-store advertisements, promotions and POP materials in prominent locations. As the program expands to other stores, AmerenUE should also include in store promotions in other stores since many customers find out about the program through this method.

Additionally, AmerenUE could consider using in-store promotions and consumer messaging to educate consumers about the improvements in the technology, and overcome perceptions that the turn-on time and aesthetics lag behind incandescent lighting. Some efforts to support this may include:

- Demonstrate the technological advances that have been through in-store demonstrations.
- Develop alternative sponsor created POP and marketing materials that promote the recent improvements in CFL technology that address many of the earlier issues with older products (as well as the total savings associated with program lighting products).
- Consider supporting A-lamp looking products or products that are similar in shape, size and light levels to alternative non-energy efficient equivalents if high-quality products can be found.

Currently, only 38% of non-participants say that they would use a CFL in their most frequently used lighting (Section VI Table D- 1). As such, a lot of potential opportunities exist once more consumers understand that there are CFLs that can meet the diversity of their lighting needs.

- **Promote the benefits of CFLs including energy savings and other factors such as the environmental benefits and longer lifetime**

The top motivating factors for purchasing CFLs are energy savings (54% participants and 60% non-participants) and saving money on electric bills (24% and 11% respectively) (See **Error! Reference source not found.**). These characteristic, therefore, should continue to be stressed in promotional materials. When asked about other characteristics, however, participants appear to be more familiar with the longer life of CFLs, the environmental

benefits, and participants are more likely to think that the color of CFLs is better or the same as an incandescent. (See **Error! Reference source not found.**). Since non-participants are less likely to know that CFLs are more environmentally friendly or that they last longer than incandescent bulbs or that the color is comparable, AmerenUE should consider raising awareness of these characteristics in their promotion of CFLs.

- **Keep good tracking databases while eliminating small inconsistencies and data gaps**

Overall, the databases appear to be well maintained and to contain most of the necessary information for evaluation (with the exception of customer information for those who purchased through the markdown efforts, described above).

Notable gaps and inconsistencies in the databases that we reviewed include:

- No data is available on the store locations where 6,891 bulbs were sold in 2003.
- There are 406 customer records in 2005 with **only** a store name and no customer information.
- There are 41 customer records in 2005 that appear to have commercial names (i.e., Ahel Oil Co).
- We do not appear to have customer data for the bulbs sold through the events held at the Earthway Center and Westlake Ace stores in Jefferson City and Springfield in 2005.

As possible, AmerenUE should encourage MEEA to continue to keep good tracking databases and track additional information if possible.

# VI. Detailed Data Tables

### Section VI Table D-1: Detailed Description of Total Number of Bulbs Purchased by Bulb Type

| Manufacturer/ Retailer | Model # | Bulbs per Pack | CFL Wattage | Instant Rebate Amount | Number of Bulbs Purchased | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | 2003 | 2004 | 2005 | 2006 |
| **Ace, Do It Best, True Value, Hy-Vee** | | | | | | | | |
| General Electric | 41520 | 1 | 15w | $2.00 | 36,939 | 34,406 | 27,158[a] | 10,136 |
| General Electric | 15517 | 1 | 26w | $2.00 | 10,934 | 9,020 | 5,862[b] | 2,974 |
| General Electric | 15516 | 1 | 20w | $2.00 | 1,297 | 3,630 | 2,022 | 1,827 |
| General Electric | 21733 (A-line) | 1 | 15w | $2.00 | -- | -- | 258[c] | 273 |
| General Electric | 20708 (Reflector) | 1 | 15w | $2.00 | -- | -- | 40 | 15 |
| General Electric | 21739 (PAR38) | 1 | 26w | $2.00 | -- | -- | 12 | 11 |
| General Electric | 49906 | 1 | 10w | $2.00 | -- | -- | -- | 8 |
| General Electric | 21710 (Dimmable) | 1 | 15w | $2.00 | -- | -- | 2 | 6 |
| General Electric | 24684 | 1 | 32w | $2.00 | -- | -- | 26 | 5 |
| General Electric | 49895 (Bug) | 1 | 11w | $2.00 | -- | -- | -- | 2 |
| General Electric | 49894 (Post) | 1 | 11w | $2.00 | -- | -- | -- | 1 |
| General Electric | 41442 (3-way) | 1 | 29w | $2.00 | -- | -- | 223 | -- |
| **Home Depot** | | | | | | | | |
| Commercial Electric[g] | NA | 6 | 13w | $4.00[g] markdown | -- | -- | -- | 45,684 |
| Commercial Electric | 292-460 | 6 | 14w | $4.00 | -- | -- | 3,144[d] | -- |
| Commercial Electric | 591-830 | 4 | 23w | $4.00 | -- | -- | 548[e] | -- |
| Commercial Electric | 590-472 (PAR38) | 4 | 23w | $4.00 | -- | -- | 184[f] | -- |
| Commercial Electric | 166-785 (R30) | 4 | 14w | $4.00 | -- | -- | 136 | -- |
| **Menards** | | | | | | | | |
| Buyer's Choice | 29131 | 2 | 13w | $4.00 | -- | -- | 14 | 4 |
| **Theisens Farm & Home** | | | | | | | | |
| Westinghouse | 07205 | 1 | 15w | $2.00 | -- | -- | 6 | -- |
| | **TOTAL** | | | | **49,170** | **47,056** | **39,635** | **60,946** |

[a] Includes 24 bulbs with the description "GE 15w MiniSpiral – 41520".
[b] Includes 4 bulbs with the description "GE 26W Spiral – 15517 15836".
[c] Includes 4 bulbs with the description "GE 15W Cov A-Line".
[d] Includes 4 records of bulbs with the description "Comm Electric 14W MS – 6 pack" which were mailed in and seem to have been improperly entered into the database as 2 individual bulbs for a total rebate of $4 instead of 1 pack of 6 bulbs (i.e., should have been 24 bulbs instead of 8).
[e] Includes 1 record of bulbs with the description "Comm Electric 14W Minisprl" which were mailed in and seem to have been improperly entered into the database as 2 individual bulbs for a total rebate of $4 instead of 1 pack of 4 bulbs (i.e., should have been 4 bulbs instead of 2).
[f] Includes 1 record of bulbs with the description "Comm Electric 14W Reflectr" which were mailed in and seem to have been improperly entered into the database as 2 individual bulbs for a total rebate of $4 instead of 1 pack of 4 bulbs (i.e., should have been 4 bulbs instead of 2).
[g] According to the AmerenUE spreadsheet.

**Section VI Table D-2: ENERGY STAR Awareness**

| | Participants (n=71) | Non Participants (n=100) |
|---|---|---|
| Aware | 65% | 54% |
| *Unaided* | *58%** | *40%* |
| *Aided* | *7%* | *14%* |
| Not aware | 34% | 45% |
| Don't know | 1% | 1% |

*significantly higher than comparison group at 90%

**Section VI Table D-3: What ENERGY STAR Label Means**

*(Of those that are aware of the label)*

| | Participants (n=46) | Non Participants (n=54) |
|---|---|---|
| Uses less energy | 48% | 56% |
| Lower utility bills | 28% | 35% |
| High quality | 11% | 4% |
| Good for the environment | 11% | 11% |
| Less pollution | 7% | 7% |
| Product is tested | - | 7% |
| Government endorsed | - | 2% |
| Haven't thought about it | - | 6% |
| Other | 2% | - |
| Don't know | 9% | 6% |

**Section VI Table D-4: Aware of CFLs**

*(Participants-Prior to Using Rebate)*

| | Participants (n=71) | Non Participants (n=100) |
|---|---|---|
| Very familiar | 15% | 38%* |
| Somewhat familiar | 27% | 18% |
| Slightly familiar | 37%* | 10% |
| Not at all familiar | 21% | 30% |
| Don't know | - | 4% |

*significantly higher than comparison group at 90%

- 45% of non participants have purchased a CFL

## Section VI Table D-5: Non Participants Last Purchase of CFLs

| QL6a: When did you last purchase a CFL? | Non Participants (n=45) |
|---|---|
| Within last year | 78% |
| One to two years ago | 13% |
| Two to four years ago | 7% |
| Four to six years ago | - |
| More than six years ago | - |
| Don't know | 2% |

## Section VI Table D-6: Satisfaction with CFLs

| | Participants (n=71) |
|---|---|
| Very satisfied | 77% |
| Somewhat satisfied | 17% |
| Somewhat dissatisfied | 4% |
| Very dissatisfied | - |
| Don't know | 1% |

## Section VI Table D-7: Likelihood of Purchasing CFLs in the Future

| | Participants (n=71) | Non Participant (n=66) |
|---|---|---|
| Very likely | 73% | 41% |
| Somewhat likely | 20% | 38% |
| Neither likely or unlikely | 1% | 3% |
| Somewhat unlikely | 1% | 8% |
| Very unlikely | 3% | 9% |
| Don't know | 1% | 2% |

## Section VI Table D-8: How Important is Brand Name

| | Participant Total (n=71) | Non Participant (n=100) |
|---|---|---|
| Not at all important | 27% | 40%* |
| Somewhat unimportant | 24%* | 10% |
| Neither important nor unimportant | - | 5% |
| Somewhat important | 34% | 24% |
| Extremely important | 13% | 19% |
| Don't know | 3% | 2% |

*significantly higher than comparison group at 90%

**Section VI Table D-9: Light Bulb Brands**
**Among Those that Think Brand Is At Least Somewhat Important**
**Participant (n=33), Non Participant (n=43)**

| | GE | | Commercial Electric | | Sylvania | | Westinghouse | |
|---|---|---|---|---|---|---|---|---|
| | Part. | Non Part. | Part. | Non Part. | Part. | Non Part. | Part. | Non Part. |
| Very favorable | 64% | 74% | 15% | 5% | 48% | 35% | 21% | 30% |
| Somewhat favorable | 30% | 16% | 15% | 2% | 36% | 26% | 39% | 23% |
| Neither favorable nor unfavorable | - | 5% | - | 14% | 3% | 7% | 6% | 7% |
| Somewhat unfavorable | - | - | 6% | 2% | - | 9% | 9% | 14% |
| Very unfavorable | - | - | - | 2% | - | - | - | 2% |
| Never heard of this brand | 3% | 2% | 36% | 60%* | 3% | 9% | 9% | 5% |
| Don't know | 3% | 2% | 21% | 14% | 9% | 14% | 15% | 19% |

*significantly higher than comparison group at 90%

**Section VI Table D-10: How Do You Find Out About the Rebate (multiple responses)**

| | Total (n=71) | First Time Purchaser? | | Would Have Paid Full Price? | |
|---|---|---|---|---|---|
| | | Yes (n=45) | No (n=25) | Yes (n=25) | No (n=40) |
| Saw it in a store | 39% | 47% | 28% | 20% | 53%* |
| Newspaper | 23% | 13% | 36%* | 28% | 18% |
| Friend/family/co-worker | 13% | 9% | 20% | 20% | 10% |
| Ace hardware circular | 8% | 7% | 12% | 4% | 13% |
| Bill insert | 6% | 9% | - | 4% | 5% |
| Radio | 3% | 4% | - | 8% | - |
| Website | 1% | 2% | - | 4% | - |
| TV | 1% | - | 4% | 4% | - |
| Other press event | 1% | 2% | - | 4% | - |
| Other | 1% | 2% | - | 4% | - |
| Don't know | 3% | 4% | - | - | 3% |

*significantly higher than comparison group at 90%

## Section VI Table D-11: Comparing CFL to Incandescent Bulbs

| | Participant (n=71) | Non Participant (n=70) |
|---|---|---|
| **A CFL is…than an incandescent bulb** | | |
| More expensive | 68% | 71% |
| Less expensive | 15%* | 3% |
| Same | 10% | 4% |
| Depends on application | 1% | - |
| Don't know | 6% | 21%* |
| **The color of light from a CFL is….than an incandescent bulb** | | |
| Better | 45%* | 20% |
| Same as | 34% | 27% |
| Worse | 11% | 24%* |
| Depends on application | 3% | 4% |
| Don't know | 7% | 24%* |
| **A CFL is…than an incandescent bulb** | | |
| More environmentally friendly | 76%* | 50% |
| Equally environmentally friendly | 10% | 11% |
| Less environmentally friendly | 4% | 9% |
| Depends on application | - | 3% |
| Don't know | 10% | 27%* |
| **A CFL lasts… an incandescent bulb** | | |
| Longer | 83%* | 63% |
| Same | 3% | 7% |
| Shorter | 1% | 1% |
| Depends on application | - | - |
| Don't know | 13% | 29%* |
| **There is a …selection of CFLs than incandescent bulbs** | | |
| Worse | 42% | 41% |
| Same | 28% | 20% |
| Better | 24%* | 7% |
| Depends on application | 1% | 1% |
| Don't know | 4% | 30%* |
| **A CFL has a … startup time as an incandescent bulb** | | |
| Slower | 82%* | 44% |
| Same | 11% | 23%* |
| Faster | 6% | 3% |
| Depends on application | 1% | - |
| Don't know | - | 30%* |
| **A CFL fits into a light fixtures … than an incandescent bulb** | | |
| Same | 63%* | 49% |
| Worse | 15% | 11% |
| Better | 13% | 4% |
| Depends on application | 7% | 9% |
| Don't know | 1% | 27%* |

**Section VI Table D-12: Factors Considered When Purchasing Light Bulbs**

| | Participants (n=71) | Non Participants (n=100) |
|---|---|---|
| Price | 51% | 46% |
| Color of light | 17% | 15% |
| Environmental impacts | 15% | 9% |
| Brand | 14% | 15% |
| Aesthetics | 10% | - |
| Lifetime | 10% | 6% |
| Operating cost | 8% | 7% |
| Availability/selection | 1% | 5% |
| Fit | 1% | 3% |
| Efficiency | - | 14% |
| Other | 6% | 9% |
| Don't know | 8% | 7% |

**Section VI Table D-13: Would Choose a CFL or Incandescent For Most Frequently Used Lighting**

| | Participants (n=71) | Non Participants (n=70) |
|---|---|---|
| Would choose CFL | 80% | 54%[a] |
| Would choose incandescent because CFL… | 15% | 29% |
| *Takes to long to come on* | *6%* | - |
| *Too dim/not bright enough* | *4%* | *9%* |
| *Ugly/unattractive* | *1%* | *1%* |
| *Doesn't fit into socket* | *1%* | - |
| *Doesn't work with dimmer* | *1%* | *1%* |
| *Don't believe advertising* | - | *3%* |
| *Other* | - | *4%* |
| *Don't know* | *1%* | *10%* |
| Don't know | 4% | 17% |

[a] Only asked of non-participants familiar with CFLs. This represents 38% of all non-participants.

**Section VI Table D-14: Motivation Factors (multiple responses)**

| | Participants (n=71) | Non Participants (n=100) |
|---|---|---|
| Energy savings | 54% | 60% |
| Save money on electric bill | 24% | 11% |
| Rebate/special promotion | 21% | 4% |
| Try something new | 1% | 16% |
| Replacing a burned out light | - | 11% |
| Don't know | 4% | 4% |

*significantly higher than comparison group at 90%

**Section VI Table D-15: Do You Remember Seeing or Hearing the Slogan (multiple responses)**

| | Participants (n=71) | Non Participants (n=100) |
|---|---|---|
| Yes, I remember it | 35% | 32% |
| *TV* | *24%* | *N/A* |
| *Billboard* | *3%* | |
| *In store display materials* | *1%* | |
| *Other* | *1%* | |
| *Don't know* | *6%* | |
| No | 62% | 63% |
| Don't know | 3% | 5% |

**Section VI Table D-16: Were You Planning to Purchase CFLs When You Went into the Store**

| | Participants (n=71) |
|---|---|
| Planned on purchasing before entering store | 69% |
| *Saw ads* | *44%* |
| *Did not see ads* | *25%* |
| Did not plan on purchasing before entering store | 27% |
| *Saw ads* | *14%* |
| *Did not see ads* | *13%* |
| Don't know | *4%* |
| *Saw ads* | *1%* |
| *Did not see ads* | *3%* |

## Section VI Table D-17: Number of CFLs Installed

| Number of CFLs | Participants (n=71) | | | Non Participants (n=100) | | |
|---|---|---|---|---|---|---|
| | Total | Outside | Inside | Total | Outside | Inside |
| 1 | 3% | 7% | 1% | 8% | 7% | 10% |
| 2 | 6% | 7% | 7% | 5% | 7% | 6% |
| 3 | 1% | 3% | 1% | 3% | - | 3% |
| 4 | 6% | 6% | 8% | 3% | 2% | 3% |
| 5 | 7% | 3% | 8% | 4% | - | 3% |
| 6-10 | 37% | 6% | 41% | 10% | 2% | 9% |
| 11-20 | 25% | 3% | 17% | 7% | - | 7% |
| 21 or more | 11% | 1% | 8% | 4% | - | 2% |
| None | 4% | 59% | 1% | 56% | 82% | 57% |
| **Average** | **11** | **2** | **10** | **4** | **0** | **3** |
| **Median** | **8** | **0** | **7** | **0** | **0** | **0** |

## Section VI Table D-18: How Do You Decide Where to Put CFLs

| | Participants (n=71) |
|---|---|
| Sockets most frequently used | 55% |
| Wherever I can | 23% |
| Only where they fit | 8% |
| Areas where I don't need a lot of light | 7% |
| Sockets not frequently used | 3% |
| Hard to reach sockets | 1% |
| Other | 7% |
| Don't know | 1% |

## Section VI Table D-19: Number of CFLs Purchased with AmerenUE Rebate Coupon

| Number of Bulbs Purchased | Participants (n=71) |
|---|---|
| 1 | 6% |
| 2 | 10% |
| 3 | 6% |
| 4 | 9% |
| 5 | 1% |
| 6 | 44% |
| 7-10 | 7% |
| 11-20 | 11% |
| 21 or more | 6% |
| Don't know | 1% |
| **Average** | **8.5** |
| **Median** | **6** |

## Section VI Table D-20: Ace Hardware versus Home Depot

| | Ace Hardware | | Home Depot | |
|---|---|---|---|---|
| | **Participant (n=71)** | **Non Participant (n=100)** | **Participant (n=71)** | **Non Participant (n=100)** |
| Always purchase here | 24%* | 5% | 7% | 8% |
| Usually purchase here | 11% | 7% | 1% | 14%* |
| Sometimes purchase | 41%* | 18% | 17% | 22% |
| Purchased here once or twice | 20% | 12% | 6% | 6% |
| Never purchased here | 3% | 57%* | 68%* | 47% |
| Don't know | 1% | 1% | 1% | 3% |

*significantly higher than comparison group at 90%

## Section VI Table D-21: Where Lighting Purchases Are Made (multiple responses)

| | **Participant (n=71)** | **Non Participants (n=100)** | **Among Non-Participants Who Currently Do Not Use CFLs (n=56)** |
|---|---|---|---|
| Wal-Mart | 55%* | 39% | 39% |
| **Ace Hardware** | **53%*** | **12%** | **16%** |
| Lowe's | 16% | 12% | 13% |
| **Home Depot** | **13%** | **28%*** | **13%** |
| Grocery store | 7% | 11% | 9% |
| Where ever they are on sale | 5% | - | - |
| Target | - | 4% | 4% |
| Kmart | 2% | 3% | 5% |
| Hy vee | 2% | - | - |
| Dollar Store | - | 4% | 7% |
| Sam's Club | - | 2% | - |
| Discount store | 2% | | - |
| Walgreen's | - | 1% | 2% |
| Other | - | 2% | 4% |
| Don't know | - | 3% | 2% |

## Section VI Table D-22: Non Participant Purchase of CFLs at Home Depot

| | **Non Participants (n=100)** |
|---|---|
| Yes | 13% |
| *Single bulbs* | *1%* |
| *Pack of bulbs* | *11%* |
| *Don't know* | *1%* |
| No | 84% |
| Don't know | 3% |

## Section VI Table D-23: Non Participant Purchase of Discounted CFLs at Home Depot

| | Non Participants (n=100) |
|---|---|
| Yes, purchased discounted multi-pack | 4% |
| Purchased full price multi-pack | 5% |
| Don't remember if discounted or not | 2% |
| Didn't purchase multi-pack of CFLs at Home Depot | 89% |

## Section VI Table D-24: Residential Lighting Participant Demographics

| Demographics | Participants (n=71) | Non Participants (n=100) |
|---|---|---|
| **Own/Rent** | | |
| Own | 90% | 84% |
| Rent | 8% | 13% |
| Don't know | 1% | 3% |
| **Household Type** | | |
| Single family | 90% | 83% |
| Duplex or 2 family | 1% | 4% |
| Apartment 2-4 units | 3% | 5% |
| Apartment >4 units | 1% | 5% |
| Mobile home | 3% | 1% |
| Townhouse | - | 2% |
| Other | 1% | - |
| **Number of People** | | |
| 1 | 13% | 27%* |
| 2 | 45% | 45% |
| 3 | 14% | 10% |
| 4 | 17% | 11% |
| 5 | 7% | 4% |
| 6 | 3% | 1% |
| 7 or more | - | 1% |
| Refused | 1% | 1% |
| **Low Income** | | |
| Non Low Income | 63% | 69% |
| Low Income | 19% | 16% |
| Don't know/refused | 19% | 15% |

| Demographics | Participants (n=71) | Non Participants (n=100) |
|---|---|---|
| **Year Built** | | |
| Built in 2006 | 1% | - |
| 2004-2005 | 3% | 1% |
| 2001-2003 | 1% | 7% |
| 1990-2000 | 13% | 15% |
| 1980-1989 | 11% | 5% |
| 1970-1979 | 31%* | 12% |
| 1960-1969 | 8% | 13% |
| 1950-1959 | 10% | 10% |
| 1940-1949 | 1% | 5% |
| Prior to 1939 | 8% | 12% |
| Don't know | 11% | 20% |
| **Education** | | |
| Less than 9th grade | 4% | 2% |
| 9th to 12th grade | 6% | 4% |
| High school graduate | 32% | 33% |
| Some college, no degree | 18% | 21% |
| Associates degree | 4% | 8% |
| Bachelors degree | 14% | 18% |
| Graduate or professional degree | 13% | 10% |
| Don't know/refused | 8% | 4% |
| **Ethnicity/Race** | | |
| White | 92% | 88% |
| Black or African American | - | 10% |
| Alaskan | 1% | - |
| Hispanic/Latino | 1% | - |
| Refused | 6% | 2% |

*significantly higher than comparison group at 90%