Opinion Dynamics

MEMORANDUM

TO: Ameren Illinois Company

FROM: Opinion Dynamics

DATE: February 28, 2013

RE: Preliminary In-Store Customer Interview Results

This memo provides preliminary results from in-store interviews conducted with customers purchasing lighting at retailers participating in AIC's Residential Lighting program. Based on our analysis of the survey results, we present the installation location breakdown between residential versus commercial locations, a program leakage rate, and a program net-to-gross (NTG) ratio.

Interview Methodology

Opinion Dynamics conducted interviews with 365 customers purchasing lighting at 10 participating retail locations. The interviews took place on Saturdays, Sundays, and Mondays over the course of four weeks in January 2013. We conducted interviews with customers purchasing CFLs and LEDs discounted through the program, CFLs and LEDs that were not discounted, and incandescent and halogen light bulbs.

We asked questions to assess program free ridership along with questions to understand the types of customers who are more likely to be free riders. The survey contained questions on the influence of price and marketing materials on the customer's purchase decision. We also asked about reasons for purchasing the type of lighting technology being purchased.

We conducted interviews at Do-It-Yourself (DIY), warehouse, and big box retailers. To gain entry to the stores, we first accompanied the program field representative who was conducting a lighting demonstration. The program representative helped the interviewer gain permission to come back and conduct additional interviews on the following two days. In all cases, permission was granted.

Table 1 shows the number of locations, days spent at each, and the total number of interviews completed by retailer type. We selected retail locations with the most program sales that had a demonstration day either on the schedule or where one could be added. We also made sure to conduct interviews across AIC territory.

Table 1. In-Store Interview Retailer Categories

Retailer Type	Stores	Days	Interviews
Do-It-Yourself	6	18	217
Warehouse	2	6	99
Big Box	2	6	49
Total	**10**	**30**	**365**

We instructed the field interviewers to station themselves in the lighting aisle of the store and approach customers after they had made their purchase decision and were preparing to leave the aisle. Interviewers asked customers to complete a short survey in exchange for a $5 gift card to that particular retail store that they could use that day. Interviewers asked the questions of the customer and recorded their answers into an electronic tablet. We designed and programmed the survey so that we only asked questions that were relevant to the types of bulbs customers were purchasing.

Interviewers recorded the number and types of bulbs that customers intended to purchase. Just over half purchased a less efficient bulb, either a standard incandescent or a new EISA compliant halogen (53%). CFLs were the next most popular bulb with 41% purchasing program-discounted CFLs and 4% purchasing CFLs that were not discounted. AIC currently discounts one LED product at one retailer; we interviewed 4 customers who purchased this bulb (1% of customers interviewed). We interviewed an additional 24 customers (7%) who purchased LEDs that were not discounted. The average customer purchased more incandescents and program CFLs than the other types of bulbs (see Table 2).

Table 2. Bulb Types Purchased

Bulb Type	Customers[1]		Bulbs		
	Number	**Percentage**	**Number**	**Percentage**	**Average**
Program CFL	151	41%	901	40%	6.0
Non-Program CFL	15	4%	48	2%	3.2
Program LED	4	1%	14	1%	3.5
Non-Program LED	24	7%	70	3%	3.2
Incandescent	158	43%	1,112	49%	7.0
Halogen	37	10%	115	5%	3.1
Total	**365**	**107%**	**2,260**	**100%**	**6.2**

[1]Numbers and percentages sum to more than the number of completed interviews and 100% because customers purchased more than one type of bulb. The total, 365, is the total number of customers interviewed.

Installation Location

The Residential Lighting program is an upstream program that discounts efficient lighting at participating retailers. This program delivery mechanism makes it impossible to require that the people who purchase the discounted bulbs are AIC customers who will install them in a residential location. AIC cannot claim savings for bulbs sold to non-AIC customers, but AIC can claim additional savings for bulbs that will be installed in commercial facilities due to their longer operating hours. The in-store survey contained questions that we used to estimate the percentage of bulbs that are made to non-AIC customers and the percentage of bulbs that will be installed in a non-residential location. We weighted both results by the number of bulbs purchased.

Residential versus Commercial Installations

We asked customers if they intended to install the bulbs in a home or business. If a business, we further asked for the type of business, and if a rental property, inquired as to whether the bulbs would be installed in a common area or a tenant unit. We classified bulbs that would be installed in tenant units as residential installations. For customers who said they would install the bulbs in both their home and business, we evenly divided the bulbs between the two locations. We found that 97% of discounted bulbs would be installed in residential locations and 3% in commercial locations.

Table 3. Bulb Installation Location

Location	Percentage
Residential	97%
Commercial	3%

Program Leakage

To estimate program leakage, we asked customers for the name of the utility that provides electricity to their home or business (depending on where they said they would install the bulbs). We found that 11% of discounted bulbs were purchased by non-AIC customers. We will provide a more detailed leakage analysis in a later draft so that AIC can better understand the locations and retailer types that have higher leakage rates. We will also provide AIC with a list of utilities whose customers are purchasing AIC-discounted bulbs.

Table 4. Program Leakage

Utility	Percentage
AIC	89%
Other Utility	11%

Net-to-Gross Ratio

The AIC Residential Lighting program encourages customers to purchase efficient lighting by reducing the purchase price so that the price is closer to that of less efficient alternatives. The program also educates consumers about the benefits of efficient lighting. The intercept survey was

designed to measure the influence of both program components. Accordingly, the formula for our free-ridership algorithm is:

Free Ridership = Minimum (Rebate Impact, Information Impact)

We take the minimum of the two components to ensure the program receives credit for whichever avenue of program influence mattered most to the customer. Averaging the components would penalize the program if it did not influence both. For example, a customer may already understand the benefits of CFLs but still would not buy them at full price. Averaging the two components would reduce overall program influence because the customer said the informational materials did not influence the purchase. [1]

We measured the impact of the rebate by asking questions about the type and quantity of lighting that the customer would have purchased if the CFLs had cost more ($1.00 per bulb for standard and $1.50 for specialty). We measured the impact of program information by asking customers who saw the materials in the store to assess the influence of those materials on their decision to purchase CFLs.

As we discussed in the methodology section above, to gain entry to the stores to conduct the interviews, the first day of data collection at each store was done in conjunction with a program lighting demonstration. We conducted interviews for an additional two days at each store when there was no demonstration. The free ridership estimate for all days was 0.56. We compared the free ridership of purchases made during the hours that the demonstration was taking place to other hours and found that the difference in free ridership was not statistically significant. The free ridership rate of customers who purchased lighting during the demonstration was 0.53 compared to 0.57 for those who purchased lighting without the demonstration present. Because the difference is not statistically significant, we use the free ridership estimate from interviews conducted during all the hours we were in the store to calculate the program NTG ratio.[2]

Table 5. Program Free Ridership

Day Type	Free Ridership
All Hours	0.56
Demonstration Hours	0.53
Non-Demonstration Hours[a]	0.57

[a] We use this estimate in the calculation of overall lighting program NTG.

We used the results from the in-home lighting study we conducted in 2012 and the Cadmus in-home study conducted in 2010 to estimate potential program spillover. The method involves estimating the number of CFLs in AIC homes in both years and comparing the growth in CFLs

[1] The algorithm we used to calculate free ridership is similar but not identical to the one used for ComEd. We made some slight changes based on our past experience conducting similar research. We have consulted with the ComEd team so they are aware of these changes and will consider them for future intercepts. The changes have a very small impact on the free ridership estimate. We also ran the analysis using the ComEd method, which resulted in a free ridership of .61 on non-demonstration days.

[2] Our free ridership estimate is based on interviews with 136 customers who purchased a total of 792 CFLs after excluding interviews conducted with non-AIC customers.

usage to the number of CFLs distributed by AIC. Any CFLs in excess of AIC program distribution, either through upstream sales or other programs, are potential spillover. Our analysis did not find evidence of spillover. This finding does not mean that spillover does not exist. The 2010 study had a smaller sample size than the 2012 study so that the precision of the 2010 estimate was large. It is possible that if we were to conduct a similar study in the future with a larger sample size, we would have enough statistical power to detect spillover.

Given the lack of spillover, the final program NTG ratio is calculated as:

NTG = 1 – Free Ridership

Table 6. Residential Lighting Program NTG

Concept	Ratio
Free Ridership	.56
NTG	.44

We will conduct additional analyses to help AIC understand the types of customers who are more likely to be free riders. We will provide these results in future memos.